



## JOB PERFORMANCE MEASURE (JPM)

SITE: PRAIRIE ISLAND

JPM TITLE: RESPOND TO UNCONTROLLED ROD INSERTION

JPM NUMBER: RD-7SF REV. 0

RELATED PRA  
INFORMATION: NONETASK NUMBERS /  
TASK TITLE(S): CRO 001 021 01 01 000 / SHIFT ROD CONTROL FROM AUTO TO MANUAL  
CRO 001 ATI 00 00 004 / UNCONTROLLED ROD MOTION

K/A NUMBERS: 001 A4.03 (4.0/3.7)

## APPLICABLE METHOD OF TESTING:

Discussion: ☐ Simulate/walkthrough: ☐ Perform: ☒EVALUATION LOCATION: In-Plant: ☐ Control Room: ☐Simulator: ☒ Other: ☐Lab: ☐Time for Completion: 11 Minutes Time Critical: NOAlternate Path: YESTASK APPLICABILITY: SRO: ☒ RO: ☒ NLO ☐

Additional site-specific signatures may be added as desired.

<b>Developed by:</b>	<b>Shawn Sarrasin</b>	<b>1/11/2014</b>
	Developer	Date
<b>Validated by:</b>	<b>Fredrick Collins</b>	<b>1/18/2014</b>
	Validator	Date
	(See JPM Validation Checklist, Attachment 1)	
<b>Approved by:</b>	<b>Travis Ouret</b>	<b>7/18/2014</b>
	Training Supervisor	Date

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.

## RD-7SF, RESPOND TO UNCONTROLLED ROD INSERTION, REV. 0

JPM Number: RD-7SFJPM Title: RESPOND TO UNCONTROLLED ROD INSERTION

Examinee: \_\_\_\_\_ Evaluator: \_\_\_\_\_

Job Title: \_\_\_\_\_ Date: \_\_\_\_\_

Start Time \_\_\_\_\_ Finish Time \_\_\_\_\_

PERFORMANCE RESULTS:

SAT: UNSAT: **COMMENTS/FEEDBACK: (Make written comments for any steps graded unsatisfactory).****EVALUATOR'S SIGNATURE:** \_\_\_\_\_

*NOTE: Only this page needs to be retained in examinee's record if completed satisfactorily. If unsatisfactory performance is demonstrated, the entire JPM should be retained.*

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.

**RD-7SF, RESPOND TO UNCONTROLLED ROD INSERTION, REV. 0****JPM BRIEFING/TURNOVER**

*You may use any approved reference materials normally available including logs. Make all written reports, oral reports, and log entries as if the evolution is actually being performed.*

*EOP Immediate Actions are required to be performed from memory. After completing immediate action steps without using the procedure, you may then use any approved reference materials.*

*If this JPM is performed on the simulator, the JPM administrator should only give cues that are not indicated on the simulator. If simulator indication is sufficient to indicate the completion of a step, the JPM administrator should not have to give a cue to the trainee to continue the evolution.*

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

**DURