

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: NEW

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Task Title: DEMAND A PMIS POINT REVIEW

Trainee: _____ Examiner: _____

Pass: _____ Fail: _____ Examiner Signature: _____ Date: _____

Performed faulted/non-faulted: **NON-Faulted**

Additional Program Information:

1. Appropriate Performance Locations: CR, SIM, EOF
2. Appropriate Trainee level: RO
3. Evaluation Method: Simulate Perform
4. Performance Time: 10 minutes
5. NRC K/A 2.1.31 (4.2)

Directions to Examiner:

1. This JPM evaluates the trainee's ability to **obtain a daily listing of PMIS computer points that have "unhealthy" quality codes.**
2. If this JPM is performed on the Simulator, only the cues preceded by "#" should be given.
3. Observe the trainee during performance of the JPM for proper use of self-checking methods.
4. All blanks must be filled out with either initials or an "NP" for "not performed"; an explanation may also be written in the space if desired by the examiner.

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: NEW

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Task Title: DEMAND A PMIS POINT REVIEW

Directions to Trainee:

When I tell you to begin, you are to complete documentation and apply applicable administrative requirements in response to the initial conditions provided. Before you start, I will state the general plant conditions, the Initiating Cues and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated them as applicable to applying controls and completion of documentation for valve testing, state the actions you are taking, e.g.: repositioning controls and observing instrumentation.

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General Conditions:

1. Today, at 06:20 during shift turnover, you are directed to **obtain a daily listing of PMIS computer points that have "unhealthy" quality codes.**

General References:

1. 2.0.2

General Tools and Equipment:

1. None.

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: NEW

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Task Title: DEMAND A PMIS POINT REVIEW

Special Conditions, References, Tools, Equipment:

1. Critical checks denoted by "*".
1. Simulator cues denoted by "#".
2. Faulted steps denoted by "⊕".

Task Standards:

1. Correctly interpret instrument and system responses and their interrelationships when assessing conditions indicative of a mispositioned control rod.
2. Satisfactory completion of TPE requires a minimum of:
 - a. 100% of critical elements, as defined in the JPM, successfully completed without error.
 - b. 100% of core work practices (e.g., safety, housekeeping, control of tools, material control, proper use of tools, procedure steps performed in sequence and as written) evaluated as satisfactory (SAT) or not applicable (N/A).

Initiating Cue(s):

You are to complete documentation and apply applicable administrative requirements in response to the initial conditions provided (action, unless specified otherwise by the examiner, will be simulated with cues provided by the examiner as necessary).

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: NEW

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Task Title: DEMAND A PMIS POINT REVIEW

Performance Checklist	Standards	Initials
1. Refer to 2.0.2	Refers to 2.0.2, Section 12 for guidance.	_____
2. Demand SUMDSP on an IDT.	At a IDT Computer terminal demands SUMDSP.	_____*
3. Enter quality code for search.	At the keyboard enters BAD, DEL, INV, NCAL, RDER, SUB, and OTC.	_____*
4. Answer "NO" for spare points.	When prompted enters NO for spare points.	_____
5. Enter F2 to print (LA00 will print in DAR, LA01 will be the normal CR output).	Enters F2 to print out Point Summary for the Quality Codes demanded. (Candidate would now initiate a review based on past summaries and plant conditions).	_____*

CUE: Obtain the Point Summary Printout, this JPM is Completed.

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ATTACHMENT 1

Directions to Trainee:

When I tell you to begin, you are to complete documentation and apply applicable administrative requirements in response to the initial conditions provided. Before you start, I will state the general plant conditions, the Initiating Cues and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated them as applicable to applying controls and completion of documentation for valve testing, state the actions you are taking, e.g.: repositioning controls and observing instrumentation.

General Conditions:

Today, at 06:20 during shift turnover as RO.

Initiating Cues:

Today, at 06:20 during shift turnover, you are directed to obtain a daily listing of PMIS computer points that have "unhealthy" quality codes.

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: NEW

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Task Title: PERFORM RO/SRO REVIEW OF DAILY LOG

Trainee: _____ Examiner: _____

Pass: _____ Fail: _____ Examiner Signature: _____ Date: _____

Performed faulted/non-faulted: **Faulted**

Additional Program Information:

1. Appropriate Performance Locations: CR, SIM, EOF
2. Appropriate Trainee level: RO/SRO
3. Evaluation Method: Simulate Perform
4. Performance Time: 10 minutes
5. NRC K/A 2.1.23 (3.9/4.0)

Directions to Examiner:

1. This JPM evaluates the trainee's ability to perform an RO(SRO) review of of the daily logs.
2. If this JPM is performed on the Simulator, only the cues preceded by "#" should be given.
3. All blanks must be filled out with either initials or an "NP" for "not performed"; an explanation may also be written in the space if desired by the examiner.
4. Brief the trainee, place the simulator in run, and tell the trainee to begin.

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: NEW

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Task Title: PERFORM RO/SRO REVIEW OF DAILY LOG

Directions to Trainee:

When I tell you to begin, you are to perform an RO(SRO) review of the daily logs. Before you start, I will state the general plant conditions, the Initiating Cues and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated them to perform an average drywell temperature calculation. During performance, state the actions you are taking, e.g.: repositioning controls and observing instrumentation.

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General Conditions:

1. The plant is operating at 100% power.

General References:

1. Procedure 6.LOG.601

General Tools and Equipment:

1. None

Special Conditions, References, Tools, Equipment:

3. Critical checks denoted by "*".
2. Simulator cues denoted by "#".
3. Faulted steps denoted by "⊕".

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: NEW

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Task Title: PERFORM RO/SRO REVIEW OF DAILY LOG

Task Standards:

1. Accurately locate, identify, operate and/or manipulate all component controls required to be utilized to perform an RO(SRO) review of the daily logs.
2. Accurately locate and identify all instrumentation required to be monitored to perform an RO(SRO) review of the daily logs.
3. Correctly interpret instrument and system responses and their interrelationships when performing an RO(SRO) review of the daily logs.
4. Satisfactory completion of TPE requires a minimum of:
 - a. 100% of critical elements, as defined in the JPM, successfully completed without error.
 - b. 100% of core work practices (e.g., safety, housekeeping, control of tools, material control, proper use of tools, procedure steps performed in sequence and as written) evaluated as satisfactory (SAT) or not applicable (N/A).

Initiating Cue(s):

(RO) You are to fill out Attachment 3, UNIDENTIFIED LEAK RATE CHECKS, using the data provided and complete an RO review of the log sheet per 6.LOG.601. Inform the CRS when the review is complete.

(SRO) You are to perform a SRO review of Attachment 3, UNIDENTIFIED LEAK RATE CHECKS, per 6.LOG.601 and determine applicable actions based upon your review. Inform the SS when the review is complete.

NOTE: Place the Simulator in RUN and tell the trainee to begin.

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Task No.: NEW

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Task Title: PERFORM RO/SRO REVIEW OF DAILY LOG

Performance Checklist	Standards	Initials
NOTE: If performing as RO perform the following steps. If performing as SRO, go to page 6.		
1. Refer to 6.LOG.601.	Refers to 6.LOG.601 Attachment 3.1, 3.2, and Attachment 3.	_____
2. Present Grand Total.	Record RW-FQ-527 reading of 3692 on Attachment 3.	_____*
3. Previous Grand Total.	Record RW-FQ-527 reading of 2252 on Attachment 3.	_____*
4. Calculate total gallons.	Subtract previous grand total from present grand total. Enter 1440 on Attachment 3.	_____*
5. Time interval (minutes).	Calculates time interval (8 hours x 60 minutes/hour) and enters 480 on attachment 3.	_____*
6. Calculate leak rate.	Calculates leak rate (2252 ÷ 480) and enters 3.0 on Attachment 3.	_____*

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: NEW

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Task Title: PERFORM RO/SRO REVIEW OF DAILY LOG

Performance Checklist	Standards	Initials
7. Change in leak rate.	Subtracts previous day leak rate from calculated leak rate (3.0 - 0.8) and records 2.2 on attachment 3.	_____*
8. Review and evaluate readings.	Identifies change in leak rate is above the OPERABILITY LIMIT.	_____*
9. Informs CRS.	Informs CRS that the change in leak rate is above the OPERABILITY LIMIT.	_____

CUE: As the CRS, acknowledge the report. This JPM is complete

NOTE: It is not necessary to sign the sign-off and review sheet.

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: NEW

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Task Title: PERFORM RO/SRO REVIEW OF DAILY LOG

Performance Checklist	Standards	Initials
NOTE: If performing as SRO, perform the following steps.		
10. Review data sheet.	Reviews Attachment 3 and identifies the change in leak rate is above the OPERABILITY LIMIT.	_____*
11. References Attachment 20.	References Attachment 20 and NOTE 51. Determines the NOTE applies to SR 3.4.4.1 and LCO 3.4.4.	_____
12. References Attachment 3 footnotes.	References Attachment 3 footnote (c). Determines TS 3.4.4 LCO statement is not met and the ACTIONS must be entered.	_____*
13. Determines TS Required Action.	References TS 3.4.4 and determines entry into Condition B must be entered.	_____*
14. Determines TS Required Action.	References TS 3.4.4 and determines unidentified leakage increase must be within the limits within 4 hours.	_____*
CUE: If asked DW Particulate Monitor reading respond 200 cpm.		
15. Informs the SS.	Informs the SS of that the unidentified leakage increase is not within the limit and TS 3.4.4 Condition B has been entered.	_____
CUE: As the SS, acknowledge the report. This task is complete.		

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: NEW

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Task Title: PERFORM RO/SRO REVIEW OF DAILY LOG

Performance Checklist

Standards

Initials

NOTE: It is not necessary to sign the sign-off and review sheet.

ATTACHMENT 1 (RO)

Directions to Trainee:

When I tell you to begin, you are to enter the data on the appropriate log sheet and complete the RO review of the daily log. Before you start, I will state the general plant conditions, the Initiating Cues and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated them to enter the data on the appropriate log sheet and complete the RO review of the daily log. During performance, state the actions you are taking, e.g.: repositioning controls and observing instrumentation.

General Conditions:

1. The plant is operating at 100% power.

Initiating Cues:

You are to fill out Attachment 3, UNIDENTIFIED LEAK RATE CHECKS, using the data provided and complete an RO review of the log sheet per 6.LOG.601. Inform the CRS when the review is complete.

ATTACHMENT 2 (SRO)

Directions to Trainee:

When I tell you to begin, you are to perform a SRO review of the daily logs. Before you start, I will state the general plant conditions, the Initiating Cues and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated them to perform an SRO review of the daily logs. During performance, state the actions you are taking, e.g.: repositioning controls and observing instrumentation.

General Conditions:

1. The plant is operating at 100% power.

Initiating Cues:

You are to perform a SRO review of Attachment 3, UNIDENTIFIED LEAK RATE CHECKS, per 6.LOG.601 and determine applicable actions based upon your review. Inform the SS when the review is complete.

DATA SHEET

Readings taken at 1600:

RW-FQ-527 = 5320

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: NEW

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Task Title: SURVEILLANCE 6.SC.201: APPLICATION OF ADMINISTRATIVE
REQUIREMENTS DURING PERFORMANCE OF THE TEST
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Trainee: _____ Examiner: _____

Pass: _____ Fail: _____ Examiner Signature: _____ Date: _____

Performed faulted/non-faulted: **NON-Faulted**

Additional Program Information:

1. Appropriate Performance Locations: CR, SIM, EOF
2. Appropriate Trainee level: RO
3. Evaluation Method: Simulate Perform
4. Performance Time: 10 minutes
5. NRC K/A 2.2.12 (3.o)

Directions to Examiner:

1. This JPM evaluates the trainee's ability to apply administrative requirements during valve testing.
2. If this JPM is performed on the Simulator, only the cues preceded by "#" should be given.
3. Observe the trainee during performance of the JPM for proper use of self-checking methods.
4. All blanks must be filled out with either initials or an "NP" for "not performed"; an explanation may also be written in the space if desired by the examiner.

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: NEW

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Task Title: SURVEILLANCE 6.SC.201: APPLICATION OF ADMINISTRATIVE
REQUIREMENTS DURING PERFORMANCE OF THE TEST

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Directions to Trainee:

When I tell you to begin, you are to complete documentation and apply applicable administrative requirements during valve testing (the actual testing will be simulated with cues will be provided by the examiner as necessary). Before you start, I will state the general plant conditions, the Initiating Cues and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated them as applicable to applying controls and completion of documentation for valve testing, state the actions you are taking, e.g.: repositioning controls and observing instrumentation.

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General Conditions:

1. Surveillance 6.SC.201, Secondary Containment (Reactor Building H&V) Valve Operability Test, is in progress for the 92-day test. The first damper HV-AO-257, HV-R-1A, is CLOSED and TIMED at 10.0 seconds (step 5.5).

General References:

2. 6.SC.201

General Tools and Equipment:

1. None.

Special Conditions, References, Tools, Equipment:

4. Critical checks denoted by "*".
2. Simulator cues denoted by "#".
3. Faulted steps denoted by "⊕".

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: NEW

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Task Title: SURVEILLANCE 6.SC.201: APPLICATION OF ADMINISTRATIVE
REQUIREMENTS DURING PERFORMANCE OF THE TEST

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JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: NEW

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Task Title: SURVEILLANCE 6.SC.201: APPLICATION OF ADMINISTRATIVE
REQUIREMENTS DURING PERFORMANCE OF THE TEST

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Task Standards:

1. Correctly interpret instrument and system responses and their interrelationships when performing valve testing.
2. Satisfactory completion of TPE requires a minimum of:
 - a. 100% of critical elements, as defined in the JPM, successfully completed without error.
 - b. 100% of core work practices (e.g., safety, housekeeping, control of tools, material control, proper use of tools, procedure steps performed in sequence and as written) evaluated as satisfactory (SAT) or not applicable (N/A).

Initiating Cue(s):

You are to enter data provided on the appropriate data sheet and apply any requirements that are or become applicable during damper testing until all dampers have been tested. (The actual testing will be simulated with cues provided by the examiner as necessary).

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: NEW

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Task Title: SURVEILLANCE 6.SC.201: APPLICATION OF ADMINISTRATIVE REQUIREMENTS DURING PERFORMANCE OF THE TEST

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Performance Checklist	Standards	Initials
1. Refer to 6.SC.201.	Refers to 6.SC.201 Attachment 1, and Step 5.5.	_____
2. HV-AO-257 stroke time.	Enters 10.0 in the CLOSING STROKE TIME block for HV-AO-257.	_____
	Determines within OPERABILITY LIMIT and IST RETEST LIMIT; okay to CLOSE AND TIME the next damper	_____*
	Enters NA in the RESTEST STROKE TIME block for HV-AO-257.	_____

CUE: If trainee states stroke time is acceptable and okay to test the next damper, state HV-AO-259 stroke time is 8.2 seconds.

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: NEW

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Task Title: SURVEILLANCE 6.SC.201: APPLICATION OF ADMINISTRATIVE REQUIREMENTS DURING PERFORMANCE OF THE TEST

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Performance Checklist	Standards	Initials
3. HV-AO-259 stroke time.	Enters 8.2 in the CLOSING STROKE TIME block for HV-AO-259.	_____
	Determines within OPERABILITY LIMIT but NOT within IST RETEST LIMIT; references step 6.2 and 6.4 and determines damper must be re-tested.	_____*
	CUE: If the trainee wants to re-test HV-AO-259, state HV-AO-259 stroke time is 7.4 seconds.	
	Enters 7.4 in the RESTEST STROKE TIME block for HV-AO-259.	_____
	Determines within OPERABILITY LIMIT but NOT within IST RETEST LIMIT; informs the CRS.	_____*
	CUE: As the CRS, state that you will contact engineering for an evaluation; another operator will write the notification.	
	CUE: As the CRS, direct the operator to continue the Test.	
	CUE: State HV-AO-261 stroke time is	

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: NEW

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Task Title: SURVEILLANCE 6.SC.201: APPLICATION OF ADMINISTRATIVE
 REQUIREMENTS DURING PERFORMANCE OF THE TEST

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8.2 seconds.

Performance Checklist	Standards	Initials
4. HV-AO-261 stroke time.	Enters 8.2 in the CLOSING STROKE TIME block for HV-AO-261.	_____
	Determines NOT within OPERABILITY LIMIT; references step 6.1 and determines damper should NOT be re-tested (Per 0.26, Section 6.2.14)..	_____*
	Informs CRS HV-AO-261 CLOSING STROKE TIME is above the OPERBILITY LIMIT.	_____

CUE: As the CRS, inform the operator that the test is being placed on hold. This JPM is complete.

ATTACHMENT 2

Directions to Trainee:

When I tell you to begin, you are to complete documentation and apply applicable administrative requirements during valve testing (the actual testing will be simulated with cues will be provided by the examiner as necessary). Before you start, I will state the general plant conditions, the Initiating Cues and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated them as applicable to applying controls and completion of documentation for valve testing, state the actions you are taking, e.g.: repositioning controls and observing instrumentation.

General Conditions:

1. Surveillance 6.SC.201, Secondary Containment (Reactor Building H&V) Valve Operability Test, is in progress for the 92-day test. The first damper HV-AO-257, HV-R-1A, is CLOSED and TIMED at 10.0 seconds (step 5.5).

Initiating Cues:

You are to enter data provided on the appropriate data sheet and apply any requirements that are or become applicable during damper testing until all dampers have been tested. (The actual testing will be simulated with cues provided by the examiner as necessary).

Cooper Nuclear Station Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 1
Examination Level	RO
Administrative Topic	A.3
Subject Description:	Radiation Protection
Question Number:	1

Question:
 You have an accumulated TEDE of 0.5 Rem for the year. Because of dose projections for work in the outage, you are expected to receive an additional TEDE of 0.8 Rem.
 What authorization is required for you to receive the expected dose?

Answer:
 Individual's Supervisor (SS), and ALARA Supervisor.
 Justification:
 The total expected dose is 1300 mrem. Approvals for dose above 1000 mrem are required by the ALARA Supervisor.

Technical Reference(s):
 9.ALARA.1: 6.2.1

K/A #:	Importance:
2.3.1	2.6
2.3.4	2.5

Comments:

Cooper Nuclear Station Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 1
Examination Level	RO
Administrative Topic	A.3
Subject Description:	Radiation Protection
Question Number:	2

Question:
<p>The scram discharge volume must be drained during an ATWS. Conditions are:</p> <ul style="list-style-type: none"> • All ARMs on the Reactor Building 903' elevation are alarming and indicate offscale high. • Drywell Radiation Monitor RMA-RM-40A reads 8×10^3 R/hr. • Drywell Radiation Monitor RMA-RM-40B reads 2×10^3 R/hr. • Emergency Director declared a Site Area Emergency five (5) minutes ago. • The TSC is not operational <p>What radiological requirements are required to drain the scram discharge volume?</p>

Answer:
<p>Must be accompanied by a RP Tech.</p> <p>Justification: If either station area radiation monitor is off-scale the SS instructs the SO to meet the RP Technician. If either drywell radiation monitor was above 10^4 R/hr then the crew must wait of the TSC to be operational.</p>

Technical Reference(s):
5.8.3, Section 3.1.2.3 5.7.15

K/A #:	Importance:
2.3.1	2.6
2.3.10	3.3

Comments:

Cooper Nuclear Station Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 1
Examination Level	RO
Administrative Topic	A.4
Subject Description:	Emergency Facilities / Procedures
Question Number:	1

Question:
 What emergency facilities are activated for an ALERT emergency classification if this is the INITIAL emergency plan classification?

Answer:
 TSC (0.4 pt.), OSC (0.4 pt.), and EOF (0.2 pt.) are activated for an Alert, Site Area Emergency, and General Emergency.

Technical Reference(s):
 5.7.2, Att. 4
 5.7.7: Section 1
 5.7.8: Section 1
 5.7.9: Section 1

K/A #:	Importance:
2.4.29	2.6
2.4.39	3.3

Comments:

Cooper Nuclear Station Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 1
Examination Level	RO
Administrative Topic	A.4
Subject Description:	Emergency Facilities / Procedures
Question Number:	2

Question:

You are a licensed Reactor Operator on day shift assigned to the RELIEF CREW. You are escorting two (2) visitors who are auditing clearances in the Work Control Center. A transient occurs that results in the initial declaration of an ALERT and a site evacuation.

What are your required actions regarding the location that you and the visitors physically report to?

Answer:

Escort the visitors to the exit turnstile and direct them to go to Training Building Classroom "J", "H" or "I" and then report to the Control Room.

Justification:
 Personnel escorting visitors shall take them to the exit turnstile and direct them to report to the Training Building Classroom "J", "H", or "I" for assembly. Escorts then report to their own designated assembly area. Operations personnel acting as relief crew shall report to the Control Room.

Technical Reference(s):
 5.7.10: 4.2, 4.3.2

K/A #:	Importance:
2.4.29	2.6
2.4.29	3.3

Comments:

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: NEW

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Task Title: PERFORM A TIME TO BOIL DETERMINATION (SRO ONLY)

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Trainee: _____ Examiner: _____

Pass: _____ Fail: _____ Examiner Signature: _____

_____ Date: _____

Performed faulted/non-faulted: **NON-Faulted**

Additional Program Information:

1. Appropriate Performance Locations: CR, SIM, EOF
2. Appropriate Trainee level: SRO
3. Evaluation Method: Simulate Perform
4. Performance Time: 10 minutes
5. NRC K/A 2.1.23 (4.0), 2.1.25 (3.1)

Directions to Examiner:

1. This JPM evaluates the trainee's ability to perform a Time To Boil Determination.

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Task No.: NEW

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Task Title: PERFORM A TIME TO BOIL DETERMINATION (SRO ONLY)

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2. If this JPM is performed on the Simulator, only the cues preceded by "#" should be given.
3. All blanks must be filled out with either initials or an "NP" for "not performed"; an explanation may also be written in the space if desired by the examiner.
4. Brief the trainee, place the simulator in run, and tell the trainee to begin.

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Task No.: NEW

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Task Title: PERFORM A TIME TO BOIL DETERMINATION (SRO ONLY)

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Directions to Trainee:

When I tell you to begin, you are to perform a Time To Boil Determination. Before you start, I will state the general plant conditions, the Initiating Cues and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated them to perform a Time To Boil Determination. During performance, state the actions you are taking, e.g.: repositioning controls and observing instrumentation.

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General Conditions:

1. The plant is shutdown for refueling. The reactor has been shutdown for 45 hours. The steam separator is being removed and flood up of the reactor cavity has begun. RHR HX inlet

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Task Title: PERFORM A TIME TO BOIL DETERMINATION (SRO ONLY)

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temperature indicates 110°F as read on RHR-TI-131. RPV water level just reaches the reactor vessel flange when RHR isolates on high pressure (instrument failure). The isolation signal cannot be reset, and no other method of decay heat removal can be established.

General References:

1. 2.4SDC

General Tools and Equipment:

1. None

Special Conditions, References, Tools, Equipment:

1. Simulator Setup: See Attachment 1.
2. Critical checks denoted by "*".
3. Simulator cues denoted by "#".
4. Faulted steps denoted by "⌚".

Task Standards:

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: NEW

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Task Title: PERFORM A TIME TO BOIL DETERMINATION (SRO ONLY)

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1. Accurately locate, identify, operate and/or manipulate all component controls required to be utilized to perform a Time To Boil Determination
2. Accurately locate and identify all instrumentation required to be monitored to perform a Time To Boil Determination.
3. Correctly interpret instrument and system responses and their interrelationships when performing a Time To Boil Determination.
4. Satisfactory completion of TPE requires a minimum of:
 - a. 100% of critical elements, as defined in the JPM, successfully completed without error.
 - b. 100% of core work practices (e.g., safety, housekeeping, control of tools, material control, proper use of tools, procedure steps performed in sequence and as written) evaluated as satisfactory (SAT) or not applicable (N/A).

Initiating Cue(s):

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: NEW

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Task Title: PERFORM A TIME TO BOIL DETERMINATION (SRO ONLY)

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You are to perform a Time To Boil Determination. Inform the SS of the amount of time until reactor coolant temperature reaches 212°F.

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: NEW

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Task Title: PERFORM A TIME TO BOIL DETERMINATION (SRO ONLY)

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Performance Checklist	Standards	Initials
1. Refer to 2.4SDC.	Refers to 2.4SDC Attachment 5, Figure 2.	_____
2. Determines which diagram to use.	Uses hours after shutdown diagram on Figure 2.	_____*
3. Applies 45 hours after shutdown and 110°F RHR HX temp.	Plots intersect of 45 hours after shutdown and 110°F curve.	_____*
4. Determines hours to boiling.	Relates the 45 hour – 110°F intersect to the hours to boiling axis and determines approximately 2.6 (2.3-2.9 hours is acceptable).	_____*
5. Informs SS.	Informs SS that the time to boil is approximately 2.6 hours (2.3-2.9 hours is acceptable).	_____
CUE: As the SS, acknowledge the report.		

ATTACHMENT 2

Directions to Trainee:

When I tell you to begin, you are to perform a Time To Boil Determination. Before you start, I will state the general plant conditions, the Initiating Cues and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated them to perform a Time To Boil Determination. During performance, state the actions you are taking, e.g.: repositioning controls and observing instrumentation.

General Conditions:

1. The plant is shutdown for refueling. The reactor has been shutdown for 45 hours. The steam separator is being removed and flood up of the reactor cavity has begun. RHR HX inlet temperature indicates 110°F as read on RHR-TI-131. RPV water level just reaches the reactor vessel flange when RHR isolates on high pressure (instrument failure). The isolation signal cannot be reset, and no other method of decay heat removal can be established.

Initiating Cues:

You are to perform a Time To Boil Determination. Inform the SS of the amount of time until reactor coolant temperature reaches 212°F.

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: NEW

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Task Title: PERFORM RO/SRO REVIEW OF DAILY LOG

Trainee: _____ Examiner: _____

Pass: _____ Fail: _____ Examiner Signature: _____

_____ Date: _____

Performed faulted/non-faulted: **Faulted**

Additional Program Information:

1. Appropriate Performance Locations: CR, SIM, EOF
2. Appropriate Trainee level: RO/SRO
3. Evaluation Method: ___ Simulate ___ Perform
4. Performance Time: 10 minutes
5. NRC K/A 2.1.23 (3.9/4.0)

Directions to Examiner:

1. This JPM evaluates the trainee's ability to perform an RO(SRO) review of of the daily logs.
2. If this JPM is performed on the Simulator, only the cues preceded by "#" should be given.

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: NEW

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Task Title: PERFORM RO/SRO REVIEW OF DAILY LOG

3. All blanks must be filled out with either initials or an “NP” for “not performed”; an explanation may also be written in the space if desired by the examiner.
4. Brief the trainee, place the simulator in run, and tell the trainee to begin.

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: NEW

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Task Title: PERFORM RO/SRO REVIEW OF DAILY LOG

Directions to Trainee:

When I tell you to begin, you are to perform an RO(SRO) review of the daily logs. Before you start, I will state the general plant conditions, the Initiating Cues and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated them to perform an average drywell temperature calculation. During performance, state the actions you are taking, e.g.: repositioning controls and observing instrumentation.

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General Conditions:

1. The plant is operating at 100% power.

General References:

1. Procedure 6.LOG.601

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: NEW

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Task Title: PERFORM RO/SRO REVIEW OF DAILY LOG

General Tools and Equipment:

1. None

Special Conditions, References, Tools, Equipment:

2. Critical checks denoted by "*".
2. Simulator cues denoted by "#".
3. Faulted steps denoted by "⌚".

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: NEW

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Task Title: PERFORM RO/SRO REVIEW OF DAILY LOG

Task Standards:

1. Accurately locate, identify, operate and/or manipulate all component controls required to be utilized to perform an RO(SRO) review of the daily logs.
2. Accurately locate and identify all instrumentation required to be monitored to perform an RO(SRO) review of the daily logs.
3. Correctly interpret instrument and system responses and their interrelationships when performing an RO(SRO) review of the daily logs.
4. Satisfactory completion of TPE requires a minimum of:
 - a. 100% of critical elements, as defined in the JPM, successfully completed without error.
 - b. 100% of core work practices (e.g., safety, housekeeping, control of tools, material control, proper use of tools, procedure steps performed in sequence and as written) evaluated as satisfactory (SAT) or not applicable (N/A).

Initiating Cue(s):

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: NEW

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Task Title: PERFORM RO/SRO REVIEW OF DAILY LOG

(RO) You are to fill out Attachment 3, UNIDENTIFIED LEAK RATE CHECKS, using the data provided and complete an RO review of the log sheet per 6.LOG.601. Inform the CRS when the review is complete.

(SRO) You are to perform a SRO review of Attachment 3, UNIDENTIFIED LEAK RATE CHECKS, per 6.LOG.601 and determine applicable actions based upon your review. Inform the SS when the review is complete.

NOTE: Place the Simulator in RUN and tell the trainee to begin.

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: NEW

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Task Title: PERFORM RO/SRO REVIEW OF DAILY LOG

Performance Checklist	Standards	Initials
NOTE: If performing as RO perform the following steps. If performing as SRO, go to page 6.		
1. Refer to 6.LOG.601.	Refers to 6.LOG.601 Attachment 3.1, 3.2, and Attachment 3.	_____
2. Present Grand Total.	Record RW-FQ-527 reading of 3692 on Attachment 3.	_____*
3. Previous Grand Total.	Record RW-FQ-527 reading of 2252 on Attachment 3.	_____*
4. Calculate total gallons.	Subtract previous grand total from present grand total. Enter 1440 on Attachment 3.	_____*
5. Time interval (minutes).	Calculates time interval (8 hours x 60 minutes/hour) and enters 480 on attachment 3.	_____*
6. Calculate leak rate.	Calculates leak rate (2252 ÷ 480) and enters 3.0 on Attachment 3.	_____*

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: NEW

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Task Title: PERFORM RO/SRO REVIEW OF DAILY LOG

Performance Checklist	Standards	Initials
7. Change in leak rate.	Subtracts previous day leak rate from calculated leak rate (3.0 - 0.8) and records 2.2 on attachment 3.	_____*
8. Review and evaluate readings.	Identifies change in leak rate is above the OPERABILITY LIMIT.	_____*
9. Informs CRS.	Informs CRS that the change in leak rate is above the OPERABILITY LIMIT.	_____

CUE: As the CRS, acknowledge the report. This JPM is complete

NOTE: It is not necessary to sign the sign-off and review sheet.

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: NEW

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Task Title: PERFORM RO/SRO REVIEW OF DAILY LOG

Performance Checklist	Standards	Initials
NOTE: If performing as SRO, perform the following steps.		
10. Review data sheet.	Reviews Attachment 3 and identifies the change in leak rate is above the OPERABILITY LIMIT.	_____*
11. References Attachment 20.	References Attachment 20 and NOTE 51. Determines the NOTE applies to SR 3.4.4.1 and LCO 3.4.4.	_____
12. References Attachment 3 footnotes.	References Attachment 3 footnote (c). Determines TS 3.4.4 LCO statement is not met and the ACTIONS must be entered.	_____*
13. Determines TS Required Action.	References TS 3.4.4 and determines entry into Condition B must be entered.	_____*
14. Determines TS Required Action.	References TS 3.4.4 and determines unidentified leakage increase must be within the limits within 4 hours.	_____*
CUE: If asked DW Particulate Monitor reading respond 200 cpm.		
15. Informs the SS.	Informs the SS of that the unidentified leakage increase is not within the limit and TS 3.4.4 Condition B has been entered.	_____
CUE: As the SS, acknowledge the report. This task is complete.		

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: NEW

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Task Title: PERFORM RO/SRO REVIEW OF DAILY LOG

Performance Checklist

Standards

Initials

NOTE: It is not necessary to sign the sign-off and review sheet.

ATTACHMENT 1 (RO)

Directions to Trainee:

When I tell you to begin, you are to enter the data on the appropriate log sheet and complete the RO review of the daily log. Before you start, I will state the general plant conditions, the Initiating Cues and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated them to enter the data on the appropriate log sheet and complete the RO review of the daily log. During performance, state the actions you are taking, e.g.: repositioning controls and observing instrumentation.

General Conditions:

1. The plant is operating at 100% power.

Initiating Cues:

You are to fill out Attachment 3, UNIDENTIFIED LEAK RATE CHECKS, using the data provided and complete an RO review of the log sheet per 6.LOG.601. Inform the CRS when the review is complete.

ATTACHMENT 2 (SRO)

Directions to Trainee:

When I tell you to begin, you are to perform a SRO review of the daily logs. Before you start, I will state the general plant conditions, the Initiating Cues and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated them to perform an SRO review of the daily logs. During performance, state the actions you are taking, e.g.: repositioning controls and observing instrumentation.

General Conditions:

1. The plant is operating at 100% power.

Initiating Cues:

You are to perform a SRO review of Attachment 3, UNIDENTIFIED LEAK RATE CHECKS, per 6.LOG.601 and determine applicable actions based upon your review. Inform the SS when the review is complete.

DATA SHEET

Readings taken at 1600:

RW-FQ-527 = 5320

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: NEW

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Task Title: LOG ENTRY INTO THE NARRATIVE LOGS SYSTEM (SRO ONLY)

Trainee: _____ Examiner: _____

Pass: _____ Fail: _____ Examiner Signature: _____
_____ Date: _____

Performed faulted/non-faulted: **NON-Faulted**

Additional Program Information:

1. Appropriate Performance Locations: CR, SIM, EOF
2. Appropriate Trainee level: SRO
3. Evaluation Method: ___ Simulate ___ Perform
4. Performance Time: 25 minutes
5. NRC K/A 2.2.23 (3.8)

Directions to Examiner:

1. This JPM evaluates the trainee's ability to log a TS entry.
2. If this JPM is performed on the Simulator, only the cues preceded by "#" should be given.

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: NEW

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Task Title: LOG ENTRY INTO THE NARRATIVE LOGS SYSTEM (SRO ONLY)

3. All blanks must be filled out with either initials or an ANP@ for Anot performed@; an explanation may also be written in the space if desired by the examiner.
4. Brief the trainee, place the simulator in run, and tell the trainee to begin.

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: NEW

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Task Title: LOG ENTRY INTO THE NARRATIVE LOGS SYSTEM (SRO ONLY)

Directions to Trainee:

When I tell you to begin, you are to log an entry into the narrative logs. Before you start, I will state the general plant conditions, the Initiating Cues and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated them to log a TS entry. During performance, state the actions you are taking, e.g.: repositioning controls and observing instrumentation.

=====
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General Conditions:

1. The plant is at 100% power. At 0000, HPCI was declared inoperable for planned maintenance on the auxiliary oil pump. The maintenance is scheduled for 12 hours. TS 3.5.1 LCO statement is NOT met and entry into Condition C is required.

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: NEW

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Task Title: LOG ENTRY INTO THE NARRATIVE LOGS SYSTEM (SRO ONLY)

2. The SS and WCC SRO have provided concurrence that the LCO declaration is correct and verified appropriate equipment that is required to be OPERABLE is OPERABLE.
3. The control room staff has been informed that HPCI is inoperable for maintenance.
4. Work Order #4000089.
5. T.S. Trcker and SAP are unavailable

General References:

1. 2.0.11
2. TS 3.5.1

General Tools and Equipment:

1. Computer that provides access to the narrative log and has print capability.

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: NEW

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Task Title: LOG ENTRY INTO THE NARRATIVE LOGS SYSTEM (SRO ONLY)

Special Conditions, References, Tools, Equipment:

3. Critical checks denoted by "*".
2. Simulator cues denoted by "#".
3. Faulted steps denoted by "⌚".
4. Ensure active log available for exam date.

Task Standards:

1. Accurately locate, identify, operate and/or manipulate all component controls required to be utilized to log a TS entry.
2. Accurately locate and identify all instrumentation required to be monitored to log a TS entry.
3. Correctly interpret instrument and system responses and their interrelationships when logging a TS entry.
4. Satisfactory completion of TPE requires a minimum of:
 - a. 100% of critical elements, as defined in the JPM, successfully completed without error.
 - b. 100% of core work practices (e.g., safety, housekeeping, control of tools, material

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: NEW

=====

Task Title: LOG ENTRY INTO THE NARRATIVE LOGS SYSTEM (SRO ONLY)

control, proper use of tools, procedure steps performed in sequence and as written) evaluated as satisfactory (SAT) or not applicable (N/A).

Initiating Cue(s):

You are to perform a log entry into the narrative log and provided a printed copy for the SS to review.

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: NEW

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Task Title: LOG ENTRY INTO THE NARRATIVE LOGS SYSTEM (SRO ONLY)

Performance Checklist	Standards	Initials
1. Refer to 2.0.11.	Refers to 2.0.11 Step 3.1.7 for guidance.	_____
2. Accesses narrative log.	Accesses narrative log.	_____*
3. Date and time.	Enters date (today's date) and time (0000) of inoperability.	_____*
4. Condition, Required Action, and Completion Times	Enters LCO Condition (TS 3.5.1.C HPCI System inoperable; RA C.1, Verify by administrative means RCIC system is OPERABLE within 1 hour <u>AND</u> RA C.2 Restore HPCI to OPERABLE status within 14 days.	_____*
5. Work Order	Enters Work Order #4000089.	_____*
6. Prints a report.	Prints a report of the entry and provides it to the SS. CUE: This JPM is complete.	_____

ATTACHMENT 1

Directions to Trainee:

When I tell you to begin, you are perform a log entry into the narrative logs. Before you start, I will state the general plant conditions, the Initiating Cues and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated them to perform a log entry into the TS Tracking System. During performance, state the actions you are taking, e.g.: repositioning controls and observing instrumentation.

General Conditions:

1. The plant is at 100% power. At 0000, HPCI was declared inoperable for planned maintenance on the auxiliary oil pump. The maintenance is scheduled for 12 hours. TS 3.5.1 LCO statement is NOT met and entry into Condition C is required.
2. The SS and WC-SRO have provided concurrence that the LCO declaration is correct and verified appropriate equipment that is required to be OPERABLE is OPERABLE.
3. The control room staff has been informed that HPCI is inoperable for maintenance.
4. Work Order #4000089.

Initiating Cues:

You are to perform a log entry into the narrative log and provided a printed copy for the SS to review.

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: NEW

=====

Task Title: LOG ENTRY INTO THE NARRATIVE LOGS SYSTEM (SRO ONLY)

Trainee: _____ Examiner: _____

Pass: _____ Fail: _____ Examiner Signature: _____ Date: _____

Performed faulted/non-faulted: **NON-Faulted**

Additional Program Information:

1. Appropriate Performance Locations: CR, SIM, EOF
2. Appropriate Trainee level: SRO
3. Evaluation Method: Simulate Perform
4. Performance Time: 25 minutes
5. NRC K/A 2.2.23 (3.8)

Directions to Examiner:

1. This JPM evaluates the trainee's ability to log a TS entry.
2. If this JPM is performed on the Simulator, only the cues preceded by "#" should be given.
3. All blanks must be filled out with either initials or an ANP@ for Anot performed@; an explanation may also be written in the space if desired by the examiner.
4. Brief the trainee, place the simulator in run, and tell the trainee to begin.

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: NEW

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Task Title: LOG ENTRY INTO THE NARRATIVE LOGS SYSTEM (SRO ONLY)

Directions to Trainee:

When I tell you to begin, you are to log an entry into the narrative logs. Before you start, I will state the general plant conditions, the Initiating Cues and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated them to log a TS entry. During performance, state the actions you are taking, e.g.: repositioning controls and observing instrumentation.

=====

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General Conditions:

1. The plant is at 100% power. At 0000, HPCI was declared inoperable for planned maintenance on the auxiliary oil pump. The maintenance is scheduled for 12 hours. TS 3.5.1 LCO statement is NOT met and entry into Condition C is required.
2. The SS and WCC SRO have provided concurrence that the LCO declaration is correct and verified appropriate equipment that is required to be OPERABLE is OPERABLE.
3. The control room staff has been informed that HPCI is inoperable for maintenance.
4. Work Order #4000089.
5. T.S. Trcker and SAP are unavailable

General References:

1. 2.0.11
2. TS 3.5.1

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: NEW

=====

Task Title: LOG ENTRY INTO THE NARRATIVE LOGS SYSTEM (SRO ONLY)

General Tools and Equipment:

1. Computer that provides access to the narrative log and has print capability.

Special Conditions, References, Tools, Equipment:

4. Critical checks denoted by "*".
2. Simulator cues denoted by "#".
3. Faulted steps denoted by "⊕".
4. Ensure active log available for exam date.

Task Standards:

1. Accurately locate, identify, operate and/or manipulate all component controls required to be utilized to log a TS entry.
2. Accurately locate and identify all instrumentation required to be monitored to log a TS entry.
3. Correctly interpret instrument and system responses and their interrelationships when logging a TS entry.
4. Satisfactory completion of TPE requires a minimum of:
 - a. 100% of critical elements, as defined in the JPM, successfully completed without error.
 - b. 100% of core work practices (e.g., safety, housekeeping, control of tools, material control, proper use of tools, procedure steps performed in sequence and as written) evaluated as satisfactory (SAT) or not applicable (N/A).

Initiating Cue(s):

You are to perform a log entry into the narrative log and provided a printed copy for the SS to review.

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: NEW

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Task Title: LOG ENTRY INTO THE NARRATIVE LOGS SYSTEM (SRO ONLY)

Performance Checklist	Standards	Initials
1. Refer to 2.0.11.	Refers to 2.0.11 Step 3.1.7 for guidance.	_____
2. Accesses narrative log.	Accesses narrative log.	_____*
3. Date and time.	Enters date (todays date) and time (0000) of inoperability.	_____*
4. Condition, Required Action, and Completion Times	Enters LCO Condition (TS 3.5.1.C HPCI System inoperable; RA C.1, Verify by administrative means RCIC system is OPERABLE within 1 hour <u>AND</u> RA C.2 Restore HPCI to OPERABLE status within 14 days.	_____*
5. Work Order	Enters Work Order #4000089.	_____*
6. Prints a report.	Prints a report of the entry and provides it to the SS. CUE: This JPM is complete.	_____

ATTACHMENT 1

Directions to Trainee:

When I tell you to begin, you are perform a log entry into the narrative logs. Before you start, I will state the general plant conditions, the Initiating Cues and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated them to perform a log entry into the TS Tracking System. During performance, state the actions you are taking, e.g.: repositioning controls and observing instrumentation.

General Conditions:

1. The plant is at 100% power. At 0000, HPCI was declared inoperable for planned maintenance on the auxiliary oil pump. The maintenance is scheduled for 12 hours. TS 3.5.1 LCO statement is NOT met and entry into Condition C is required.
2. The SS and WC-SRO have provided concurrence that the LCO declaration is correct and verified appropriate equipment that is required to be OPERABLE is OPERABLE.
3. The control room staff has been informed that HPCI is inoperable for maintenance.
4. Work Order #4000089.

Initiating Cues:

You are to perform a log entry into the narrative log and provided a printed copy for the SS to review.

Cooper Nuclear Station Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 1
Examination Level	SRO
Administrative Topic	A.3
Subject Description:	Radiation Protection
Question Number:	1

Question:								
<p>To support of an outage, two Station Operators will be assigned outage jobs and two will continue shift duties. Each of the four Station Operators is fully qualified and competent to perform the jobs to be assigned. The accumulated TEDE for the Station Operators and the dose projections for the assignments are:</p> <table><tbody><tr><td>SO #1 = 100 mrem</td><td>Shift Duties #1 = 100 mrem</td></tr><tr><td>SO #2 = 250 mrem</td><td>Shift Duties #2 = 300 mrem</td></tr><tr><td>SO #3 = 300 mrem</td><td>Outage Job #1 = 550 mrem</td></tr><tr><td>SO #4 = 550 mrem</td><td>Outage Job #2 = 400 mrem</td></tr></tbody></table> <p>Plant management has indicated that NO dose extensions will be authorized except for contract personnel performing RPV weld inspections.</p> <p>Considering the guidelines associated with radiological protection at the facility and the directive by Plant Management regarding dose extensions, assign the Station Operators a job.</p>	SO #1 = 100 mrem	Shift Duties #1 = 100 mrem	SO #2 = 250 mrem	Shift Duties #2 = 300 mrem	SO #3 = 300 mrem	Outage Job #1 = 550 mrem	SO #4 = 550 mrem	Outage Job #2 = 400 mrem
SO #1 = 100 mrem	Shift Duties #1 = 100 mrem							
SO #2 = 250 mrem	Shift Duties #2 = 300 mrem							
SO #3 = 300 mrem	Outage Job #1 = 550 mrem							
SO #4 = 550 mrem	Outage Job #2 = 400 mrem							

Answer:
<p>Note: Only the BOLDED information is required to answer the question. The remaining information is the justification for the appropriate response.</p> <p>One consideration is a dose extension is required to exceed 1000 mrem. SO #4 cannot perform either outage job since a dose extension is required. Each of the other Station Operators can be assigned to the outage work.</p> <p>Another consideration is collective dose for the individuals. Each department should levelize dose accumulated by each individual performing similar job functions to maintain individual dose ALARA. To comply with this directive, the two Station Operators with the lowest accumulated TEDE (SO #1 and SO #2) should be assigned the outage jobs since they have the highest projected dose.</p> <p>SO #1 should perform Outage Job #1 (projected TEDE = 650 mrem) because of the lowest accumulated TEDE of SO #1 and SO #2.</p> <p>SO#2 should perform Outage Job #2 (projected TEDE = 650 mrem).</p> <p>SO# 3 should perform the shift duties with the highest projected dose. SO #3 should perform Shift Duties #2 (projected TEDE = = 600 mrem).</p> <p>SO #4 should be assigned the job with the lowest dose. SO #4 should perform Shift Duties #1 (projected TEDE = = 650 mrem).</p> <p>With these assignments NO doses extensions are required and collective dose is equalized amongst the Station Operators.</p>

Technical Reference(s):
9.ALARA.1: 6.2.1.1, 5.7.1

K/A #:	Importance:
2.3.1	3.0
2.3.4	3.1

Comments:

Cooper Nuclear Station Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 1
Examination Level	SRO
Administrative Topic	A.3
Subject Description:	Radiation Protection
Question Number:	2

Question:

During an emergency, it is necessary to enter a Very High Radiation Area to stop a discharge to prevent large release to the general public. The general area dose rate is 156 Rem/hr and time in the area for one worker to stop the discharge is estimated at 10 minutes.

What emergency exposure control requirements must be met for this individual before entering the area to stop the effluent discharge?

Answer:

Note: Only the **BOLDED** information is required to answer the question. The other information supports the correct answer and justification for the response.

$(156\text{r/hr}) \times (1\text{ hr}/60\text{ min}) \times (10\text{ min}) = 26\text{ Rem}$ exposure to the worker. Exposure above 25 Rem is permitted to save a life or to protect the general public. For emergency exposures above 25 Rem, several requirements must be met.

Be a volunteer.
NOT a declared pregnant worker.
NO previous emergency exposure.
Aware of the hazards associated with the emergency exposure.

Technical Reference(s):
 5.7.12; Section 2.6, Attachment 1

K/A #:	Importance:
2.3.1	3.0
2.3.10	3.3

Comments:

Cooper Nuclear Station Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 1
Examination Level	SRO
Administrative Topic	A.4
Subject Description:	EAL Classification / Communications
Question Number:	1

Question:
<p>The plant is at 100% power:</p> <ul style="list-style-type: none"> • At 08:00 on June 1, HPCI is declared inoperable • At 08:00 on June 5, one (1) ADS valve is declared inoperable • At 08:55 on June 5, Reactor Recirc flow is reduced <p>Determine the if a 1-hour or 4-hour report is required and the LATEST time to complete it.</p>

Answer:
<p>4-hour report by 12:55.</p> <p>Justification: Per 2.0.5, Attachment 2, a 4-hour report is required when a shutdown is required (initiated) by TS. However, the reporting requirement (time to report) the event does not start until initiation of the plant shutdown meaning that reactor power is reduced / negative reactivity is inserted as a direct result of the requirement. Therefore, the NRC must be notified within 4 hours of lowering recirc flow (08:55) which is 12:55.</p> <p>Per 2.0.5, step 2.1.3.1, for events deemed reportable the reporting time is keyed to the occurrence of the event or condition.</p>

Technical Reference(s):
2.0.5, step 2.1.3.1 and attachment 2 NUREG 1022 Rev. 2

K/A #:	Importance:
2.4.30	3.6

Comments:

Cooper Nuclear Station Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 1
Examination Level	SRO
Administrative Topic	A.4
Subject Description:	EAL Classification / Communications
Question Number:	1

Question:
<p>The plant is at 100% power:</p> <ul style="list-style-type: none"> • At 08:00 on June 1, HPCI is declared inoperable • At 08:00 on June 5, one (1) ADS valve is declared inoperable • At 08:55 on June 5, Reactor Recirc flow is reduced <p>Determine the if a 1-hour or 4-hour report is required and the LATEST time to complete it.</p>

Answer:
<p>4-hour report by 12:55.</p> <p>Justification: Per 2.0.5, Attachment 2, a 4-hour report is required when a shutdown is required (initiated) by TS. However, the reporting requirement (time to report) the event does not start until initiation of the plant shutdown meaning that reactor power is reduced / negative reactivity is inserted as a direct result of the requirement. Therefore, the NRC must be notified within 4 hours of lowering recirc flow (08:55) which is 12:55.</p> <p>Per 2.0.5, step 2.1.3.1, for events deemed reportable the reporting time is keyed to the occurrence of the event or condition.</p>

Technical Reference(s):
2.0.5, step 2.1.3.1 and attachment 2 NUREG 1022 Rev. 2

K/A #:	Importance:
2.4.30	3.6

Comments:

Cooper Nuclear Station Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 1
Examination Level	SRO
Administrative Topic	A.4
Subject Description:	EAL Classification / Communications
Question Number:	2

Question:
 Based on the current plant conditions for the scenario you just completed, determine the highest emergency classification.

Answer:
 Refer to the scenario for the emergency classification and justification.

Technical Reference(s):
 5.7.1

K/A #:	Importance:
2.4.40	4.0
2.4.41	4.1

Comments:

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 226002O0101; 230002O0101

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Trainee: _____

Examiner: _____

Score: _____ Pass _____ Fail Examiner Signature: _____
_____ Date: _____

Performed faulted/non-faulted: **Faulted**

Additional Program Information:

1. Appropriate Performance Locations: SIM
2. Appropriate Trainee Levels: RO/SRO
3. Evaluation Method: Simulate
4. Performance Time: 15 minutes
5. NRC K/A 264000 A4.04 (3.7/3.7)

Directions to Examiner:

1. This JPM evaluates the trainee's ability to start and load the diesel generator.

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 226002O0101; 230002O0101

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2. If this JPM is to be performed on the Simulator, only the cues preceded by "#" should be given.
3. Brief the trainee IAW NTP 5.4, On-the-Job-Training and Task Performance Evaluation, (Attachments 1, 2, and 3).
4. Observe the trainee during performance of the JPM for proper performance IAW NTP 5.4 and the procedure.
5. All blanks must be filled out with either initials or an "NP" for "not performed," and an explanation may also be written in the space if desired by the examiner.
6. Give the trainee his copy of the Directions to the Trainee (Attachment 2) when ready to start the JPM.
7. Brief the trainee, place the simulator in run, and tell the trainee to begin.

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 226002O0101; 230002O0101

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Directions to Trainee:

When I tell you to begin, you are to start and load the diesel generator using the FAST MODE. Before you start, I will state the general plant conditions, the Initiating Cues and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated them to start and load the diesel generator.

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General Conditions:

1. The #1 Diesel Generator is in a Standby lineup and all prerequisites are met for diesel generator operation.

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 226002O0101; 230002O0101

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2. The Turbine Building Station Operator has performed local preparations for running the #1 Diesel Generator and reports that he has completed steps 5.1 through 5.8.6.

General References:

1. Procedure 2.2.20
2. Procedure 2.2.20.1

General Tools and Equipment:

None.

Special Conditions, References, Tools, Equipment:

1. Simulator Setup: See Attachment 1.
2. Critical checks denoted by "*."
3. Simulator cues denoted by "#."
4. Faulted steps denoted by "◆."

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 226002O0101; 230002O0101

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Task Standards:

1. Accurately locate, identify, operate and/or manipulate all component controls required to be utilized to start and load the #1 diesel generator.
2. Accurately locate and identify all instrumentation required to be monitored to start and load the #1 diesel generator.
3. Correctly interpret instrument and system responses and their interrelationships when starting and loading the #1 diesel generator.
4. Satisfactory completion of TPE requires a minimum of:
 - a. 100% of critical elements, as defined in the JPM, successfully completed without error.
 - b. 100% of core work practices (e.g., safety, housekeeping, control of tools, material control, proper use of tools, procedure steps performed in sequence and as written) evaluated as satisfactory (SAT) or not applicable (N/A).

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 226002O0101; 230002O0101

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Initiating Cue(s):

You are the BOP operator and the CRS has directed you to start the #1 Diesel Generator and apply a 3200 KW load using SOP 2.2.20.1. Steps 5.1 through 5.8.6 have been completed. You are to inform the CRS when a 3200 KW load has been applied to #1 DG. A SO is available at DG1 Room.

NOTE: Tell the trainee to begin and **NOT** to make any plant announcements.

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 226002O0101; 230002O0101

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Performance Checklist	Standards	Initials
1. Start DIESEL GEN 1.	The operator places DG-1 STOP/START switch to START CUE: Stop light turns off	_____*
2. Adjust Voltage.	Using DIESEL GEN 1 VOLTAGE REGULATOR, adjust voltage to ~4200V CUE: Voltage is ~4200 Volts	_____
3. Records.	Record Date/Time DG1 started on Attachment 3 CUE: A second operator has recorded the required information.	_____
4. Local Checks.	Coordinate with the Station Operator and check the following before loading (all items in step 5.13) #CUE: Items 5.13.1 through 5.13.8 have been satisfactorily completed. Five minutes have elapsed.	_____
5. Synch Switch.	Place SYNCH SWITCH EG1 OR 1FE TO EG1 CUE: Switch is in EG1	_____*

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 226002O0101; 230002O0101

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	Standards	Initials
6.	Adjust DG1 speed so SYNCHROSCOPE is rotating slowly in clockwise (fast) direction. The operator adjusts DG1 speed so SYNCHROSCOPE is rotating slowly in clockwise (fast) direction. CUE: The SYNCHROSCOPE is rotating slowly in the FAST direction.	_____*
7.	Adjust DG-1 VOLTAGE REGULATOR. The operator adjusts DG-1 VOLTAGE REGULATOR switch so DG-1 VOLTS are slightly higher than BUS 1F VOLTS. CUE: Higher VOLTS obtained.	_____*
8.	CLOSE EG1. The operator CLOSES DIESEL GEN 1 BKR, EG1 when SYNCHROSCOPE at 11 o'clock. CUE: BKR EG1 indicated CLOSED as SYNCHROSCOPE passed 11 o'clock and Synchroscope indicates 12:00.	_____*
9.	Adjust kW & VARS. The operator raises load to 1000 kW (\pm 50kW) using DIESEL GEN 1 GOVERNOR switch and 500 kVAR (\pm 50 kVAR) using DIESEL GEN 1 VOLTAGE REGULATOR switch. CUE: The DG load is 1000 kW and 500 kVAR.	_____*

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 226002O0101; 230002O0101

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Standards

Initials

NOTE: Critical step at steady state.

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 226002O0101; 230002O0101

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Performance Checklist	Standards	Initials
10. Raises load to 3200 kW	RO raises load at a rate £ 500 (\pm 50) kW averaged over any one minute until 3200 (\pm 100) kW is reached CUE: DG load is XX (500 kW increments, 1-minute wait). NOTE: Critical step at steady state.	_____
When DG1 load is 900 KW a TD trigger will activate the DIESEL GEN 1 TROUBLE alarm.		
◆ 1. Respond to DIESEL GEN 1 TROUBLE alarm.	The operator presses either OPERATOR NOTIFICATION button on Panel C. CUE: Call as SO at DG1 in response to blue flashing light.	_____*
◆ 2. Direct Station Operator to report cause of DIESEL GEN 1 TROUBLE alarm.	The operator directs the Station Operator to report the cause of the DIESEL GEN 1 TROUBLE alarm. CUE: As the SO, acknowledge request to report DG1 Control Panel alarms. CUE: As the SO, report LUBE OIL LOW LEVEL alarm at DG1 Control Panel. CUE: As the CRS, direct DG1 shutdown per SOP 2.2.20.1.	_____*

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 226002O0101; 230002O0101

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JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 226002O0101; 230002O0101

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Performance Checklist	Standards	Initials
<p>◆ 3. Adjust DG1 kW and KVARs.</p>	<p>The operator lowers load to 1000 kW (\pm 50 kW) using DIESEL GEN 1 GOVERNOR switch and maintains 500 kVAR (\pm 50 kVAR) using DIESEL GEN 1 VOLTAGE REGULATOR switch.</p> <p>CUE: The DG load is 1000 kW and 500 kVAR.</p> <p>CUE: When kW and Kvar at target, inform trainee 15 minutes have elapsed.</p> <p>NOTE: Critical step at steady state.</p>	<p>_____*</p>
<p>◆ 4. Adjust DG1 kW and KVARs.</p>	<p>The operator lowers load to 400 kW (\pm 50 kW) using DIESEL GEN 1 GOVERNOR switch and lowers kVAR to 0 (\pm 50 kVAR) using DIESEL GEN 1 VOLTAGE REGULATOR switch.</p> <p>CUE: The DG load is 400 kW and 0 kVAR.</p> <p>NOTE: Critical step at steady state.</p>	<p>_____*</p>

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 226002O0101; 230002O0101

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Performance Checklist	Standards	Initials
◆ 5. OPEN EG1.	The operator OPENS DIESEL GEN 1 BKR, EG1. CUE: BKR EG1 indicates OPEN.	_____*
◆ 6. Place DROOP PARALLEL switch to ISOCH.	Directs AO to place DROOP PARALLEL switch to ISOCH. CUE: Acknowledge request and report DROOP PARALLEL switch in ISOCH.	_____*
◆ 7. Adjust DG1 speed.	The operator lowers DG1 speed to 600 rpm (± 50 rpm) using DIESEL GEN 1 GOVERNOR switch. CUE: The DG speed is 600 rpm. NOTE: Critical step at steady state.	_____*
◆ 8. Adjust DG1 voltage.	The operator adjusts DG1 voltage to 4200 VAC (± 50 VAC) using DIESEL GEN 1 VOLTAGE REGULATOR switch. CUE: The DG voltage is 4200 VAC. NOTE: Critical step at steady state.	_____*

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 226002O0101; 230002O0101

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Performance Checklist	Standards	Initials
◆ 9. Stop DG1.	<p>The operator PLACES and HOLDS DIESEL GEN 1 STOP/START switch to STOP for 1 to 2 seconds (-0 to +5 seconds).</p> <p>CUE: STOP light turns on.</p> <p>CUE: If asked as CRS, mechanical testing of DG1 is not in progress. Continue with DG1 shutdown.</p> <p>CUE: If asked inform the RO that the SO will preform steps 6.9 through 6.13 of 2.2.20.1</p>	_____*
◆ 10. Inform the CRS that DG1 is stopped.	<p>The operator informs the CRS that DG1 is stopped.</p> <p>#CUE: The CRS acknowledges the report. This JPM is now complete.</p>	_____

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 226002O0101; 230002O0101

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SIMULATOR SET-UP

A. Materials Required

None

B. Initialize the Simulator in any IC and place in RUN.

Batch File Name - none.

C. Change the simulator conditions as follows:

1. Triggers

E1 ZAODGW1WM1 DG >900 KW

2. Malfunctions

None

3. Remotes

<u>Number</u>	<u>Title</u>	<u>Trigger</u>	<u>Value</u>	<u>Ramp</u>
DG03	#1 DG Parallel / Isoch Switch	A	Parallel	N/A

4. Overrides

RA: MUX01C002, Ann C-1/E-3 E1 C1E3 1:00

5. Panel Setup

Perform steps 5.1 through 5.8.6 (including the Droop Parallel switch in PARALLEL) of 2.2.20.1.

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 226002O0101; 230002O0101

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Note: If this JPM is to be performed more than once, snap the simulator into an IC after the panel setup is complete.

ATTACHMENT 2

Directions to Trainee:

When I tell you to begin, you are to start and load the diesel generator using the FAST MODE. Before you start, I will state the general plant conditions, the Initiating Cues and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated them to start and load the diesel generator.

General Conditions:

1. The #1 Diesel Generator is in a Standby lineup and all prerequisites are met for diesel generator operation.
2. The Turbine Building Station Operator has performed local preparations for running the #1 Diesel Generator and reports that steps 5.1 through 5.8.6 have been completed.

Initiating Cues:

You are the BOP operator and the CRS has directed you to start the #1 Diesel Generator and apply a 3200 KW load using SOP 2.2.20.1. Steps 5.1 through 5.8.6 have been completed. You are to inform the CRS when a 3200 KW load has been applied to #1 DG. A SO is available at DG1 Room. For the purpose of this examination do **NOT** make any plant announcements

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 259043P0401

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Task Title: RESPOND TO ONE RFP IN FW TRACK AND HOLD
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Trainee: _____ Examiner:

Pass _____ Fail _____ Examiner Signature: _____ Date:

Performed faulted/non-faulted: **Faulted**

Additional Program Information:

1. Appropriate Performance Locations: CR/SIM
2. Appropriate Trainee Levels: RO/SRO
3. Evaluation Method: _____Perform _____Simulate
4. Performance Time: 10 minutes
5. NRC K/A 259002A4.09, 3.4/3.1

Directions to Examiner:

4. This JPM evaluates the trainee's ability to respond to one RFP in Track and Hold.
5. If this JPM is performed on the Simulator, only the cues preceded by "#" should be given.
6. The examiner is to obtain the "JPM Comment Form" (Attachment C of ODG 206) prior to administering the JPM.
7. Observe the trainee during performance of the JPM for proper use of self-checking methods.
8. All blanks must be filled out with either examiner's initials or an "NP" for "not performed," and an explanation may also be written in the space if desired by the examiner.
9. Give the trainee his copy of the Directions to the Trainee (Attachment 2) when the trainee is ready to start the JPM.
10. Brief the trainee, place the Simulator in run, and tell the trainee to begin.

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 259043P0401

=====
Task Title: RESPOND TO ONE RFP IN FW TRACK AND HOLD
=====

Directions to Trainee:

When I tell you to begin, you are to perform the required actions as the Balance-Of-Plant Operator to respond to a RFP in FW Track and Hold. Before you start, I will state the general plant conditions, initiating cues, and answer any questions you may have. During performance, state the actions you are taking, e.g., repositioning control and observing instrumentation.

When simulating, physically point to any meters, gauges, recorders, and controls you would be using. State the position of controls as you would have manipulated them to respond to a RFP in FW Track and Hold.

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General Conditions:

11. The plant is operating at power, steady-state.
12. A failure of feedwater controller RFC-MA-84A has occurred, causing the "A" Reactor Feed Pump to lock up and shift to Track and Hold operation.
13. No operator actions have yet been taken in response to this condition.
14. I & C has replaced a faulty connector and the controller can be returned to service.
15. An SO is at the Lovejoy Monitor.

General References:

1. Procedure 2.4RXLVL, RPV Water Level Control Trouble
2. Procedure 2.2.28.1, Feedwater System Operations
3. Procedure 2.3_A.1/E-6

General Tools and Equipment:

None

Special Conditions, References, Tools, Equipment:

1. Simulator Setup: See Attachment 1.

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 259043P0401

=====
Task Title: RESPOND TO ONE RFP IN FW TRACK AND HOLD
=====

2. Critical checks denoted by "*"."
3. Simulator cues denoted by "#."
4. Faulted steps denoted by "⊕."

Task Standards:

1. Accurately locate, identify, operate and/or manipulate all component controls required to be utilized to respond to RFP in Track and Hold.
2. Accurately locate and identify all instrumentation required to be monitored to respond to RFP in Track and Hold.
3. Correctly interpret instrument and system responses and their interrelationships when responding to RFP in Track and Hold.
4. Satisfactory completion of TPE requires a minimum of:
 - a. 100% of critical elements, as defined in the JPM, successfully completed without error and
 - b. 100% of core work practices (e.g., safety, housekeeping, control of tools, material control, proper use of tools, procedure steps performed in sequence and as written) and management expectations for TPE evaluated as satisfactory (SAT) or not applicable (N/A).

Initiating Cue(s):

The Control Room Supervisor orders you to respond to "A" Reactor Feed Pump in Track and Hold in accordance with the applicable procedure(s).

NOTE: Place the Simulator in RUN and tell the trainee to begin.

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 259043P0401

=====
Task Title: RESPOND TO ONE RFP IN FW TRACK AND HOLD
 =====

Performance Checklist	Standards	Initials
1. Enter procedure 2.4RXLVL.	Locate and retrieve procedure 2.4RXLVL from the procedure rack. NOTE: Entry into 2.4RXLVL is made based upon alarm response procedure guidance.	_____
2. Enter Attachment 3 of procedure 2.4RXLVL.	Recognizes from the Subsequent Actions of 2.4RXLVL that Attachment 3 must be entered.	_____
3. Ensure "B" RFP is controlling RPV level.	Monitors Reactor Water level to determine if "B" RFP is maintaining set level. CUE: RPV water level is steady at 35" on the narrow range.	_____
4. Contact Station operator to determine actual alarm at RFP A Signal Processor Cabinet.	Contacts Station Operator to determine actual alarm. #CUE: As Station Operator LOSS OF FEEDWATER DEMAND SIGNAL is indicated locally.	_____

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 259043P0401

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Task Title: RESPOND TO ONE RFP IN FW TRACK AND HOLD
 =====

Performance Checklist	Standards	Initials
5. Ensure RFC-MA-84A is in MAN.	(If not already done) Place RFC-MA-84A function selector knob in MAN. CUE: The selector knob for RFC-MA-84A is lined up with MAN.	_____*
6. Slowly adjust RFC-LC-83 and check RFC-MA-84A deviation meter responds.	Adjust RFC-LC-83 and observe response on RFC-MA-84A deviation meter. CUE: As output signal from RFC-LC-83 is adjusted and the deviation meter for RFC-MA-84B is observed, the red pointer in the uppermost indicator on 84B is moving. CUE: If asked long term operation is not anticipated.	_____
7. Adjust RFC-MA-84A until FW DEMAND is # 4% higher than FW HOLD.	Raise on manual output signal from RFC-MA-84A until FW DEMAND window for RFPT A STARTUP STATION reads # $\leq 4\%$ above the value in the FW HOLD window. CUE: When it is clear that the correct displays are being monitored, FW DEMAND is at a value $\leq 4\%$ higher than the indicated value for FW HOLD.	_____*

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 259043P0401

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Task Title: RESPOND TO ONE RFP IN FW TRACK AND HOLD
 =====

Performance Checklist	Standards	Initials
8. Reset the FW HOLD condition on RFPT A.	Press FW HOLD RESET button (for RFPT A). CUE: Button is depressed.	_____ *
9. Verify FW HOLD LED off.	Check the amber FW HOLD LED and verify the light is off. CUE: Amber light above FW HOLD display window is OFF.	_____
10. Verify A-1/F-6, RFP TURBINE A TRACK & HOLD, clear.	Verify A-1/F-6, RFP TURBINE A TRACK & HOLD, clear. Reset alarm. CUE: A-1/F-6 is clear.	_____
<p>NOTE: The following step should be NOT applicable as the other RFP is maintaining reactor water level and no adjustment to the Startup Demand is required.</p>		
11. Raise STARTUP DEMAND to maximum with MANUAL STARTUP SPEED CONTROL.	Raise STARTUP DEMAND to maximum with MANUAL STARTUP SPEED CONTROL. CUE: STARTUP DEMAND has been raised to maximum and the indication is no longer changing.	_____
12. Ensure the RFP is controlling RPV water level.	Monitor RPV water level. Ensure that B RFP has control of it. CUE: RPV water level is under the control of the B RFP.	_____

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 259043P0401

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Task Title: RESPOND TO ONE RFP IN FW TRACK AND HOLD
 =====

Performance Checklist	Standards	Initials
NOTE: After swapping the controllers to balance, insert the Dual Power Supply Failure. A-1/E-6, RFP TURBINE A CONTROL TROUBLE, alarms.		
⊕1. Respond to A-1/E-1 alarm.	Reference the alarm response procedure for A-1/E-1 and direct a Station Operator to report cause of alarm.	_____
	CUE: A-1/E-6, RFP TURBINE A CONTROL TROUBLE, alarms.	
	CUE: As Station Operator acknowledge the request to report the cause of the alarm.	
	CUE: As the Station Operator report the DUAL POWER SUPPLY FAILURE AT CONTROLLER is alarming at the Signal Processor Cabinet.	
⊕2. Enter Attachment 6 of 2.4RXLVL.	References Attachment 6 of 2.4RXLVL.	_____
⊕3. Ensure core flow is below 40X10 ⁶ lb/hr.	Checks core flow below 40X10 ⁶ lb/hr.	_____
	CUE: Core flow is 39X10 ⁶ lb/hr.	

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 259043P0401

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Task Title: RESPOND TO ONE RFP IN FW TRACK AND HOLD
 =====

Performance Checklist	Standards	Initials
⊕4. Trip RFP "A."	Press RFP "A" TRIP push button and observe RFP "A" tripped. CUE: RFP "A" TRIP push button is pressed. CUE: RFP "A" is tripped.	_____ *
⊕5. Inform CRS of status.	Informs CRS that the "A" RFP has been tripped because of the loss of power. The "B" RFP is controlling RPV level. CUE: Respond to the report as CRS. This JPM is complete.	_____

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 259043P0401

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Task Title: RESPOND TO ONE RFP IN FW TRACK AND HOLD
 =====

ATTACHMENT 1

SIMULATOR SET-UP

A. Materials Required

None

B. Initialize the Simulator in any power IC with both Reactor Feed pumps in service.

Batch File Name - none.

C. Change the Simulator conditions as follows:

1. Triggers

E2 E1 ZDIRFCMA84A

2. Malfunctions

<u>Number</u>	<u>Title</u>	<u>Trigger</u>	<u>ID</u>	<u>Severity</u>	<u>Ramp</u>	<u>Initial</u>
FW05A	A Reactor Feedwater Pump Individual Controller Failure	E2	0	0	0	As Is
FW23A	RFP Lovejoy Controller Failure RFP 1A		0	0	0	10

3. Remotes

None

4. Overrides

RA: MUX15C060, Ann A-1/E-6 E2 30 sec delay

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 259043P0401

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Task Title: RESPOND TO ONE RFP IN FW TRACK AND HOLD
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ATTACHMENT 1 (continued)

5. Panel Setup
 - a. Place the Simulator in RUN.
 - b. Load Bat file JPM 1 & 2
 - c. Acknowledge annunciators.
 - a. Verify the Feedwater controller malfunction is deleted.
 - b. Lower Recirculation Pump speed to 35%.
 - c. FREEZE the Simulator.

Note: If this JPM is to be performed more than once, take a SNAPSHOT or store in a spare IC after the panel setup is complete.

ATTACHMENT 2

Directions to Trainee:

When I tell you to begin, you are to perform the required actions as the Balance-Of-Plant Operator to respond to a RFP in FW Track and Hold. Before you start, I will state the general plant conditions, initiating cues, and answer any questions you may have. During performance, state the actions you are taking, e.g., repositioning control and observing instrumentation.

When simulating, physically point to any meters, gauges, recorders, and controls you would be using. State the position of controls as you would have manipulated them to respond to a RFP in FW Track and Hold.

General Conditions:

1. The plant is operating at power, steady-state.
2. A failure of feedwater controller RFC-MA-84A has occurred, causing "A" Reactor Feed Pump to lock up and shift to Track and Hold operation.
3. No operator actions have yet been taken in response to this condition.
4. I & C has replaced a faulty connector and the controller can be returned to service.
5. An SO is at the Lovejoy Monitor.

Initiating Cue(s):

The Control Room Supervisor orders you to respond to "A" Reactor Feed Pump in Track and Hold in accordance with the applicable procedure(s).

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 200076

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Task Title: ALTERNATE CONTROL ROD INSERTION - INDIVIDUAL ROD SCRAM SWITCHES

Trainee: _____ Examiner: _____

Score: _____ Pass _____ Fail Examiner Signature: _____ Date: _____

Performed faulted/non-faulted: **Non-Faulted**

Additional Program Information:

1. Appropriate Performance Locations: SIM
2. Appropriate Trainee Levels: RO/SRO
3. Evaluation Method: _____ Perform _____ Simulate
4. Performance Time: 15 minutes
5. NRC K/A 201001 A2.04 (3.8/3.9)

Directions to Examiner:

1. This JPM evaluates the trainee's ability to insert control rods during a failure to scram condition using the individual rod scram switches.
2. If this JPM is to be performed on the Simulator, only the cues preceded by "#" should be given.
3. Brief the trainee IAW NTP 5.4, On-the-Job-Training and Task Performance Evaluation, (Attachments 1, 2, and 3).
4. Observe the trainee during performance of the JPM for proper performance IAW NTP 5.4 and the procedure.
5. All blanks must be filled out with either initials or an "NP" for "not performed," and an explanation may also be written in the space if desired by the examiner.
6. Give the trainee his copy of the Directions to the Trainee (Attachment 2) when ready to start the JPM.
7. Brief the trainee, place the simulator in run, and tell the trainee to begin.

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 200076

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Task Title: ALTERNATE CONTROL ROD INSERTION - INDIVIDUAL ROD SCRAM SWITCHES

Directions to Trainee:

When I tell you to begin, you are to insert control rods 26-27, 30-23, and 22-23 using the individual rod scram switches. Before you start, I will state the general plant conditions, the Initiating Cues and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated them to start and load the diesel generator.

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General Conditions:

6. The plant scrammed and 3 control rods (control rods 26-27, 30-23, and 22-23) failed to insert.
7. Attempts to drain the SDV and scram the reactor manually resulted in NO inward rod motion.
8. The last step performed was 5.8.3, Attachment 1, AR-16.
9. PTMs 31, 32, 33, 34, 61, and 62 are IN.

General References:

1. Procedure 5.8.3, Section 4
2. Procedure 5.8.3, Attachment 1 (Path D)

General Tools and Equipment:

None.

Special Conditions, References, Tools, Equipment:

1. Simulator Setup: See Attachment 1.
2. Critical checks denoted by "*."
3. Simulator cues denoted by "#."
4. Faulted steps denoted by "⊕."

Task Standards:

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 200076

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Task Title: ALTERNATE CONTROL ROD INSERTION - INDIVIDUAL ROD SCRAM SWITCHES

1. Accurately locate, identify, operate and/or manipulate all component controls required to be utilized to insert control rods using the individual rod scram switches.
2. Accurately locate and identify all instrumentation required to be monitored to insert control rods using the individual rod scram switches.
3. Correctly interpret instrument and system responses and their interrelationships when inserting control rods using the individual rod scram switches.
4. Satisfactory completion of TPE requires a minimum of:
 - a. 100% of critical elements, as defined in the JPM, successfully completed without error.
 - b. 100% of core work practices (e.g., safety, housekeeping, control of tools, material control, proper use of tools, procedure steps performed in sequence and as written) evaluated as satisfactory (SAT) or not applicable (N/A).

Initiating Cue(s):

You are the RO and the CRS has directed you to insert control rods 26-27, 30-23, and 22-23 using the individual rod scram switches per 5.8.3 Attachment 1 path D and Section 4. You are to inform the CRS when all control rods are fully inserted.

NOTE: Tell the trainee to begin.

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 200076

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Task Title: ALTERNATE CONTROL ROD INSERTION - INDIVIDUAL ROD SCRAM SWITCHES

Performance Checklist	Standards	Initials
1. Isolate SDV.	<p>The operator places SDV VENT AND DRAIN switch to ISOL.</p> <p>CUE: Switch is positioned to ISOL.</p>	_____*
2. Bypass SDV high level.	<p>The operator places SDV HIGH WATER BYPASS switch to BYPASS.</p> <p>CUE: Switch is positioned to BYPASS.</p>	_____*
3. Reset scram.	<p>The operator places REACTOR SCRAM RESET switch to Group 1 and 4, Group 2 and 3, then back to NORM and CHECKS SCRAM INDICATIONS GROUP A and GROUP B lights are ON.</p> <p>CUE: Switch placed to Group 1 and 4 and Group 2 and 3.</p> <p>CUE: SCRAM INDICATIONS GROUP A and GROUP B lights are on.</p>	_____*
4. Wait for all scram valves to close.	<p>The operator checks all scram valves on full core display are CLOSED.</p> <p>#CUE: Blue scram lights for all scram valves are off.</p>	_____*

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 200076

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Task Title: ALTERNATE CONTROL ROD INSERTION - INDIVIDUAL ROD SCRAM SWITCHES

Performance Checklist	Standards	Initials
5. Drain SDV.	<p>The operator places SDV VENT AND DRAIN switch to NORM.</p> <p>CUE: Switch is positioned to NORM.</p> <p>CUE: SDV VENT AND DRAIN VALVES are OPEN. Red lights on. Green lights off.</p>	_____*
6. Wait for SDV to drain.	<p>The operator observes SDV HI LEVEL alarm clear <u>or</u> waits 3 minutes.</p> <p>CUE: SDV HIGH LEVEL alarm is clear.</p>	_____*
7. Isolate SDV.	<p>The operator places SDV VENT AND DRAIN switch to ISOL.</p> <p>CUE: Switch is positioned to ISOL.</p>	_____*
8. Recharge HCUs.	<p>The operator directs a SO to OPEN CRD-29 to recharge HCUs.</p> <p>CUE: As the SO acknowledge the request to OPEN CRD-29.</p> <p>CUE: As the SO acknowledge report CRD-29 is OPEN.</p> <p>CUE: HCUs are recharged.</p>	_____*

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 200076

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Task Title: ALTERNATE CONTROL ROD INSERTION - INDIVIDUAL ROD SCRAM SWITCHES

Performance Checklist	Standards	Initials
<p>NOTE: The order that control rods 26-27, 30-23, and 22-23 are inserted is NOT critical. The critical element is the control rods are fully inserted. If the order in section 4 is NOT followed, this is a competency concern related to procedure compliance.</p>		
<p>9. Individually scram control rod 26-27.</p>	<p>The operator places ROD SCRAM SWITCH for control rod 26-27 to SCRAM for 10 seconds then returns switch to NORMAL <u>AND</u> observe control rod inserted.</p> <p>CUE: ROD SCRAM SWITCH for selected control rod is positioned to SCRAM/NORMAL as actions are taken.</p> <p>CUE: Selected control rod is inserted.</p>	<p>_____*</p>
<p>10. Individually scram control rod 30-23.</p>	<p>The operator places ROD SCRAM SWITCH for control rod 30-23 to SCRAM for 10 seconds then returns switch to NORMAL <u>AND</u> observe control rod inserted.</p> <p>CUE: ROD SCRAM SWITCH for selected control rod is positioned to SCRAM/NORMAL as actions are taken.</p> <p>CUE: Selected control rod is inserted.</p>	<p>_____*</p>

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 200076

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Task Title: ALTERNATE CONTROL ROD INSERTION - INDIVIDUAL ROD SCRAM SWITCHES

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|-----|---------------------------------------|---|--------|
| 11. | Individually scram control rod 22-23. | The operator places ROD SCRAM SWITCH for control rod 22-23 to SCRAM for 10 seconds then returns switch to NORMAL <u>AND</u> observe control rod inserted. | _____* |
| | | CUE: ROD SCRAM SWITCH for selected control rod is positioned to SCRAM/NORMAL as actions are taken. | |
| | | CUE: Selected control rod is inserted. | |
-
- | | | | |
|-----|--|---|-------|
| 12. | Inform the CRS that all control rods are fully inserted. | The operator informs the CRS all control rods are fully inserted. | _____ |
| | | #CUE: The CRS acknowledges the report. This JPM is now complete. | |
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JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 200076

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Task Title: ALTERNATE CONTROL ROD INSERTION - INDIVIDUAL ROD SCRAM SWITCHES

SIMULATOR SET-UP

A. Materials Required

None

B. Initialize the Simulator in any IC and place in RUN.

Batch File Name - JPM 3456

C. Change the simulator conditions as follows:

1. Triggers

Trigger are set up for conditional delete of the stuck rods when the scram toggle switches are moved to the TEST position.

2. Malfunctions

None

3. Remotes

<u>Number</u>	<u>Title</u>	<u>Trigger</u>	<u>Value</u>	<u>Ramp</u>
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4. Overrides

ZDIRPSSWS7S19
ZDIRPSSWS8S20
ZDIRPSSWS7S21

5. Panel Setup

Verify TPMs 31, 32, 33, 34, 61, and 62 are inserted prior to performing this JPM.

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 200076

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Task Title: ALTERNATE CONTROL ROD INSERTION - INDIVIDUAL ROD SCRAM SWITCHES

Note: If this JPM is to be performed more than once, snap the simulator into an IC after the panel setup is complete.

ATTACHMENT 2

Directions to Trainee:

When I tell you to begin, you are to insert control rods 26-27, 30-23, and 22-23 using the individual rod scram switches. Before you start, I will state the general plant conditions, the Initiating Cues and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated them to start and load the diesel generator.

General Conditions:

6. The plant scrammed and 3 control rods (control rods 26-27, 30-23, and 22-23) failed to insert.
7. Attempts to drain the SDV and scram the reactor manually resulted in NO inward rod motion.
8. The last step performed was 5.8.3, Attachment 1, AR-16.
9. PTMs in.....

Initiating Cues:

You are the RO and the CRS has directed you to insert control rods 26-27, 30-23, and 22-23 using the individual rod scram switches per 5.8.3 Attachment 1 path D and Section 4. You are to inform the CRS when all control rods are fully inserted.

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 206005

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Task Title: MANUALLY INITIATE HPCI INJECTION (Hard Card)

Trainee: _____ Examiner:

Pass: _____ Fail: _____ Examiner Signature: _____ Date:

Performed faulted/non-faulted: **Faulted**

Additional Program Information:

1. Appropriate Performance Locations: CR/SIM
2. Appropriate Trainee level: RO/SRO
3. Evaluation Method: Perform _____ Simulate _____
4. Performance Time: 8 minutes
5. NRC K/As 206000 A4.05 (4.4/4.4) and A2.14 (3.3/3.4)

Directions to Examiner:

NOTE: THIS IS A **FAULTED** JPM. THE FLOW CONTROLLER WILL FAIL TO OPERATE IN AUTOMATIC AND MUST BE PLACED IN MANUAL.

6. This JPM evaluates the trainee's ability to perform the injection mode of HPCI per the guidance of procedure 2.2.33.1, High Pressure Coolant Injection System Operations.
7. The examiner is to obtain the "JPM Comment Form" Attachment C of ODG 206) prior to administering the JPM.
8. If this JPM is performed on the Simulator, only the cues preceded by "#" should be given.
9. Observe the trainee during performance of the JPM for proper performance IAW NTP 5.4 and the procedure.
10. Observe the trainee during performance of the JPM for proper use of self-checking methods.
11. All blanks must be filled out with either initials or an "NP" for "not performed"; an explanation may also be written in the space, if desired, by the examiner.
12. Brief the trainee, place the Simulator in RUN, and tell the trainee to begin.

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 206005

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Task Title: MANUALLY INITIATE HPCI INJECTION (Hard Card)

Directions to Trainee:

When I tell you to begin, you are to operate HPCI in the injection mode using the hard card. Before you start, I will state the general plant conditions, the Initiating Cues, and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated them in order to place HPCI in the pressure control mode. During performance, state the actions you are taking (e.g.: repositioning controls and observing instrumentation).

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General Conditions:

1. A LOCA is in progress.
2. HPCI has failed to initiate

General References:

1. Procedure 2.2.33.1, High Pressure Coolant Injection System Operation.

General Tools and Equipment:

1. None

Special Conditions, References, Tools, Equipment:

1. Simulator Setup: See Attachment 1.
2. Critical steps denoted by "*" ."
3. Simulator cues denoted by "#." ."
4. Faulted steps denoted by "⊕ ." ."

Task Standards:

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 206005

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Task Title: MANUALLY INITIATE HPCI INJECTION (Hard Card)

1. Accurately locate, identify, operate and/or manipulate all component controls required to be utilized in order to place HPCI in the injection mode per 2.2.33.1.
2. Accurately locate and identify all instrumentation required to be monitored in order to place HPCI in the injection mode per 2.2.33.1.
3. Correctly interpret instrument and system responses and their interrelationships while placing HPCI in the injection mode per 2.2.33.1.
4. Satisfactory completion of TPE requires a minimum of:
 - a. 100% of critical elements, as defined in the JPM, successfully completed without error.
 - b. 100% of core work practices (e.g., safety, housekeeping, control of tools, material control, proper use of tools, procedure steps performed in sequence and as written) evaluated as satisfactory (SAT) or not applicable (N/A).

Initiating Cue(s):

The Control Room Supervisor directs you to place HPCI in the injection mode using the hard card and maintain RPV level +3 to +54 inches. Inform the CRS when HPCI is injecting at rated flow and RPV level is +15 to +40 inches.

NOTE: Place the Simulator in RUN and tell the trainee to begin.

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 206005

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Task Title: MANUALLY INITIATE HPCI INJECTION (Hard Card)

Performance Checklist	Standards	Initials
1. Place GLAND SEAL CNDSR BLOWER control switch in START.	The operator places the control switch for the GLAND SEAL CNDSR BLOWER in START. CUE: The red light for the GLAND SEAL CNDSR BLOWER is lit, the green light is out.	_____
2. Open HPCI-MO-14, STM TO TURB VLV.	The operator places the control switch for the HPCI-MO-14 in OPEN. CUE: HPCI-MO-14 red light is on, green light is off.	_____*
3. Start AUXILIARY OIL PUMP by placing control switch in START.	The operator places the control switch for the Auxiliary Oil Pump switch to START. CUE: HPCI Aux Oil pump red light is on, green light is off.	_____*
4. Check that the turbine stop valve opens.	CHECK ON the TURBINE Stop Valve Red indicating light (located on vertical section). CUE: RED light ON. GREEN light OFF.	_____
5. Check that the turbine governor valve opens.	Check ON the TURBINE GOVERNOR VALVE RED light and check OFF the GREEN light (located on vertical section). CUE: GOVERNOR VALVE RED light is ON. The GREEN light is OFF.	_____

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 206005

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Task Title: MANUALLY INITIATE HPCI INJECTION (Hard Card)

Performance Checklist	Standards	Initials
6. OPEN HPCI-MO-19, INJECTION VALVE.	The operator places the control switch for the HPCI-MO-19 in OPEN. CUE: RED light ON. GREEN light OFF.	_____*
7. Check that turbine speed increases	The operator verifies turbine speed between 2050 and 4000 (HPCI-SI-2792) CUE: Speed is 2400 rpm, rising.	_____
8. Check HPCI discharge pressure rises.	The operator checks pump discharge pressure is rising (HPCI-PI-109). CUE: Pressure is 900 psig and rising.	_____
9. Check HPCI starts to indicate flow.	The operator checks HPCI flow is rising (HPCI-FIC-108). CUE: Flow is rising.	_____
10. Check HPCI-MO-25 OPERATION.	The operator checks OPEN HPCI-MO-25, MIN FLOW BYP VLV, at 125 psi (HPCI-PI-109) and CLOSED as flow increases above 800 gpm (HPCI-FIC-108). CUE: (At 125 psi discharge press) RED light ON, GREEN light is OFF. (At > 800 gpm) GREEN light ON. RED light is OFF.	_____
11. Verify flow through HPCI-CV-29.	The operator checks OFF green indicating light for HPCI-CV-29. CUE: GREEN light is OFF.	_____

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 206005

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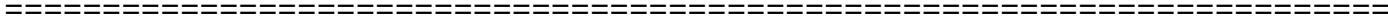
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Task Title: MANUALLY INITIATE HPCI INJECTION (Hard Card)

Performance Checklist	Standards	Initials
1. Adjust FLOW CONTROLLER HPCI-FIC-108 setpoint to maintain desired RPV level, as necessary.	The operator attempts to control HPCI flow with the Set Tape. CUE: HPCI flow remains almost zero, irrespective of Set Tape setting.	_____
2. Operator recognizes and reports failed controller	The operator reports to CRS that HPCI controller has failed in automatic. CUE: CRS acknowledges, directs operator to control HPCI with controller in manual.	_____
3. Operator places HPCI controller in manual.	The operator turns HPCI controller AUTO/BAL/MAN switch to MAN. CUE: HPCI controller AUTO/BAL/MAN switch is in MAN.	_____*
4. Operator adjusts HPCI controller in manual to raise RPV level.	The operator turns HPCI controller manual knob to adjust RPV level to +3 to +54 inches (clockwise to raise flow and counter-clockwise to lower flow). CUE: Flow and level respond to manual knob adjustment as appropriate.	_____*
5. Operator informs CRS when RPV level is +3 to +54 inches.	The operator informs CRS when RPV level is +3 to +54 inches. CUE: HPCI flow responds to manual control knob adjustment as appropriate.	_____

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 206005



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Task Title: MANUALLY INITIATE HPCI INJECTION (Hard Card)

Performance Checklist

Standards

Initials

NOTE: HPCI parameters may be checked at different points during the HPCI system start and operation. They are not required to be checked at the same time.

12. Monitor pump and turbine parameters

Monitor the following pump and turbine parameters:

Pump suction, HPCI-PI-116 > 15" Hg

CUE: Suction pressure indicates 13 psig.

Pump discharge, HPCI-PI-109 > Reactor Pressure

CUE: Discharge pressure indicates 1070 psig.

Turb. Stm Inlet, HPCI-PI-111 = Reactor Pressure

CUE: Steam inlet pressure indicates 900 psig.

Turb. Exhaust, HPCI-PI-112 < 150 psig

CUE: Exhaust pressure indicates 28 psig.

Flow Controller, HPCI-FIC-108, adjusted to maintain level

CUE: Reactor Vessel level is +15" and rising slowly.

Turb. Speed, HPCI-SI-2792 > 2050 RPM

CUE: Turbine Speed indicates 3800 RPM.



JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 206005

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Task Title: MANUALLY INITIATE HPCI INJECTION (Hard Card)

ATTACHMENT 1

SIMULATOR SET-UP

A. Materials required

None

2. Initialize the Simulator in any IC that will support HPCI injection mode after a LOCA.

Batch File name - JPM 3456

C. Change the Simulator conditions from those of the IC as follows:

1. Triggers

None

2. Malfunctions

Instrument	<u>Tag</u>	<u>Trigger</u>	<u>ID</u>	<u>Value</u>	<u>Ramp</u>
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3. Remotes

None

4. Overrides

None

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 206005

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Task Title: MANUALLY INITIATE HPCI INJECTION (Hard Card)

ATTACHMENT 1 (continued)

5. Panel Set-up (suggested. Any setup is allowed that supports performance of the HPCI pressure injection mode)
 - a. Place the Simulator in RUN.
 - b. Load Batch File JPM 3456
 - c. Reset all high level trip signals (if present).
 - d. Reset all annunciators.
 - e. Place the Simulator in FREEZE.

Note: If this JPM is to be performed more than once, snap the Simulator into an IC after the panel set-up is complete.

ATTACHMENT 2

Directions to Trainee:

When I tell you to begin, you are to operate HPCI in the injection mode using the hard card. Before you start, I will state the general plant conditions, the Initiating Cues, and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated them in order to place HPCI in the pressure control mode per the hard card. During actual performance, state the actions you are taking, e.g.: repositioning controls and observing instrumentation.

General Conditions:

1. A LOCA is in progress.
2. HPCI has failed to initiate

Initiating Cue(s):

The Control Room Supervisor directs you to place HPCI in the injection mode using the hard card and maintain RPV level +3 to +54 inches. Inform the CRS when HPCI is injecting at rated flow and RPV level is +15 to +40inches.

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 261009P0101

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Task Title: PERFORM STANDBY GAS TREATMENT SYSTEM DECAY HEAT REMOVAL
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Trainee: _____ Examiner: _____

Pass: _____ Fail: _____ Examiner Signature: _____ Date: _____

Performed faulted/non-faulted: **NON-Faulted**

Additional Program Information:

1. Appropriate Performance Locations: CR/SIM
2. Appropriate Trainee level: RO/SRO
3. Evaluation Method: Simulate Perform
4. Performance Time: 15 minutes
5. NRC K/A 261000 A4.07 (3.1/3.2) A3.04 (3.0/3.1)

Directions to Examiner:

- . This JPM evaluates the trainee's ability to perform Standby Gas Treatment system decay heat removal.
- . The examiner is to obtain the "JPM Comment Form" (Attachment C of ODG 206) prior to administering the JPM.
- . Observe the trainee during performance of the JPM for proper performance IAW NTP 5.4 and the procedure.
- . If this JPM is performed on the Simulator, only the cues preceded by "#" should be given.
- . Observe the trainee during performance of the JPM for proper use of self-checking methods.
- . All blanks must be filled out with either initials or an "NP" for "not performed"; an explanation may also be written in the space if desired by the examiner.
- . Brief the trainee, place the simulator in run, and tell the trainee to begin.

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 261009P0101

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=
Task Title: PERFORM STANDBY GAS TREATMENT SYSTEM DECAY HEAT REMOVAL
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Directions to Trainee:

When I tell you to begin, you are to perform Standby Gas Treatment system decay heat removal. Before you start, I will state the general plant conditions, the Initiating Cues and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated them to perform Standby Gas Treatment system decay heat removal. During performance, state the actions you are taking, e.g.: repositioning controls and observing instrumentation.

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General Conditions:

1. The plant is in the post LOCA mode of operation.
2. SGT A is in service. SGT B is in STANDBY.
3. A Group 6 isolation signal is present.

General References:

1. Procedure 2.2.73

General Tools and Equipment:

1. None

Special Conditions, References, Tools, Equipment:

1. Simulator Setup: See Attachment 1.
2. Critical checks denoted by "*".
3. Simulator cues denoted by "#".

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 261009P0101

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=
Task Title: PERFORM STANDBY GAS TREATMENT SYSTEM DECAY HEAT REMOVAL
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Task Standards:

1. Accurately locate, identify, operate and/or manipulate all component controls required to be utilized to perform Standby Gas Treatment system decay heat removal.
2. Accurately locate and identify all instrumentation required to be monitored to perform Standby Gas Treatment system decay heat removal.
3. Correctly interpret instrument and system responses and their interrelationships when performing Standby Gas Treatment system decay heat removal.
4. Satisfactory completion of TPE requires a minimum of:
 - a. 100% of critical elements, as defined in the JPM, successfully completed without error.
 - b. 100% of core work practices (e.g., safety, housekeeping, control of tools, material control, proper use of tools, procedure steps performed in sequence and as written) evaluated as satisfactory (SAT) or not applicable (N/A).

Initiating Cue(s):

The CRS has directed you to perform SGT subsystem A Decay Heat Removal per procedure 2.2.73. Inform the CRS when SGT subsystem A Decay Heat Removal is in progress.

NOTE: Place the Simulator in RUN and tell the trainee to begin.

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 261009P0101

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Task Title: PERFORM STANDBY GAS TREATMENT SYSTEM DECAY HEAT REMOVAL

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Performance Checklist	Standards	Initials
1. Start SGT B	Place to RUN the Control Switch for SGT B EXHAUST FAN, EF-R-1F. CUE: RED light ON. GREEN light OFF.	_____*
2. Verify SGT B Exhaust Fan Starts	Check SGT B EXHAUST FAN, EF-R-1F runs. CUE: RED light ON. GREEN light OFF.	_____
3. Verify OPEN SGT-AO-250	Check SGT-AO-250, SGT B INLET Opens. CUE: RED light ON. GREEN light OFF.	_____
4. Verify OPEN SGT-AO-252	Check SGT-AO-252, SGT B DISCHARGE Opens. CUE: RED light ON. GREEN light OFF.	_____
5. Stop SGT A	Place to OFF the Control Switch for SGT A EXHAUST FAN, EF-R-1E. CUE: GREEN light ON. RED light OFF.	_____*

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 261009P0101

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Task Title: PERFORM STANDBY GAS TREATMENT SYSTEM DECAY HEAT REMOVAL

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Performance Checklist	Standards	Initials
6. Verify SGT A exhaust fan STOPS.	Check SGT A, EXHAUST FAN EF-R-1E Stops. CUE: GREEN light ON. RED light OFF.	_____
7. Verify CLOSED SGT-AO-249 .	Check SGT-AO-249, SGT A INLET Closes. CUE: GREEN light ON. RED light OFF.	_____
8. Verify CLOSED SGT-AO-251	Check SGT-AO-251, SGT A DISCHARGE Closes. CUE: GREEN light ON. RED light OFF.	_____
9. OPEN SGT-AO-270	Place to AUTO control switch for SGT-AO-270, SGT A DILUTION AIR. CUE: GREEN light OFF. RED light ON.	_____*
10. Verify reactor building differential pressure	Check ≤ -0.25 " WG on HV-DPR-835, RX BLDG/ATMOS DP (VBD-R). CUE: Rx Bldg HV-DPR-835 indicates $-.35$ " WG.	_____
11. Check SGT A	Check SGT A CARBON OUTLET TEMP,	_____

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 261009P0101

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Task Title: PERFORM STANDBY GAS TREATMENT SYSTEM DECAY HEAT REMOVAL

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Performance Checklist	Standards	Initials
carbon outlet temp	(SGT-T1-537A). CUE: Carbon Outlet Temperature is 210 F.	_____
12. Inform the CRS that the task is Complete.	Inform the Control Room Supervisor that SGT train A Decay Heat Removal is in progress. #CUE: The CRS acknowledges the report. This JPM is now complete.	_____

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 261009P0101

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Task Title: PERFORM STANDBY GAS TREATMENT SYSTEM DECAY HEAT REMOVAL
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ATTACHMENT 1

SIMULATOR SET-UP

- A. Materials Required
None
- B. Initialize the Simulator and load batch file.
Batch File Name - JPM 3456
- C. Change the simulator conditions as follows:
 - 1. Triggers
None
 - 2. Malfunctions (

<u>Description</u>	<u>Tag</u>	<u>ID</u>	<u>Severity</u>	<u>Ramp</u>	<u>Initial</u>
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 - 3. Remotes
None

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 261009P0101

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Task Title: PERFORM STANDBY GAS TREATMENT SYSTEM DECAY HEAT REMOVAL
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ATTACHMENT 1 (continued)

4. Overrides

<u>Description</u>	<u>Tag</u>	<u>Trigger</u>	<u>TD</u>	<u>Value</u>	<u>Ramp</u>
18A2M06 SGT TI 537A	ZAOSGTTI537A	N/A	0	253	N/A
18A2M08 SGT TI 547	ZAOSGTTI547	N/A	0	254	N/A
K-1 A-01 Ann K-1 A-1	RA:MUX13C017	N/A	0	ON	N/A

5. Panel Setup

- a. Perform procedure 2.2.73, section for RESPONSE TO AUTOMATIC INITIATION.
- b. Place the Simulator in FREEZE.

Note: If this JPM is to be performed more than once, snap the simulator into an IC after the panel setup is complete.

ATTACHMENT 2

Directions to Trainee:

When I tell you to begin, you are to perform Standby Gas Treatment system decay heat removal. Before you start, I will state the general plant conditions, the Initiating Cues and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated them to perform Standby Gas Treatment system decay heat removal. During performance, state the actions you are taking, e.g.: repositioning controls and observing instrumentation.

General Conditions:

1. The plant is in the post LOCA mode of operation.
2. SGT A is in service. SGT B is in STANDBY.
3. A Group 6 isolation signal is present.

Initiating Cues:

The CRS has directed you to perform SGT subsystem A Decay Heat Removal per procedure 2.2.73. Inform the CRS when SGT subsystem A Decay Heat Removal is in progress.

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: NEW

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Task Title: AVERAGE DRYWELL TEMPERATURE (AVG DW TEMP) CALCULATION
=====

Trainee: _____ Examiner: _____

Pass: _____ Fail: _____ Examiner Signature: _____ Date: _____

Performed faulted/non-faulted: **Faulted**

Additional Program Information:

1. Appropriate Performance Locations: SIM
2. Appropriate Trainee level: RO/SRO
3. Evaluation Method: Simulate Perform
4. Performance Time: 10 minutes
5. NRC K/A 216000 K5.07 (3.6/3.8), A1.01 (3.2/3.3)

Directions to Examiner:

1. This JPM evaluates the trainee's ability to perform an average drywell temperature calculation.
2. The examiner is to obtain the JPM Comment Form (Attachment C of ODG 206) prior to administering the JPM.
3. Observe the trainee during performance of the JPM for proper performance IAW NTP 5.4 and the procedure.
4. If this JPM is performed on the Simulator, only the cues preceded by "#" should be given.
5. Observe the trainee during performance of the JPM for proper use of self-checking methods.
6. All blanks must be filled out with either initials or an NP for not performed ; an explanation may also be written in the space if desired by the examiner.
7. Brief the trainee, place the simulator in run, and tell the trainee to begin.

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: NEW

Directions to Trainee:

When I tell you to begin, you are to perform an average drywell temperature calculation. Before you start, I will state the general plant conditions, the Initiating Cues and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated them to perform an average drywell temperature calculation. During performance, state the actions you are taking, e.g.: repositioning controls and observing instrumentation.

=====

General Conditions:

1. The plant is in the post LOCA mode of operation.

General References:

1. Procedure 5.8.10

General Tools and Equipment:

1. None

Special Conditions, References, Tools, Equipment:

1. Simulator Setup: See Attachment 1.
2. Critical checks denoted by "*".
3. Simulator cues denoted by "#".
4. Faulted steps denoted by "⊕".

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: NEW

Task Standards:

1. Accurately locate, identify, operate and/or manipulate all component controls required to be utilized to perform an average drywell temperature calculation.
2. Accurately locate and identify all instrumentation required to be monitored to perform an average drywell temperature calculation.
3. Correctly interpret instrument and system responses and their interrelationships when performing an average drywell temperature calculation.
4. Satisfactory completion of TPE requires a minimum of:
 - a. 100% of critical elements, as defined in the JPM, successfully completed without error.
 - b. 100% of core work practices (e.g., safety, housekeeping, control of tools, material control, proper use of tools, procedure steps performed in sequence and as written) evaluated as satisfactory (SAT) or not applicable (N/A).

Initiating Cue(s):

The CRS has directed you to perform an average drywell temperature calculation per procedure 5.8.10. Inform the CRS of the average drywell temperature when complete.

NOTE: Place the Simulator in RUN and tell the trainee to begin.

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: NEW

Performance Checklist	Standards	Initials
1. Refer to Procedure 5.8.10.	Refers to Procedure 5.8.10, Section 3.0, and Attachment 1.	_____
2. Record time.	Record time on Attachment 1.	_____
3. Record temp.	Record PC-TI-508A, RX HEAD FLANGE TEMP (0°) on Attachment 1.	_____
4. Record temp.	Record PC-TI-505E, ZONE 2B TEMP (288°) on Attachment 1.	_____
5. Record temp.	Record PC-TI-510A, ZONE 2C TEMP (0°) on Attachment 1.	_____
<p>NOTE: If performing as Faulted, perform step ⑥ then go to step ⑦ on page 6. If performing as NON-Faulted, perform step 6 then go to step 7 on next page.</p>		
6. Record temp.	Record PC-TR-502, RECIRC PUMPS AREA TEMP (RED: PUMP A) on Attachment 1.	_____
⑥. Record temp.	Recognize PC-TR-502, RECIRC PUMPS AREA TEMP (BLUE PUMP B) has bad data. Proceed to Attachment 2.	_____
<p>CUE: If asked, inform candidate to perform the actions specified.</p>		

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: NEW

Performance Checklist	Standards	Initials
7. Record temp.	Record PC-TR-502, RECIRC PUMPS AREA TEMP (BLUE: PUMP B) on Attachment 1.	_____
8. Multiply by weight factor.	Multiply (PC-TI-508A reading) x 0.1 and record on Attachment 1.	_____
9. Multiply by weight factor.	Multiply (PC-TI-505E reading) x 0.2 and record on Attachment 1.	_____
10. Multiply by weight factor.	Multiply (PC-TI-510A reading) x 0.1 and record on Attachment 1.	_____
11. Multiply by weight factor.	Multiply (PC-TR-502: RED reading) x 0.3 and record on Attachment 1.	_____
12. Multiply by weight factor.	Multiply (PC-TR-502: BLUE reading) x 0.3 and record on Attachment 1.	_____
13. Total the products.	Adds the products (from the 5 calculations) to determine AVG DW TEMP.	_____
14. Informs the CRS.	Informs the CRS of the AVG DW TEMP. CUE: As the CRS, acknowledge the report. This task is complete.	_____

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: NEW

Performance Checklist	Standards	Initials
NOTE: If performing as Faulted, the JPM is continued here from step 6.		
7. Reference Attachment 2.	Refers to Procedure 5.8.10, Section 3.2, and Attachment 2.	_____
8. Record time.	Record time on Attachment 2.	_____
9. Record temp.	Record PC-TI-505A TEMP on Attachment 2.	_____
10. Record temp.	Record PC-TI-505B TEMP on Attachment 2.	_____
11. Record temp.	Record PC-TI-505C TEMP on Attachment 2.	_____
12. Record temp.	Record PC-TI-505D TEMP on Attachment 2.	_____
13. Total the 4 readings.	Adds the readings for PC-TI-505A-D (SUM) and records total on Attachment 2.	_____
14. Determine average.	Divides (SUM of the 4 readings) by 4 and records AVG DW TEMP on Attachment 2.	_____
15. Informs CRS.	Informs the CRS of the AVG DW TEMP.	_____
CUE: As the CRS, acknowledge the report. This task is complete.		

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: NEW

ATTACHMENT 1

SIMULATOR SET-UP

A. Materials Required

None

B. Initialize the Simulator in any IC20.

Batch File Name – JPM 3456

C. Change the simulator conditions as follows:

1. Triggers

None

2. Malfunctions (suggested. Any may be used that results in high drywell pressure)

<u>Description</u>	<u>Tag</u>	<u>ID</u>	<u>Severity</u>	<u>Ramp</u>	<u>Initial</u>
--------------------	------------	-----------	-----------------	-------------	----------------

3. Remotes

None

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: NEW

ATTACHMENT 1 (continued)

4. Overrides

<u>Description</u>	<u>Tag</u>	<u>Trigger</u>	<u>TD</u>	<u>Value</u>	<u>Ramp</u>
PC-TR-502 Recirc Pumps Area Temp Recorder Pump A	ZAOPCTR502[1]	A	0	50	0

5. Panel Setup

- a. Place the Simulator in FREEZE.

Note: If this JPM is to be performed more than once, snap the simulator into an IC after the panel setup is complete.

ATTACHMENT 2

Directions to Trainee:

When I tell you to begin, you are to perform an average drywell temperature calculation per procedure 5.8.10. Before you start, I will state the general plant conditions, the Initiating Cues and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated them to perform an average drywell temperature calculation. During performance, state the actions you are taking, e.g.: repositioning controls and observing instrumentation.

General Conditions:

1. The plant is in the post LOCA mode of operation.

Initiating Cues:

The CRS has directed you to perform an average drywell temperature calculation per procedure 5.8.10. Inform the CRS of the average drywell temperature when complete.

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 223070A0101

=====
Task Title: Transfer H₂/O₂ Monitoring System Monitors From Standby to Operation
(Div. 1)
=====

Trainee: _____ Examiner: _____

Score: _____ Pass _____ Fail _____ Examiner Signature: _____
_____ Date: _____

Performed faulted/non-faulted: **NON-Faulted**

Additional Program Information:

- 3. Appropriate Performance Locations: Perform in the plant only.
- 4. Appropriate Trainee Levels: RO/SRO
- 5. Evaluation Method: _____ Perform _____ Simulate
- 6. Performance Time: 35 minutes
- 7. NRC K/A: 2.1.30 (3.9/3.4)

Directions to Examiner:

- 1. This JPM evaluates the trainee's ability to transfer H₂/O₂ monitoring system monitors from Standby to Operation.
- 2. Brief the trainee and tell the trainee to begin.
- 3. Observe the trainee during performance of the JPM for proper use of self-checking methods.
- 4. Observe the trainee during performance of the JPM for proper performance IAW NTP 5.4 and the procedure.
- 5. All blanks must be filled out with either initials or an "NP" for "not performed", and an explanation may also be written in the space if desired by the examiner.

Directions to Trainee:

When I tell you to begin, you are to transfer Division 1 H₂/O₂ monitors from standby to operation. Before you start, I will state the general plant conditions, the Initiating Cues, and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 223070A0101

=====
Task Title: Transfer H₂/O₂ Monitoring System Monitors From Standby to Operation
(Div. 1)
=====

as you would have manipulated them to transfer H₂/O₂ monitoring
system monitors from standby to operation.
=====

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 223070A0101

=====
Task Title: Transfer H₂/O₂ Monitoring System Monitors From Standby to Operation
(Div. 1)
=====

General Conditions:

1. Division II H₂/O₂ System is scheduled to be removed from service.
2. Division I H₂/O₂ System is in Standby.

General References:

1. Procedure 2.2.60.1

General Tools and Equipment:

None

Special Conditions, References, Tools, Equipment:

1. Critical checks denoted by "*".

Task Standards:

1. Accurately locate, identify, operate and/or manipulate all component controls required to be utilized to transfer H₂/O₂ monitoring system monitors from Standby to Operation.
2. Accurately locate and identify all the instrumentation required to be monitored to transfer H₂/O₂ monitoring system monitors from standby to operation.
3. Correctly interpret instrument and system responses and their interrelationships when transferring H₂/O₂ monitoring system monitors from Standby to Operation.
4. Satisfactory completion of TPE requires a minimum of:
 - a. 100% of critical elements, as defined in the JPM, successfully completed without error.
 - b. 100% of core work practices (e.g., safety, housekeeping, control of tools, material control, proper use of tools, procedure steps performed in sequence and as written) evaluated as satisfactory (SAT) or not applicable (N/A).

Initiating Cue(s):

The CRS has directed you to place the Division I monitoring system in Operation from standby. You are to notify the CRS when Division I H₂/O₂ monitoring system has been placed in operation.

NOTE: Tell the trainee to begin.

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 223070A0101

Task Title: Transfer H₂/O₂ Monitoring System Monitors From Standby to Operation
 (Div. 1)

Note to Examiner: The trainee may perform either Step 1 or Step 2 to satisfy the critical step.

<u>Performance Checklist</u>	<u>Standards</u>	<u>Initials</u>
1. Place DIV I H ₂ /O ₂ ANALYZER RESET switch to RESET and then to ON.	The operator places Div I H ₂ /O ₂ ANALYZER RESET switch to RESET and then to ON. CUE: Switch is positioned to RESET and then to ON.	_____ *
2. Place POWER switch to RESET and release at PC-CS-H ₂ /O ₂ I (Cable Spreading Room)	The operator places POWER switch to RESET and release at PC-CS-H ₂ /O ₂ I (Cable Spreading Room). CUE: Switch is positioned toward RESET and RELEASED.	_____ *
3. Ensure power switch in ON	The operator ensures power switch in ON. CUE: Switch is positioned toward ON.	_____
4. Check pump P-1 is running with PUMP switch in RUN.	The operator checks pump P-1 is running with PUMP switch in RUN. CUE: Pump switch is in RUN, red light is lit for the P-1 pump.	_____

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 223070A0101

Task Title: Transfer H₂/O₂ Monitoring System Monitors From Standby to Operation
 (Div. 1)

Performance Checklist	Standards	Initial s
5. Ensure only one sample stream solenoid valve and H ₂ /O ₂ Pump P-1 discharge valve indicates OPEN.	<p>The operator ensures only one sample stream solenoid valve and H₂/O₂ Pump P-1 discharge valve indicates OPEN.</p> <p>CUE: One sample stream solenoid valve light is red, the others are green. (Select and indicate one of the valves one away from the Div II monitor current sample point).</p>	*
6. Advance sample stream by pressing Key 7 until Div I and Div II are on different streams with one line between them.	<p>The operator advances the sample stream by pressing Key 7 until Div I and Div II are on different streams with one line between them.</p> <p>CUE: Provide response to match action taken by operator. (The sample stream should advance one for each press of Key 7.)</p>	
7. Re-initialize the monitor by pressing Key 1.	<p>The operator presses Key 1.</p> <p>CUE: Key 1 has been pressed.</p>	*
8. Place Div I H ₂ /O ₂ ANALYZER RESET switch to OFF.	<p>The operator places Div I H₂/O₂ ANALYZER RESET switch to OFF.</p> <p>CUE: Switch is positioned toward OFF.</p>	

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 223070A0101

Task Title: Transfer H₂/O₂ Monitoring System Monitors From Standby to Operation
 (Div. 1)

Performance Checklist	Standards	Initial s
9. Place PC-R-H ₂ I, CONTAINMENT HYDROGEN, PRINT-HOLD switch in PRINT.	The operator places PC-R-H ₂ I, CONTAINMENT HYDROGEN, PRINT HOLD switch in PRINT. CUE: Switch is positioned toward PRINT.	* _____
10. Place PC-R-O ₂ I, CONTAINMENT OXYGEN, PRINT-HOLD switch in PRINT.	The operator places PC-R-O ₂ I, CONTAINMENT OXYGEN, PRINT-HOLD switch in PRINT. CUE: Switch is positioned toward PRINT.	* _____
11. Check PC-R-H ₂ I and PC-R-O ₂ I digital displays indicate number associated with stream being sampled as indicated on PC-CS-H ₂ /O ₂ I.	The operator checks that PC-R-H ₂ I and PC-R-O ₂ I digital displays indicator number associated with stream being sampled as indication on PC-CS-H ₂ /O ₂ I. CUE: Recorders are synchronized CUE: One hour has elapsed after recorders were synchronized.	_____
12. LCD displays H ₂ and O ₂ values with no alarm messages.	The operator ensures the LCD displays H ₂ and O ₂ values with no alarm messages. CUE: Only H ₂ and O ₂ values are indicated.	_____
13. Ensure no alarm indicating lights are on.	The operator ensures no alarm indicating lights are on. CUE: No red lights are illuminated.	_____

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 223070A0101

=====
Task Title: Transfer H₂/O₂ Monitoring System Monitors From Standby to Operation
(Div. 1)
=====

Performance Checklist	Standards	Initial s
14. Inform CRS Div I is in operation.	The operator informs the CRS Div I is in operation. CUE: The CRS acknowledges the report. This JPM is now complete.	_____

=====

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 223070A0101

=====
Task Title: Transfer H₂/O₂ Monitoring System Monitors From Standby to Operation
(Div. 1)
=====

ATTACHMENT 1

Directions to Trainee:

When I tell you to begin, you are to transfer Division 1 H₂/O₂ monitors from standby to operation. Before you start, I will state the general plant conditions, the Initiating Cues, and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated them to transfer H₂/O₂ monitoring system monitors from standby to operation.

General Conditions:

1. Division II H₂/O₂ System is scheduled to be removed from service.
15. Division I H₂/O₂ System is in standby.

Initiating Cues:

The CRS has directed you to place the Division I monitoring system in operation from standby. You are to notify the CRS when Division I H₂/O₂ monitoring system has been placed in operation.

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 26201800104

=====
Task Title: TRANSFER AN MCC TO THE ALTERNATE POWER SUPPLY
=====

Trainee: _____ Examiner: _____

Score: ___ Pass ___ Fail Examiner Signature: _____ Date: _____

Additional Program Information:

- 16. Appropriate Performance Locations: Plant
- 17. Appropriate Trainee Levels: SO/RO/SRO
- 18. Evaluation Method: ___ Perform ___ Simulate
- 19. Performance Time: 30 minutes
- 20. NRC K/A: 2.1.30 (3.9/3.4) 262001 A4.03 (3.2/3.4)

Directions to Examiner:

- 1. This JPM evaluates the trainee's ability to transfer an MCC to the alternate power supply.
- 2. **If any steps of this JPM are to be performed and not simulated, inform the Shift Supervisor prior to commencing. Upon completion, inform the Shift Supervisor of any system restoration that may be required.**
- 3. Brief the trainee and tell the trainee to begin.
- 4. Observe the trainee during performance of the JPM for proper use of self-checking methods.
- 5. All blanks must be filled out with either initials or an "NP" for "not performed", and an explanation may also be written in the space if desired by the examiner.

Directions to Trainee:

When I tell you to begin, you are to transfer an MCC to the alternate power supply. Before you start, I will state the general plant conditions, the initiating cues, and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated them to transfer an MCC to the alternate power supply.

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 26201800104

=====
Task Title: TRANSFER AN MCC TO THE ALTERNATE POWER SUPPLY
=====

General Conditions:

1. A Maintenance outage is in progress (Plant is in Mode 4).
2. MCC-T is to be deenergized for cleaning and inspection.
3. Diesel Generator #1 is operable.

General References:

1. Procedure 2.2.19

General Tools and Equipment:

1. Key 43

Special Conditions, References, Tools, Equipment:

1. Critical checks denoted by "*".

Task Standards:

1. Accurately locate, identify, operate and/or manipulate all component controls required to be utilized to transfer an MCC to the alternate power supply.
2. Accurately locate and identify all instrumentation required to be monitored to transfer an MCC to the alternate power supply.
3. Correctly interpret instrument and system responses and their interrelationships when transferring an MCC to the alternate power supply.
4. Satisfactory completion of TPE requires a minimum of:
 - a. 100% of critical elements, as defined in the JPM, successfully completed without error.
 - b. 100% of core work practices (e.g., safety, housekeeping, control of tools, material control, proper use of tools, procedure steps performed in sequence and as written) evaluated as satisfactory (SAT) or not applicable (N/A).

Initiating Cue(s):

The SS has directed you to transfer MCC-X from normal to emergency power in accordance with SOP 2.2.19. You are to inform the SS when MCC-X is powered from emergency power.

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 26201800104

=====
Task Title: TRANSFER AN MCC TO THE ALTERNATE POWER SUPPLY
=====

NOTE: Tell the trainee to begin.

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 26201800104

=====

Task Title: TRANSFER AN MCC TO THE ALTERNATE POWER SUPPLY

=====

Performance Checklist	Standards	Initials
1. Obtain Key 43	The operator obtains Key 43 from the Control Room. CUE: If asked at the MCC, only the right white light is ON, green light is ON.	_____*
2. Unlock Emergency feeder breaker	At MCC-L, the operator unlocks and removes the padlock from Breaker 2B, MCC-X EMERGENCY FEEDER. CUE: Padlock is removed.	_____*
3. CLOSE Emergency feeder breaker	At MCC-L, the operator CLOSES Breaker 2B, MCC-X EMERGENCY FEEDER. CUE: The top of the breaker handle is to the right, the bottom is to the left.	_____*
4. Verify emergency power available	At MCC-X Transfer Switch, the operator ensures the EMERGENCY POWER AVAILABLE light is ON. CUE: Both WHITE power available lights are ON CUE: If asked, green light is ON, red light is OFF.	_____

Performance Checklist	Standards	Initials
5. Transfer MCC to emergency source	At MCC-X Transfer Switch, the operator momentarily presses the EMERGENCY button.	_____*

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No. : 26201800104

=====

Task Title: TRANSFER AN MCC TO THE ALTERNATE POWER SUPPLY

=====

CUE: Mechanical "clunking"
 sound is heard.

6.	Verify MCC transfer	At MCC-X Transfer Switch, the operator ensures the MCC-X FED FROM MCC-L light is ON.	_____
		CUE: RED light is ON, GREEN light is OFF.	

7.	OPEN Normal feeder breaker	At MCC-T, the operator OPENS Breaker 3C, MCC-X NORMAL FEEDER.	_____
		CUE: The top of the breaker handle is to the left, the bottom is to the right.	

8.	LOCK OPEN Normal feeder breaker	At MCC-T, the operator installs the padlock removed earlier on Breaker 3C, MCC-X NORMAL FEEDER.	_____
		CUE: Padlock is installed.	
		CUE: If asked, at MCC-X red light is ON, left power avail light is ON	

9.	Return Key 43	The operator returns Key 43 to the Control Room.	_____
----	---------------	--	-------

<u>Performance Checklis</u>	<u>Standards</u>	<u>Initials</u>
10. Inform SS	The operator informs the SS that MCC-X is powered from it's emergency source and that proper operation of equipment is to be verified.	_____
	CUE: I have been informed. I will verify proper	

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 26201800104

=====
Task Title: TRANSFER AN MCC TO THE ALTERNATE POWER SUPPLY
=====

operation of equipment
powered from MCC-X.
This JPM is now
complete.

ATTACHMENT 1

Directions to Trainee:

When I tell you to begin, you are to transfer an MCC to the alternate power supply. Before you start, I will state the general plant conditions, the initiating cues, and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated them to transfer an MCC to the alternate power supply.

General Conditions:

1. A Maintenance outage is in progress. (Plant is in Mode 4)
2. MCC-T is to be deenergized for cleaning and inspection.
3. Diesel Generator #1 is operable.

Initiating Cue(s):

The SS has directed you to transfer MCC-X from normal to emergency power in accordance with SOP 2.2.19. You are to inform the SS when MCC-X is powered from emergency power.

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 299051A0104

=====
Task Title: INSTALL & REMOVE PTMs (PTM #41 & 42)
=====

Trainee: _____
Examiner: _____

Score: _____ Pass _____ Fail Examiner Signature: _____
Date: _____

Additional Program Information:

1. Appropriate Performance Locations: Plant
2. Appropriate Trainee Levels: SO/RO/SRO
3. Evaluation Method: _____ Simulate _____ Perform
4. Performance Time: 20 minutes
5. NRC K/A: 2.1.30 (3.9/3.4); 2.4.34 (3.8/3.6)

Directions to Examiner:

1. This JPM evaluates the trainee's ability to defeat RCIC low Reactor pressure isolation using PTM #41 and #42 per 5.8.20.
2. **ENSURE THE OPERATOR COMPLIES WITH ALL ELECTRICAL SAFETY PRECAUTIONS.**
3. Brief the trainee and tell the trainee to begin.
4. Observe the trainee during performance of the JPM for proper performance IAW NTP 5.4 and the procedure.
5. Observe the trainee during performance of the JPM for proper use of self-checking methods.
6. All blanks must be filled out with either initials or an "NP" for "not performed", and an explanation may also be written in the space if desired by the examiner.

Directions to Trainee:

When I tell you to begin, you are to perform the steps necessary to defeat RCIC low Reactor pressure isolation using PTM #41 and #42 per 5.8.20. Before you start, I will state the general plant conditions, the initiating cues, and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated them to complete EOP PTM #41 and #42.

=====

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 299051A0104

=====
Task Title: INSTALL & REMOVE PTMs (PTM #41 & 42)
=====

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 299051A0104

=====
Task Title: INSTALL & REMOVE PTMs (PTM #41 & 42)
=====

General Conditions:

1. The plant has scrammed.
2. The MSIVs are closed.
3. HPCI is being used for pressure control.
4. RCIC is being used for level control.

General References:

5. Emergency Support Procedure 5.8.20, EOP Plant Temporary Modifications

General Tools and Equipment:

1. Flat tipped screwdriver.
2. Key for Aux Relay Room (Grand Master will work)
3. Electrical tape.
4. Key for PTM Box in Aux Relay Room (Master Lock J423)
5. Flashlight.

Special Conditions, References, Tools, Equipment:

1. Critical checks denoted by "*".

Task Standards:

1. Accurately locate, identify, operate and/or manipulate all component controls required to be utilized to install EOP PTMs #41 and #42.
2. Accurately locate and identify all instrumentation required to be monitored when installing EOP PTMs #41 and #42.
3. Correctly interpret instrument and system responses and their interrelationships when installing EOP PTMs #41 and #42.
4. Satisfactory completion of TPE requires a minimum of:
 - a. 100% of critical elements, as defined in the JPM, successfully completed without error.
 - b. 100% of core work practices (e.g., safety, housekeeping, control of tools, material control, proper use of tools, procedure steps performed in sequence and as written) evaluated as satisfactory (SAT) or not applicable (N/A).

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 299051A0104

=====
Task Title: INSTALL & REMOVE PTMs (PTM #41 & 42)
=====

Initiating Cue(s):

The Reactor Operator has directed you to defeat RCIC low Reactor pressure isolation by installing EOP PTMs #41 and #42 per ESP 5.8.20. You are to inform the Reactor Operator when the EOP PTMs #41 and #42 have been installed.

NOTE: Tell the trainee to begin.

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 299051A0104

=====
 =====
Task Title: INSTALL & REMOVE PTMs (PTM #41 & 42)
 =====
 =====

Performance Checklist	Standards	Initials
1. Obtain flat-tipped screwdriver and electrical tape. NOTE: Procedure 5.8.20 is staged in the Relay Room. NOTE: Key J423 is required to open the PTM Box in the Aux Relay room.	The operator obtains flat-tipped screwdriver and electrical tape. NOTE: The student must show you a flat-tipped screwdriver and electrical tape. These are in the PTM box, but a Master Lock key is required. Any flat-tipped screwdriver and electrical tape will work.	_____*
2. Identify Wire RC27-4 on Terminal BB-43 in PNL 9-30 (C-903-AUX RELAY RM).	The operator correctly identifies Wire RC27-4 on Terminal BB-43 in PNL 9-30.	_____
3. Install EOP PTM Number 41 by lifting Wire RC27-4 from Terminal BB-43, PNL 9-30 (C-903-AUX RELAY RM).	The operator loosens the screw and removes Wire RC27-4 from Terminal BB-43 in PNL 9-30. CUE: The lead is lifted.	_____*
4. Insulate the lifted lead	The operator wraps tape around the end of the wire lifted. CUE: The end of the wire has electrical tape wrapped around it.	_____

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 299051A0104

=====
 Task Title: INSTALL & REMOVE PTMs (PTM #41 & 42)
 =====

Performance Checklist	Standards	Initials
5. Hang PTM tag.	The operator hangs the PTM 41 tag on the lifted lead. CUE: The PTM 41 tag is attached to the lifted lead.	_____
6. Identify Wire RC-35-3 on Terminal DD-28 in BAY-3 of PNL 9-33 (C-903-AUX RELAY RM).	The operator correctly identifies Wire RC-35-3 on Terminal DD-28 in BAY-3 of PNL 9-33.	_____
NOTE: Panel 9-33 bays are numbered from right to left, bay 3 is the bay farthest to the left.		
7. Install EOP PTM Number 42 by lifting Wire RC-35-3 from Terminal DD-28, BAY-3, PNL 9-33 (C-903-AUX RELAY RM).	The operator loosens the screw and removes Wire RC-35-3 from Terminal DD-28 in BAY-3 of PNL 9-33. CUE: The lead is lifted.	_____*
8. Insulate the lifted lead	The operator wraps tape around the end of the wire lifted. CUE: The end of the wire has electrical tape wrapped around it.	_____

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 299051A0104

=====
Task Title: INSTALL & REMOVE PTMs (PTM #41 & 42)
=====

Performance Checklist	Standards	Initials
9. Hang PTM tag.	The operator hangs the PTM 42 tag on the lifted lead. CUE: The PTM 42 tag is attached to the lifted lead.	_____
10. Inform CRS that RCIC low reactor pressure isolation has been defeated.	The operator informs the CRS (RO) that EOP PTM 41 and 42 has been installed. CUE: The CRS (RO) acknowledges. This JPM is complete.	_____

ATTACHMENT 1

Directions to Trainee:

When I tell you to begin, you are to perform the steps necessary to defeat RCIC low Reactor pressure isolation using PTM #41 and #42 per 5.8.20. Before you start, I will state the general plant conditions, the initiating cues, and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated them to complete EOP PTM #41 and #42.

General Conditions:

1. The plant has scrammed.
2. The MSIVs are closed.
3. HPCI is being used for pressure control.
4. RCIC is being used for level control.

Initiating Cue(s):

The Reactor Operator has directed you to defeat RCIC low Reactor pressure isolation by installing EOP PTMs #41 and #42 per ESP 5.8.20. You are to inform the Reactor Operator when the EOP PTMs #41 and #42 have been installed.

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 21700600102

=====
Task Title: RESET THE REACTOR CORE ISOLATION COOLING SYSTEM OVERSPEED
TRIP
=====

Trainee: _____ Examiner: _____

Pass: ____ Fail: ____ Examiner Signature: _____ Date: _____

Additional Program Information:

1. Appropriate Performance Locations: Plant
2. Appropriate Trainee Level: SO/RO/SRO
3. Evaluation Method: **Simulate**
4. Performance Time: 20 minutes
5. Importance Factor: 3.9
6. NRC K/A: 2.1.30 (3.9/3.4)

Directions to Examiner:

5. This JPM evaluates the trainee's ability to locally reset the RCIC system overspeed trip.
6. The examiner is to obtain the "JPM Comment Form" (Attachment C of ODG 206) prior to administering the JPM.
7. Observe the trainee during performance of the JPM for proper use of self-checking methods.
8. All blanks must be filled out with either initials or an "NP" for "not performed"; an explanation may also be written in the space if desired by the examiner.
9. Brief the trainee, and tell the trainee to begin.

Directions to Trainee:

When I tell you to begin, you are to reset a RCIC system overspeed trip. Before you start, I will state the general plant conditions, the Initiating Cues, and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated them to locally reset the RCIC system overspeed trip.

General Conditions:

1. The plant has experienced a reactor scram.
2. RCIC was placed in-service by the control room staff for level control.

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 21700600102

=====
Task Title: RESET THE REACTOR CORE ISOLATION COOLING SYSTEM OVERSPEED
TRIP
=====

3. The RCIC turbine has tripped on overspeed.

General References:

1. Procedure 2.2.67.1

General Tools and Equipment:

1. None

Special Conditions, References, Tools, Equipment:

1. Critical checks denoted by "*".

Task Standards:

1. Accurately locate, identify operate and/or manipulate all component controls required to be utilized to reset the RCIC system overspeed trip.

Initiating Cue(s):

The Control Room Supervisor directs you to locally reset the RCIC mechanical overspeed trip linkage per Procedure 2.2.67.1 Notify the CRS when the task is complete.

Note: Tell the trainee to begin.

JOB PERFORMANCE MEASURE FOR OPERATIONS

Task No.: 21700600102

=====
Task Title: RESET THE REACTOR CORE ISOLATION COOLING SYSTEM OVERSPEED
TRIP
=====

Performance Checklist	Standard	Initials
1. Reset RCIC manual overspeed trip mechanism	Push the rod connected to the Turbine Trip Throttle Valve and the manual trip lever toward Turbine Trip Throttle Valve until the manual trip lever pivots up. CUE: The trip handle pivots up and the rod stays toward the turbine.	_____ *
2. Inform the Control Room Supervisor the task is complete	Inform the CRS that the RCIC mechanical overspeed trip linkage has been reset. CUE: The CRS acknowledges the report. This JPM is complete.	_____

ATTACHMENT 1

Directions to Trainee:

When I tell you to begin, you are to reset a RCIC system overspeed trip. Before you start, I will state the general plant conditions, the Initiating Cues, and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated them to locally reset the RCIC system overspeed trip.

General Conditions:

1. The plant has experienced a reactor scram.
2. RCIC was placed in-service by the control room staff for level control.
3. The RCIC turbine has tripped on overspeed.
4. RCIC-MO-131 is OPEN.

Initiating Cues:

The Control Room Supervisor directs you to locally reset the RCIC mechanical overspeed trip linkage per Procedure 2.2.67.1 Notify the CRS when the task is complete.

Simulation Facility	Cooper Nuclear Station	Scenario No.:	1	Op Test No.:	
Examiners:	_____	Operators:	_____		<u>CRS</u>
	_____		_____		<u>RO</u>
	_____		_____		<u>BOP</u>
Initial Condition:	70% Full Power Operation, (EOC) (IC-20) with all systems operable except the Emergency Transformer and "A" CRD Pump.				
Turnover:	See attached turnover sheet				
Event No.	Event Type*	Position	Event Description		
Pre-insert	N/A		ATWS		
Pre-insert	N/A		Group 1 isolation failure		
Pre-insert	N/A		Loss of power, Emergency Transformer		
1	N	BOP	Shift RB HVAC Fans		
2	C	CRS/ BOP	REC Pump Trip.		

3	R	CRS/ RO	Scheduled power increase
4	I	CRS/ RO	“A” APRM fails high.
5	C	Crew	Loss of main condenser vacuum
6	M	Crew	ATWS (Hydraulic Lock on HCUs).
7	C	CRS/ BOP	MSIVs fail to close following loss of vacuum.

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

SCENARIO #1 SUMMARY:

The crew assumes the shift with the plant operating at 70% power with all systems operable except the Emergency Transformer and the “A” CRD Pump. The crew will perform a routine shifting of RBHVAC Fans; shortly after the fan swap, the “B” REC Pump will trip. This will require entry into 2.4REC and T.S. 3.7.3. After conditions are stabilized, the load dispatcher will request raising main generator load 100 Mwe which requires raising reactor power with recirc flow. While raising load the “A” Average Power Range Monitor (APRM) will fail high, initiating a half scram. This will require bypassing the APRM, resetting RPS and checking Technical Specifications (tracking LCO only). Main Condenser vacuum will degrade as air in-leakage rises from a leak in the turbine/condenser boot. This will require a turbine trip and reactor scram. When a reactor scram is attempted, an ATWS requires entry into EOPs 1A, 6A and 7A. ARI will also fail to insert Control Rods. When Vacuum lowers to the MSIV isolation setpoint, the MSIVs will fail to close and must be manually closed.

Some Control Rods will insert on the first manual scram after the ATWS. A second manual scram will insert more Control Rods, and the third manual scram will insert the remaining Control Rods.

Scenario 1		Event 1
Event No:		No.
Event Description: Shift Reactor Building H & V Exhaust Fans		
Time	Position	Applicant's Actions or Behavior
	CRS	Directs Shift Reactor Building H & V Exhaust Fans per Section 5.0 of OP 2.2.47.
	BOP	Place Controller HV-DPIC-835A, RX BLDG/ATMOS DP, to MANUAL (M) and adjust signal to stabilize Reactor Building pressure at -0.30" to -0.33" wg. Place control switch for SUPPLY FAN selected to AUTO to RUN.
		NOTE - Performance of the next step should be rapid and may result in RX BLDG LOW D/P alarm and entry into EOPs and T.S. if RX BLDG d/p goes above zero.
	BOP	Place control switch for EXHAUST FAN selected to STBY to RUN. Place control switch for fan to be removed from service

Time	Position	Applicant's Actions or Behavior
		<p>to OFF and back to STBY. Ensure Reactor Building pressure is being maintained at -0.30" to -0.33" wg.</p> <p>Adjust HV-DPIC-835A, to stabilize Reactor Building pressure at -0.30" to -0.33" wg.</p> <p>Place control switch for SUPPLY FAN selected to RUN to AUTO.</p> <p>Place control switch for EXHAUST FAN selected to RUN to AUTO.</p> <p>Place Controller HV-DPIC-835A, RX BLDG/ATMOS DP, in AUTO (A). Ensure Reactor Building pressure continues to be maintained at -0.30" to -0.33"</p>

Time	Position	Applicant's Actions or Behavior

Scenario 1 No:		Event 2 No.
Event Description: REC Pump Trip		
Time	Position	Applicant's Actions or Behavior
	BOP	Reports Annunciator: M-1/B-2, REC PUMP B FAILURE. and possibly LOW HEADER PRESSURE.
	BOP	Diagnoses the loss of the "B" REC Pump
	CRS	Directs the start of necessary REC pumps.
	BOP	Starts the "C" REC pump.

Time	Position	Applicant's Actions or Behavior
	BOP	<p>Starts the "C" REC Pump and verifies normal system operation.</p> <p>Directs an SO to inspect the REC Pump area for unusual conditions and verify the "C" REC Pump is operating correctly.</p> <p>Verifies correct valve lineup and monitors REC Pump discharge pressures.</p>
	CRS	<p>Initiates investigation and repair of REC Pump "B"</p> <p>Enters T.S. 3.7.3.A1 and declares a 30 day LCO</p>

Time	Position	Applicant's Actions or Behavior

Scenario No: 1		Event No: 3
Event Description: Power Increase		
Time	Position	Applicant's Actions or Behavior
	CRS	<p>Direct the RO to increase station output by 100 MWe by raising recirc flow in accordance with station procedure 2.1.10.</p> <p>NOTE: CRS may act as Reactivity Manager.</p>
	RO	<p>Enters 2.1.10, STATION POWER CHANGES Raises power by increasing RR pump flow, maintaining loop flows balanced. Maintains rate of power change consistent with system capabilities as determined by Load Dispatcher. Discontinues power rise when directed or station output has risen 100 MWe.</p>
	BOP	<p>Monitors secondary plant parameters and reports Mwe changes to RO.</p>

Time	Position	Applicant's Actions or Behavior

Scenario 1 No:		Event 4 No.
Event Description: "A" APRM Fails High		
Time	Position	Applicant's Actions or Behavior
	RO	Reports Annunciators 9-5-1/A-4, ROD WITHDRAWAL BLOCK 9-5-1/A-7 APRM RPS CH A UPSCALE TRIP OR INOP 9-5-2/A-1 RX SCRAM CHANNEL A alarm. Diagnoses half scram and APRM "A" High
	CRS	Directs BOP to back panels to check APRM drawers for indications and trouble shooting.
	BOP	Locates APRM "A" on back panels Reports APRM "A" failed upscale
	CRS	Directs RO to BYPASS APRM "A" and reset half scram. May check T.S. 3.3.1 (Minimum channel requirements are met) and declare a Tracking LCO on the failed APRM.

Time	Position	Applicant's Actions or Behavior
	RO	Bypasses APRM "A" Resets half scram per 2.1.5

Scenario 1		Event 5
No:		No.
Event Description: Loss of Main Condenser vacuum		
Time	Position	Applicant's Actions or Behavior
	BOP	Operator diagnoses loss of vacuum from Control Room indications or annunciator B-1/A-3, TG LOW VACUUM PRE-TRIP Announces degrading condenser vacuum.
	CRS	Enters ABNORMAL PROCEDURE 2.4.VAC, LOSS OF CONDENSER VACUUM Directs a reactor power reduction by reducing recirculation flow. Notifies Load Dispatcher. Directs BOP operator to keep him informed of vacuum When it is determined that vacuum cannot be recovered to >23" Hg, directs a Reactor Scram and Turbine Trip.
	RO	Lowers power by lowering RR pump flow. Maintains rate of power change consistent with system capabilities. When directed, manually scrams the reactor, reports failure to scram.

Time	Position	Applicant's Actions or Behavior

Scenario 1		Event 6
No:		No.
Event Description: ATWS (Hydraulic Lock)		
Time	Position	Applicant's Actions or Behavior
	CRS	<p>Enters EOP-1A and transitions to 6A/7A. Directs:</p> <ul style="list-style-type: none"> Place the Mode switch in S/D ARI initiated Manually runback RR pumps to minimum Trip Recirc pumps Insert control rods using 5.8.3 actions. Verify group isolations. Inhibit ADS Pressure be maintained 800 to 1000 psig. RPV Low Water Level Group 1 be defeated. (This step may not be taken if the MSIVs have closed or the CRS anticipates MSIV closure on the loss of vacuum.)
	RO	<ul style="list-style-type: none"> Mode switch to SHUTDOWN. Initiate ARI. Run Recirc pumps to minimum. Trip Recirc pumps. Insert control rods per 5.8.3 Begins actions to reset the scram and re-inserting additional scrams.

Time	Position	Applicant's Actions or Behavior
	BOP	<p>Inhibit ADS. Verify Group isolations (MSIVs should isolate by 8" Hg vac). Maintain RPV pressure 800 to 1000 psig with Turbine Bypass Valves and SRVs. Initiates SLC (If directed at this time) and confirms injection. Provides initial SLC Tank level to the CRS.</p>
	CRS	<p>Directs terminating and preventing injection except for RCIC, CRD and Boron injection be terminated and prevented until RPV water level is < +100" (corrected FZ) Before BIIT, direct SLC be initiated. When RPV water level reaches +100" (corrected FZ), direct RPV water level be maintained between -25" and +100" (corrected FZ) (LL).</p>

Scenario 1 No:		Event 6 No.
Event Description: ATWS (Hydraulic Lock)		
Time	Position	Applicant's Actions or Behavior
	BOP	Lowers RPV water level to +100" and reports to CRS. When and if directed, maintains RPV water level -25" to +100".
	CRS	When torus temperature reaches 95°F, enter and direct the activities of EOP-3A. Direct torus cooling be placed in service. When all rods have been inserted or HSBW injected, direct RPV water level be restored and maintained +15" to +40".
	RO	Direct SO to install EOP PTM 61 & 62. Install jumpers to defeat RPS. Reset scram. Allow SDV to drain. Insert manual scram, report rod movement. Reset scram and continue inserting manual scrams. Report when 26% (HSBW) of the SLC tank has been injected.

	BOP	Initiates RHR in Suppression Pool Cooling. When directed, maximizes Suppression Pool Cooling. Restore and maintain RPV water level +15" to +40".
	CRS	Classifies event as a Site Area Emergency (based on EAL 3.3.4) and implements EPIP 5.7.2, Shift Supervisor EPIP.

Scenario 1		Event 7
Event No:		No.
Event Description: MSIVs failure to automatically isolate		
Time	Position	Applicant's Actions or Behavior
	BOP	Report MSIVs have not isolated on low cond. vacuum (10").
	CRS	Direct manually closing the MSIVs.
	BOP	Place all MSIV control switches to CLOSE. Verify all MSIVs are closed.

Time	Position	Applicant's Actions or Behavior

Critical Tasks Scenario #1	Sat	Unsat
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The Crew shall stop injection within 5 minutes of directing injection be stopped.		
The crew shall insert the control rods.		

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SIMULATOR SET-UP

A. Initialize the simulator in IC 20, Full Power Operation (EOL).

1. Transfer to RUN.
2. Load batch file A:\nrc1
3. Lower Reactor power to 70% using recirc flow
4. Adjust generator to +100 MVARs.
5. Balance voltage regulator.
6. Balance all controllers.
7. Place breakers 1FS and 1GS in PTL
8. Ensure PMIS IDTs are blank
9. Red tag the "A" CRD Pump
10. Red tag breaker C/S for 1FS & 1GS.
11. Clear all annunciators
12. Turn recorder power ON

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13. Adjust GAFs

B. Verify simulator conditions as follows:

1. Triggers

<u>Number</u>	<u>File Name</u>	<u>Description</u>
E1	None	Default to False
E2	None	Default to False
E3	None	Default to False
E4	None	Default to False
E5	None	Default to False

2. Malfunctions

<u>Number</u>	<u>Title</u>	<u>Trigger</u>	<u>T</u> <u>D</u>	<u>Severity</u>	<u>Ramp</u>	<u>Initial</u>
RP04	Group 1 Isolation Failure	Active	N/A	N/A	N/A	N/A
RD02	ATWS	Active	N/A	90%	N/A	N/A

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<u>Number</u>	<u>Title</u>	<u>Trigger</u>	<u>T</u> <u>D</u>	<u>Severity</u>	<u>Ramp</u>	<u>Initial</u>
ED06	Loss of Power Emergency Transformer	Active	N/ A	N/A	N/A	N/A
SW11B	Trip of "B" REC Pump	E1	0	N/A	N/A	N/A
NM09A	APRM Signal Failure	E3	0	100%	N/A	N/A
MC01	Main Condenser Air In-Leakage	E4	0	100%	10:00	N/A

3. Remotes

<u>Number</u>	<u>Title</u>	<u>Trigger</u>	<u>Value</u>	<u>Ramp</u>
RD18	Install ARI PTMs	E4	N/A	N/A
RD04	Manually Close CRD-29	E5	CLOS E	N/A

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4. Overrides

<u>Instrument</u>	<u>Tag</u>	<u>Trigge</u>	<u>T</u>	<u>Valu</u>	<u>Ram</u>
		<u>r</u>	<u>D</u>	<u>e</u>	<u>p</u>
Control Switch for CRD Pump A (START, STOP)	zdicrdsws3a[1]	A	N/ A	STO P	N/A
Control Switch for CRD Pump A green light	zdocrdsws3a[1]	A	N/ A	OFF	N/A

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Pre Events:

Allow the operators several minutes to review the panels and set up the controls and displays as they desire.

Event #1:Shift Reactor Building H & V Exhaust Fans

ROLE PLAY:

None

Event #2: REC Pump Trip

ACTION:

When the crew has swapped RBHVAC fans and Secondary Containment Parameters are normal and when directed by the lead examiner **Activate Trigger E1: REC Pump B Trip**

ROLE PLAY:

If asked as the Station Operator to investigate wait 1 minute and report that the pump motor is hot and it smells of hot insulation.

ROLE PLAY:

If asked to check the C REC Pump as the SO report that it is

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operating normally.

Event #3: Power Increase

ROLE PLAY:

Contact the Control Room via extension 5271 as the load dispatcher and direct that **net load be raised 100 MWe**. In addition direct that MVARs remain at +100 MVARs.

ROLE PLAY:

__If contacted as the reactor engineer direct the crew to raise power using recirc flow.

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Event #4: “A” APRM Fails High

ACTION:

After the crew has completed the power change and when directed by the lead examiner **Activate Trigger E3: APRM Signal Failure.**

ROLE PLAY:

If contacted as I & C report that you will get a tech and be up in the control room in about 15 minutes.

Event #5: Loss of Main Condenser vacuum

ACTION:

After the crew has reponded to the APRM failure and when directed by the lead examiner **Activate Trigger E4:Main Condenser Air In-Leakage.**

ROLE PLAY:

If called as the load dispatcher acknowledge the load reduction.

Event #6: ATWS

ROLE PLAY:

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If asked as the Station Operator to install ARI PTMs, wait 2 minutes, then Insert REMOTE FUNCTION **RD18**, EOP PTMs 61 and 62 and inform the Control Room.

ACTION:

One minute after the first manual scram, modify malfunction **RD02**, ATWS to 80%

After the second scram modify malfunction **RD02**, ATWS to 60%

After the third scram delete malfunction **RD02**.

ACTION:

When the following conditions are reached, place the simulator in

FREEZE:

1. The MSIV's are closed.
2. Reactor is shutdown under all conditions without boron.
3. When directed by the lead examiner.

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Batch File

^NRC Scenario 1

imf rp04

imf rd02 90

imf ed06

ior zdicrdsws3a[1] stop

ior zlocrdsws3a[1] off

imf sw11b(1)

imf nm09a(2)

imf mc01(3) 100 10:00

irf rd18(4) remove

irf rd04(5) close

Turnover Information

Scenario #1

Plant Status:

1. The plant is operating at approximately 70% power near the end of the operating cycle.

2. Rod Sequence Step: 1

Information:

Rod: 18-

27

Note 26

h: _____

3. Tech. Spec. Limitations in effect:

Day 1 of 7 day LCO (3.8.1, condition A) due to Emergency Transformer being OOS for planned maintenance on 69KV line by OPPD. All associated surveillances are current. SR6.EE.610 was performed one hour ago.

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Scenario #1

4. Significant problems/abnormalities:

- "A" CRD Pump is tagged out. The speed increaser gearbox is being replaced after complete failure.
- Emergency Transformer estimated return to service this shift.
- Southeast Nebraska is in a severe thunderstorm warning and flash flood watch.

5. Evolutions/maintenance for the on-coming shift:

- When contacted, raise power level.
- Mechanics working on "A" CRD Pump.
- OPPD expediting return of 69KV line due to weather
- As soon as possible after assuming the shift, shift RBHVAC fans to permit maintenance to lubricate Exhaust Fan EF-R-1A

Simulation Facility: Cooper Nuclear Station Scenario No. 2 Op. Test No. _____

Examiners: _____ Operator(s): _____ CR
S
R
O
B
OP

Initial Conditions: 100% Full Power Operation, (EOC) (IC-20) with all systems operable except the Emergency Transformer.

Turnover: See attached turnover sheet.

Event No.	Event Type	Position	Event Description
Pre-insert	N/A		RRMG A Scoop Tube Lockout P/B failure
Pre-insert	N/A		RRMG B Scoop Tube Lockout P/B failure
Pre-insert	N/A		RCIC system failure to automatically start
Pre-insert	N/A		HPCI Auxiliary Oil Pump failure to start
Pre-insert	N/A		4160 Bus auto transfer failure

Pre-insert	N/A	Loss of power Emergency Transformer
1	N (CRS/BOP)	Start the “A” CRD pump and place it in service. Secure the “B” CRD Pump.
2	R (CRS/RO)	Power reduction to lower load on the south interface.
3	C (CRS/BOP)	DEH Oil System Pressure Oscillations.
4	I (CRS/RO)	Recirculation Pump Runback to 20% with power oscillations.
5	C (CRS/BOP)	(Crew) Loss of all off-site power.
6	M (CREW)	Small break LOCA with an HPCI Aux oil pump failure
7	C (CRS/BOP)	(CRS/BOP) RCIC fails to automatically start then trips.

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

SCENARIO # 2 SUMMARY:

The crew assumes the shift with the plant operating at 100% power with all systems operable except the Emergency Transformer and “A” CRD Pump. The crew will start the “A” CRD Pump and place it in service. After the CRD system is operating normally, Doniphan will notify Cooper that the south interface load has exceeded 1190 MVA and that Cooper must lower load 100 MWe immediately. After a sufficient power change is observed, the DEH oil pressure pilot valve spring will fail, causing DEH pressure oscillation, this will require stopping the power reduction. When conditions have stabilized, a 20% spurious runback signal will force the reactor into the Stability Exclusion Region and eventual power oscillations will occur. Entry into the Stability Exclusion Region will require entry into T.S. 3.4.1. The power oscillations will become large and may reach the APRM High setpoints with the auto scram function defeated. The crew must manually scram the reactor. When the reactor scrams off-site power will be lost and a small break will start on the B Recirc Loop discharge line. The DGs will start and provide power to emergency buses. A failure of the HPCI Auxiliary Oil Pump will prevent operation of HPCI. RCIC will fail to automatically start and must be manually started. After its started it will trip. It may be restarted, but will continue to trip. When RPV water level cannot be maintained,

the crew must Emergency Depressurize and restore RPV water level with low pressure ECCS systems with power supplied by the DGs.

Scenario No: 2		Event No. 1
Event Description:		Start the "A" CRD Pump and secure the "B" CRD Pump
Time	Position	Applicants' Actions or Behavior
	CRS	Directs the BOP to establish communication with the CRD Room, then start the "A" CRD pump and when proper operation is established shutdown the "B" CRD Pump.
	BOP	Establish communications between Control Room and CRD pump area.
	BOP	Check the "A" CRD pump is lined up for operation.
	BOP	At Panel 9-5, balance CRD-FIC-301, CRD FLOW CONTROL, and place to MANUAL. Start standby CRD pump.
	BOP	Shut down CRD pump to be removed from service. adjust manual control on CRD-FC-301 to obtain flow of 50 gpm. Balance CRD-FC-301 and place to BAL. At Panel 9-5, check charging water pressure and drive water DP and adjust if needed.

Scenario No: 2		Event No. 2
Event Description: Power Reduction		
Time	Position	Applicants' Actions or Behavior
		The Control Room is contacted by Doniphan and notified that the Cooper south interface load has exceeded 1190 MVA and that an immediate load reduction of 100 Mwe is required.
	CRS	Enters 5.3GRID. Direct an immediate power reduction of 100 Mwe using recirculation flow. Acts as Reactivity Manager.
	RO	Enters 2.1.10, STATION POWER CHANGES - Lowers power by lowering RR pump flow. Maintains rate of power change at 10 MWe per minute - Enters 5.3GRID.
	BOP	Monitors plant parameters. Evaluates which plant loads may be secured.
	CRS	Notifies station management and the system load dispatcher.

Scenario No: 2		Event No. 3
Event Description: DEH Oil System Pressure Oscillation requires stopping power reduction.		
Time	Position	Applicants' Actions or Behavior
		Annunciator B-1/A-6 TURB EH FLUID LOW PRESSURE alarms
	BOP	Determines standby pump starts (both pumps are running). Directs an SO to check the EHC pumps and piping Diagnoses oscillating DEH relief valve from oscillating pressure on DEH pressure indication. Requests SO to verify proper operation of pumps and check for leaks. Remove standby pump from service per 2.2.80.
	CRS	Directs stopping any power changes in progress Directs RO to monitor reactor pressure set Enters 2.4DEH Gives Scram Actions Directs securing one DEH Pump Directs restoring DEH to a normal lineup in accordance with 2.2.80. Initiates a work order for the oscillating DEH Valve.

Scenario No: 2		Event No. 4
Event Description: Recirculation Pump Runback to 20% with power oscillations.		
Time	Position	Applicants' Actions or Behavior
		<p>Annunciators 9-4-3/D-3 RECIRC A FLOW LIMIT alarms 9-4-3/D-7 RECIRC B FLOW LIMIT alarms</p> <p>Followed by: Annunciators 9-5-1/A-4 ROD WITHDRAWAL BLOCK 9-5-1/B-7 LPRM UPSCALE 9-5-1/C-7 LPRM DOWNSCALE 9-5-1/B-8 APRM UPSCALE and others indicating core power oscillations.</p>
	RO	<p>Monitors recirculation flow and reactor power. Attempts to limit the transient by pressing the SCOOPTUBE LOCKOUT buttons. Press RR PUMP RUNBACK RESET button. Determines that feedwater flow is > 20% and RR-MO-53A/B are full open. Monitors for power oscillations. Informs CRS of entry into stability exclusion region. Inserts control rods per Attachment 7, Emergency Power Reduction Rods. When directed by the CRS or the RO determines reactor safety in jeopardy depresses both RX SCRAM buttons (Panel 9-5). Verifies all rods in Monitors nuclear instrumentation: <ul style="list-style-type: none"> - Insert SRM and IRM detectors. - Change APRM recorders to IRMs. - Range IRMs on scale. - Check reactor power is lowering. Verifies <u>all</u> SDV vent and drain valves are closed.</p>
	CRS	<p>Directs RO to press SCOOPTUBE LOCKOUT buttons. Enters 2.4RR, REACTOR RECIRCULATION ABNORMAL Enter Attachment 4 when entry in or near the stability exclusion region is determined. Enters T.S. 3.4.1 Increase speed of operating recirculation pump(s) per Procedure 2.1.10. Insert Emergency Power Reduction Rods per Procedure 10.13. When core power oscillations reach the APRM scram set point directs a MANUAL SCRAM.</p>

Scenario No. 2		Event No. 4 (continued)	
Event Description:		Recirculation Pump Runback to 20% with power oscillations	
Time	Position	Applicant's Actions or Behavior	
	BOP	<p>Monitors secondary plant response.</p> <p>After the reactor is scrammed:</p> <p>Trips one reactor feedwater pump</p> <p>Trips all but one condensate booster pump and condensate pump.</p> <p>Ensure Main turbine automatically trips <u>or</u> manually trip the turbine when main generator output is < 80 Mwe.</p> <p>Diagnoses Loss of Off-Site Power.</p>	

Scenario No: 2		Event No. 5
Event Description: Loss of all off-site power.		
Time	Position	Applicants' Actions or Behavior
		<p>The following annunciators alarm:</p> <p>C-2/D-9 STARTUP XFMR SECONDARY UNDERVOLTAGE</p> <p>C-2/C-9 STARTUP XFMR LOW VOLATAGE</p> <p>C-2/A-1 4160V BUS 1A UNDERVOLTAGE. (and 1B, 1E, 1G, etc.)</p>
	CRS	<p>Enters EMERGENCY PROCEDURE 5.3EMPWR, EMERGENCY POWER and directs actions for a loss of off-site AC power.</p> <p>Establishes a pressure band of 800 to 1000 psig using SRVs.</p> <p>Establishes a RPV level band of 10" to 40".</p> <p>Enters EOP-5A is the loss of power causes a high temperature in the MS Tunnel.</p>
	BOP	<p>Verifies:</p> <p>4160V Buses 1A, 1B, 1C, 1D, and 1E de-energized.</p> <p>Both DGs have started and loaded.</p> <p>4160V Bus 1F/1G energized by emergency source.</p> <p>Monitors DG load to prevent exceeding maximum load (4000 kW and 694 amps; DG may be overloaded to 4400 kW and 763 amps for 2 hours in a 24 hour period).</p> <p>Places DRYWELL REC ISOL VALVE CONTROL switch to OPEN.</p> <p>Throttles open REC HX outlet valve for a HX that was in service, as necessary, to maintain REC-PI-452, REC HEADER PRESSURE, in green band:</p> <p>Ensures the emergency DC lube oil pumps have started</p> <p>Places Condensate and Condensate Booster Pump switches to TRIP.</p> <p>Places Air Compressor "A" or "B" switch to RUN.</p>
	RO	Restores CRD System per Procedure 2.2.8.

Scenario No.: 2		Event No.: 6
Event Description: Small break LOCA with inability to restore RPV water level		
Time	Position	Applicants' Actions or Behavior
	RO/BOP	Monitors RPV water level and Primary Containment parameters. Diagnose LOCA by lowering RPV water level and rising Drywell pressure.
	BOP	Diagnoses HPCI Aux Oil Pump failure. Diagnoses RCIC failure to start. Initiates torus spray. Initiates drywell sprays <ul style="list-style-type: none"> - Shuts down drywell coolers (if operating) - Shuts down recirc pumps - Initiates drywell sprays Throttles drywell spray to prevent torus pressure from dropping to 0 psig. Controls low pressure ECCS to restore and maintain RPV water level between TAF and MSL. Monitors DG load to prevent exceeding maximum load (4000 kW and 694 amps; DG may be overloaded to 4400 kW and 763 amps for 2 hours in a 24 hour period.)
	RO	Inhibits ADS when timer initiates. Controls low pressure ECCS to restore and maintain RPV water level between 15" and 40". Restores REC Re-establishes drywell cooling by re-starting FCUs
	CRS	Enters EOP-1A and 3A Directs attempt to maintain RPV water level between 15" and 40". Directs restoring REC Directs re-establishing Drywell FCUs Directs maximizes CRD flow and initiating SLC pumps. Directs inhibiting ADS Before Torus pressure reached 10 psig directs initiating torus spray. When Torus pressure exceeds 10 psig directs initiating drywell spray. When RPV water level cannot be maintained >-25" enters EOP-2A, EMERGENCY DEPRESSURIZATION. Directs opening six SRVs and controlling low pressure injection to restore level.

Scenario No: 2		Event No. 7
Event Description: RCIC fails to auto start.		
Time	Position	Applicants' Actions or Behavior
	CRS	Directs attempting to manually restore RCIC.
	BOP	<p>Uses RCIC SYSTEM OPERATION HARDCARD to start RCIC.</p> <p>Open RCIC-MO-132.</p> <p>Start GLAND SEAL VACUUM PUMP.</p> <p>Open RCIC-MO-21.</p> <p>Adjust RCIC-FIC-91, RCIC flow controller, as required, to maintain level.</p> <p>Diagnoses RCIC trip on high exhaust pressure.</p>

CRITICAL TASKS	SAT	UNSAT
The Crew shall emergency depressurize when RPV water level cannot be restored and maintained >-25".		
The Crew shall initiate drywell sprays at >10 psig torus pressure and before PSP is exceeded.		
The Crew shall initiate a manual scram when oscillations reach the APRM Scram setpoint.		

1983.

Instructor Station Instructions Scenario #2

SIMULATOR SET-UP

A. Initialize the simulator in IC 20, Full Power Operation (EOL).

1. Transfer to RUN.
2. Load batch file A:\nrc2.
3. Balance all controllers.
4. Place breakers 1FS and 1GS in PTL
5. Ensure PMIS IDTs are blank
6. Red tag breaker C/S for 1FS & 1GS.
7. Clear all annunciators
8. Turn recorder power ON
9. Adjust GAFs

Verify simulator conditions as follows:

B. Triggers

<u>Number</u>	<u>File Name</u>	<u>Description</u>
E1	None	Default to False
E2	None	Default to False
E3	nrc2	Activates when #1 TSV closes
E4	None	Default to False
E5	None	Default to False

C. Malfunctions

<u>Number</u>	<u>Title</u>	<u>Trigger</u>	<u>TD</u>	<u>Severity</u>	<u>Ramp</u>	<u>Initial</u>
RC01	RCIC System Failure to Auto Start	A	0	N/A	N/A	N/A
ED06	Loss of Power, Emergency Transformer	A	0	N/A	N/A	N/A
HP11	HPCI Aux Oil Pump Failure	A	0	N/A	N/A	N/A
ED03B	Transfer Failure	A	0	N/A	N/A	N/A
TC04	DEH Oil System Pressure Oscillation	E1	0	N/A	N/A	N/A
RR12A	“A” RR Pump Runback 20%	E2	0	N/A	N/A	N/A

Instructor Station Instructions Scenario #2

<u>Number</u>	<u>Title</u>	<u>Trigger</u>	<u>TD</u>	<u>Severity</u>	<u>Ramp</u>	<u>Initial</u>
RR12B	“B” RR Pump Runback 20%	E2	0	N/A	N/A	N/A
CR04	Low-Flow Hi-Power Instability	E5	0	80%	3 min	N/A
ED05	Loss of Power Startup Transformer	E3	0	N/A	N/A	N/A
ED07	Loss of Power Normal Transformer	E3	0	N/A	N/A	N/A
ED15	Loss of 12.5 KV power	E3	0	N/A	N/A	N/A
RR20B	Coolant Leak inside the PC	E3	2 min	70	15	N/A
RC02	RCIC Turbine Trip	E4	0	N/A	N/A	N/A

D. Remotes

None

E. Overrides

<u>Instrument</u>	<u>Tag</u>	<u>Trigger</u>	<u>TD</u>	<u>Value</u>	<u>Ramp</u>
RRMG A Scoop Tube lockout P/B	ZDIRRMGSWS16A	A	N/A	OFF	N/A
RRMG B Scoop Tube lockout P/B	ZDIRRMGSWS16B	A	N/A	OFF	N/A
PTM #31 RPS Scram Bypass Jumper	ZDIRPSSCRM JA1 IN	A	N/A	IN	N/A
PTM #32 RPS Scram Bypass Jumper	ZDIRPSSCRM JA2 IN	A	N/A	IN	N/A
PTM #33 RPS Scram Bypass Jumper	ZDIRPSSCRM JB1 IN	A	N/A	IN	N/A
PTM #34 RPS Scram Bypass Jumper	ZDIRPSSCRM JB2 IN	A	N/A	IN	N/A

Simulation Facility Cooper Nuclear Station Scenario No.: 3 Op Test No.: _____

Examiners: _____ Operators: _____ CRS
 _____ RO
 _____ BOP

Initial Conditions: 100% Full Power Operation (EOC) (IC-20).
 Core Spray Pump "B" is out of service

Turnover: See attached turnover sheet

Event No.	Event Type*	Position	Event Description
Pre-insert	N/A		Five SRVs will NOT OPEN
Pre-insert	N/A		Turbine Bypass Valves 1-3 will NOT OPEN
Pre-insert	N/A		Failure of Group Six to automatically isolate
1	N	CRS/BOP	Shutdown SGT "B" and place it in a standby lineup.
2	C	CRS/BOP	125 VDC Panel AA3 failure (Instrument power supplies)
3	R	CRS/RO	Power reduction for T.S. 3.0.3 required shutdown.
4	I	CRS/RO	Loss of Feedwater Master Controller, slowly failing low, requiring manual control of feedwater.
5	M	Crew	HPCI un-isolatable steam line leak (and trip of running feedwater pumps).
6	I	Crew	Failure of the auto isolation of Group 6.
7	C	CRS/BOP	Failure of the Turbine Bypass Valves to remain open and/or failure of up to five SRVs to open.

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

Pre Events

Allow the operators three to five minutes to review the panels and set up the controls and displays as they desire.

Event # 1: Start the "A" CRD Pump and place it in service. Secure the "B" CRD Pump.

ROLE PLAY:

As the AO in the CRD Room report you and a maintenance mechanic are standing by for the pump start.

ROLE PLAY:

Report the following:

- Suction valve full open.
- Minimum flow valve open.
- Discharge valve open.

Simulation Facility Cooper Nuclear Station Scenario No.: 3 Op Test No.: _____

Examiners: _____ Operators: _____ CRS
 _____ RO
 _____ BOP

Initial Conditions: 100% Full Power Operation (EOC) (IC-20).
 Core Spray Pump "B" is out of service

Turnover: See attached turnover sheet

Event No.	Event Type*	Position	Event Description
Pre-insert	N/A		Five SRVs will NOT OPEN
Pre-insert	N/A		Turbine Bypass Valves 1-3 will NOT OPEN
Pre-insert	N/A		Failure of Group Six to automatically isolate
1	N	CRS/BOP	Shutdown SGT "B" and place it in a standby lineup.
2	C	CRS/BOP	125 VDC Panel AA3 failure (Instrument power supplies)
3	R	CRS/RO	Power reduction for T.S. 3.0.3 required shutdown.
4	I	CRS/RO	Loss of Feedwater Master Controller, slowly failing low, requiring manual control of feedwater.
5	M	Crew	HPCI un-isolatable steam line leak (and trip of running feedwater pumps).
6	I	Crew	Failure of the auto isolation of Group 6.
7	C	CRS/BOP	Failure of the Turbine Bypass Valves to remain open and/or failure of up to five SRVs to open.

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

- Pump and motor oil levels normal.
- Pump casing and suction filter vented.

ROLE PLAY:

From the CRD Pump room report that the "A" CRD Pump is operating normally.

Event #2: Power Reduction

ROLE PLAY:

When the crew has placed the A CRD Pump in service and secured the B CRD Pump contact the Control Room as Doniphan and notify the CRS the Cooper south interface load has exceeded 1190 MVA and that an immediate load reduction of 100 Mwe is required.

Simulation Facility Cooper Nuclear Station Scenario No.: 3 Op Test No.: _____

Examiners: _____ Operators: _____ CRS
 _____ RO
 _____ BOP

Initial Conditions: 100% Full Power Operation (EOC) (IC-20).
 Core Spray Pump "B" is out of service

Turnover: See attached turnover sheet

Event No.	Event Type*	Position	Event Description
Pre-insert	N/A		Five SRVs will NOT OPEN
Pre-insert	N/A		Turbine Bypass Valves 1-3 will NOT OPEN
Pre-insert	N/A		Failure of Group Six to automatically isolate
1	N	CRS/BOP	Shutdown SGT "B" and place it in a standby lineup.
2	C	CRS/BOP	125 VDC Panel AA3 failure (Instrument power supplies)
3	R	CRS/RO	Power reduction for T.S. 3.0.3 required shutdown.
4	I	CRS/RO	Loss of Feedwater Master Controller, slowly failing low, requiring manual control of feedwater.
5	M	Crew	HPCI un-isolatable steam line leak (and trip of running feedwater pumps).
6	I	Crew	Failure of the auto isolation of Group 6.
7	C	CRS/BOP	Failure of the Turbine Bypass Valves to remain open and/or failure of up to five SRVs to open.

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

Event #3: DEH Oil System Pressure Oscillation requires stopping power reduction.

ACTION: When directed by the Chief Examiner Activate Trigger E1: DEH Oil Pressure Oscillation

ROLE PLAY:

Simulation Facility Cooper Nuclear Station Scenario No.: 3 Op Test No.: _____

Examiners: _____ Operators: _____ CRS
 _____ RO
 _____ BOP

Initial Conditions: 100% Full Power Operation (EOC) (IC-20).
 Core Spray Pump "B" is out of service

Turnover: See attached turnover sheet

Event No.	Event Type*	Position	Event Description
Pre-insert	N/A		Five SRVs will NOT OPEN
Pre-insert	N/A		Turbine Bypass Valves 1-3 will NOT OPEN
Pre-insert	N/A		Failure of Group Six to automatically isolate
1	N	CRS/BOP	Shutdown SGT "B" and place it in a standby lineup.
2	C	CRS/BOP	125 VDC Panel AA3 failure (Instrument power supplies)
3	R	CRS/RO	Power reduction for T.S. 3.0.3 required shutdown.
4	I	CRS/RO	Loss of Feedwater Master Controller, slowly failing low, requiring manual control of feedwater.
5	M	Crew	HPCI un-isolatable steam line leak (and trip of running feedwater pumps).
6	I	Crew	Failure of the auto isolation of Group 6.
7	C	CRS/BOP	Failure of the Turbine Bypass Valves to remain open and/or failure of up to five SRVs to open.

*(N)ormal, (R)eactivity (I)nstrument, (C)omponent, (M)ajor Transient
 As SO sent to DEH area; report that the discharge relief valve is periodically lifting.
 Report that there are no leaks.
 When the standby pump has been started and the oscillating pump shutdown, report all conditions are normal.

NOTE:

Delete the malfunction when the B DEH Pump is secured

Event #4: Recirculation Pump Runback to 20% with power oscillations.

ACTION: When directed by the Chief Examiner Activate Trigger E2: Recirculation Pump Runback

ROLE PLAY:

Simulation Facility Cooper Nuclear Station Scenario No.: 3 Op Test No.: _____

Examiners: _____ Operators: _____ CRS

_____ RO

_____ BOP

Initial Conditions: 100% Full Power Operation (EOC) (IC-20).
Core Spray Pump "B" is out of service

Turnover: See attached turnover sheet

Event No.	Event Type*	Position	Event Description
Pre-insert	N/A		Five SRVs will NOT OPEN
Pre-insert	N/A		Turbine Bypass Valves 1-3 will NOT OPEN
Pre-insert	N/A		Failure of Group Six to automatically isolate
1	N	CRS/BOP	Shutdown SGT "B" and place it in a standby lineup.
2	C	CRS/BOP	125 VDC Panel AA3 failure (Instrument power supplies)
3	R	CRS/RO	Power reduction for T.S. 3.0.3 required shutdown.
4	I	CRS/RO	Loss of Feedwater Master Controller, slowly failing low, requiring manual control of feedwater.
5	M	Crew	HPCI un-isolatable steam line leak (and trip of running feedwater pumps).
6	I	Crew	Failure of the auto isolation of Group 6.
7	C	CRS/BOP	Failure of the Turbine Bypass Valves to remain open and/or failure of up to five SRVs to open.

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

If contacted as Reactor Engineering, request the CRS to wait five minutes while you run some computer analysis to determine the correct rod sequence to use for a power reduction.

ACTION: After the CRS has determined the T.S. Entry (3.4.1) Active Trigger E5: Power Oscillations.

NOTE:

The LOOP and small break LOCA (LOCA is on a time delay and ramp) are automatically triggered by the Main Turbine Stop Valves leaving the full open position when the turbine is tripped following the reactor scram.

Event #5: Loss of Off-Site Power.

ROLE PLAY:

If sent to the Diesel Generators as the SO to check the DGs report that they are operating normally.

Simulation Facility Cooper Nuclear Station Scenario No.: 3 Op Test No.: _____

Examiners: _____ Operators: _____ CRS
 _____ RO
 _____ BOP

Initial Conditions: 100% Full Power Operation (EOC) (IC-20).
 Core Spray Pump "B" is out of service

Turnover: See attached turnover sheet

Event No.	Event Type*	Position	Event Description
Pre-insert	N/A		Five SRVs will NOT OPEN
Pre-insert	N/A		Turbine Bypass Valves 1-3 will NOT OPEN
Pre-insert	N/A		Failure of Group Six to automatically isolate
1	N	CRS/BOP	Shutdown SGT "B" and place it in a standby lineup.
2	C	CRS/BOP	125 VDC Panel AA3 failure (Instrument power supplies)
3	R	CRS/RO	Power reduction for T.S. 3.0.3 required shutdown.
4	I	CRS/RO	Loss of Feedwater Master Controller, slowly failing low, requiring manual control of feedwater.
5	M	Crew	HPCI un-isolatable steam line leak (and trip of running feedwater pumps).
6	I	Crew	Failure of the auto isolation of Group 6.
7	C	CRS/BOP	Failure of the Turbine Bypass Valves to remain open and/or failure of up to five SRVs to open.

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

Event #6: Small break LOCA resulting in an inability to restore RPV water level requiring Emergency Depressurization.

Event #7: RCIC fails to auto start then (when manually started) trips on high exhaust pressure.

Simulation Facility Cooper Nuclear Station Scenario No.: 3 Op Test No.: _____

Examiners: _____ Operators: _____ CRS
 _____ RO
 _____ BOP

Initial Conditions: 100% Full Power Operation (EOC) (IC-20).
 Core Spray Pump "B" is out of service

Turnover: See attached turnover sheet

Event No.	Event Type*	Position	Event Description
Pre-insert	N/A		Five SRVs will NOT OPEN
Pre-insert	N/A		Turbine Bypass Valves 1-3 will NOT OPEN
Pre-insert	N/A		Failure of Group Six to automatically isolate
1	N	CRS/BOP	Shutdown SGT "B" and place it in a standby lineup.
2	C	CRS/BOP	125 VDC Panel AA3 failure (Instrument power supplies)
3	R	CRS/RO	Power reduction for T.S. 3.0.3 required shutdown.
4	I	CRS/RO	Loss of Feedwater Master Controller, slowly failing low, requiring manual control of feedwater.
5	M	Crew	HPCI un-isolatable steam line leak (and trip of running feedwater pumps).
6	I	Crew	Failure of the auto isolation of Group 6.
7	C	CRS/BOP	Failure of the Turbine Bypass Valves to remain open and/or failure of up to five SRVs to open.

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

ACTION:

When the following conditions are reached, place the simulator in **FREEZE**.

- RPV Water level is being controlled above + 3".
- Drywell pressure is being maintained below 10 psig.

Simulation Facility Cooper Nuclear Station Scenario No.: 3 Op Test No.: _____

Examiners: _____ Operators: _____ CRS
 _____ RO
 _____ BOP

Initial Conditions: 100% Full Power Operation (EOC) (IC-20).
 Core Spray Pump "B" is out of service

Turnover: See attached turnover sheet

Event No.	Event Type*	Position	Event Description
Pre-insert	N/A		Five SRVs will NOT OPEN
Pre-insert	N/A		Turbine Bypass Valves 1-3 will NOT OPEN
Pre-insert	N/A		Failure of Group Six to automatically isolate
1	N	CRS/BOP	Shutdown SGT "B" and place it in a standby lineup.
2	C	CRS/BOP	125 VDC Panel AA3 failure (Instrument power supplies)
3	R	CRS/RO	Power reduction for T.S. 3.0.3 required shutdown.
4	I	CRS/RO	Loss of Feedwater Master Controller, slowly failing low, requiring manual control of feedwater.
5	M	Crew	HPCI un-isolatable steam line leak (and trip of running feedwater pumps).
6	I	Crew	Failure of the auto isolation of Group 6.
7	C	CRS/BOP	Failure of the Turbine Bypass Valves to remain open and/or failure of up to five SRVs to open.

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

Simulation Facility Cooper Nuclear Station Scenario No.: 3 Op Test No.: _____

Examiners: _____ Operators: _____ CRS
 _____ RO
 _____ BOP

Initial Conditions: 100% Full Power Operation (EOC) (IC-20).
 Core Spray Pump "B" is out of service

Turnover: See attached turnover sheet

Event No.	Event Type*	Position	Event Description
Pre-insert	N/A		Five SRVs will NOT OPEN
Pre-insert	N/A		Turbine Bypass Valves 1-3 will NOT OPEN
Pre-insert	N/A		Failure of Group Six to automatically isolate
1	N	CRS/BOP	Shutdown SGT "B" and place it in a standby lineup.
2	C	CRS/BOP	125 VDC Panel AA3 failure (Instrument power supplies)
3	R	CRS/RO	Power reduction for T.S. 3.0.3 required shutdown.
4	I	CRS/RO	Loss of Feedwater Master Controller, slowly failing low, requiring manual control of feedwater.
5	M	Crew	HPCI un-isolatable steam line leak (and trip of running feedwater pumps).
6	I	Crew	Failure of the auto isolation of Group 6.
7	C	CRS/BOP	Failure of the Turbine Bypass Valves to remain open and/or failure of up to five SRVs to open.

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

imf rc01

imf ed06

imf hp11

imf tc04(1)

imf rr12a(2)

imf rr12b(2)

imf cr04(2 2:00)80 3:00 **Put this on a separate trigger (E5 and remove the TD)**

imf ed03b

imf ed05(3)

imf ed07(3)

imf ed15(3)

imf rr20b(3 2:00) 70 15:00

imf rc02(4)

Simulation Facility Cooper Nuclear Station Scenario No.: 3 Op Test No.: _____

Examiners: _____ Operators: _____ CRS
 _____ RO
 _____ BOP

Initial Conditions: 100% Full Power Operation (EOC) (IC-20).
 Core Spray Pump "B" is out of service

Turnover: See attached turnover sheet

Event No.	Event Type*	Position	Event Description
Pre-insert	N/A		Five SRVs will NOT OPEN
Pre-insert	N/A		Turbine Bypass Valves 1-3 will NOT OPEN
Pre-insert	N/A		Failure of Group Six to automatically isolate
1	N	CRS/BOP	Shutdown SGT "B" and place it in a standby lineup.
2	C	CRS/BOP	125 VDC Panel AA3 failure (Instrument power supplies)
3	R	CRS/RO	Power reduction for T.S. 3.0.3 required shutdown.
4	I	CRS/RO	Loss of Feedwater Master Controller, slowly failing low, requiring manual control of feedwater.
5	M	Crew	HPCI un-isolatable steam line leak (and trip of running feedwater pumps).
6	I	Crew	Failure of the auto isolation of Group 6.
7	C	CRS/BOP	Failure of the Turbine Bypass Valves to remain open and/or failure of up to five SRVs to open.

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

IOR ZDIRPSSCRMJA1 IN
 IOR ZDIRPSSCRMJA2 IN
 IOR ZDIRPSSCRMJB1 IN
 IOR ZDIRPSSCRMJB2 IN

ior zdirrmgsws16a off
 ior zdirrmgsws16b off

trgset 3 "zlotclsv1[2] == 1"

^set up trigger 3 to activate when the #1 TSV is closed

Simulation Facility Cooper Nuclear **Turnover information** Op Test No.: _____

Examiners: _____ Scenario Operators: _____ CRS
 _____ RO
 _____ BOP

Initial Conditions: 100% Full Power Operation (EOC) (IC-20).
 Core Spray Pump "B" is out of service

Turnover: See attached turnover sheet

Event No.	Event Type*	Position	Event Description
Pre-insert	N/A		Five SRVs will NOT OPEN
Pre-insert	N/A		Turbine Bypass Valves 1-3 will NOT OPEN
Pre-insert	N/A		Failure of Group Six to automatically isolate
1	N	CRS/BOP	Shutdown SGT "B" and place it in a standby lineup.
2	C	CRS/BOP	125 VDC Panel AA3 failure (Instrument power supplies)
3	R	CRS/RO	Power reduction for T.S. 3.0.3 required shutdown.
4	I	CRS/RO	Loss of Feedwater Master Controller, slowly failing low, requiring manual control of feedwater.
5	M	Crew	HPCI un-isolatable steam line leak (and trip of running feedwater pumps).
6	I	Crew	Failure of the auto isolation of Group 6.
7	C	CRS/BOP	Failure of the Turbine Bypass Valves to remain open and/or failure of up to five SRVs to open.

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

Simulation Facility Cooper Nuclear **Turnover information** Op Test No.: _____

Examiners: _____ Scenario Operators: _____ CRS
 _____ RO
 _____ BOP

Initial Conditions: 100% Full Power Operation (EOC) (IC-20).
 Core Spray Pump "B" is out of service

Turnover: See attached turnover sheet

Event No.	Event Type*	Position	Event Description
Pre-insert	N/A		Five SRVs will NOT OPEN
Pre-insert	N/A		Turbine Bypass Valves 1-3 will NOT OPEN
Pre-insert	N/A		Failure of Group Six to automatically isolate
1	N	CRS/BOP	Shutdown SGT "B" and place it in a standby lineup.
2	C	CRS/BOP	125 VDC Panel AA3 failure (Instrument power supplies)
3	R	CRS/RO	Power reduction for T.S. 3.0.3 required shutdown.
4	I	CRS/RO	Loss of Feedwater Master Controller, slowly failing low, requiring manual control of feedwater.
5	M	Crew	HPCI un-isolatable steam line leak (and trip of running feedwater pumps).
6	I	Crew	Failure of the auto isolation of Group 6.
7	C	CRS/BOP	Failure of the Turbine Bypass Valves to remain open and/or failure of up to five SRVs to open.

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

Simulation Facility Cooper Nuclear **Turnover information** Op Test No.: _____

Examiners: _____ Scenario Operators: _____ CRS
 _____ RO
 _____ BOP

Initial Conditions: 100% Full Power Operation (EOC) (IC-20).
 Core Spray Pump "B" is out of service

Turnover: See attached turnover sheet

Event No.	Event Type*	Position	Event Description
Pre-insert	N/A		Five SRVs will NOT OPEN
Pre-insert	N/A		Turbine Bypass Valves 1-3 will NOT OPEN
Pre-insert	N/A		Failure of Group Six to automatically isolate
1	N	CRS/BOP	Shutdown SGT "B" and place it in a standby lineup.
2	C	CRS/BOP	125 VDC Panel AA3 failure (Instrument power supplies)
3	R	CRS/RO	Power reduction for T.S. 3.0.3 required shutdown.
4	I	CRS/RO	Loss of Feedwater Master Controller, slowly failing low, requiring manual control of feedwater.
5	M	Crew	HPCI un-isolatable steam line leak (and trip of running feedwater pumps).
6	I	Crew	Failure of the auto isolation of Group 6.
7	C	CRS/BOP	Failure of the Turbine Bypass Valves to remain open and/or failure of up to five SRVs to open.

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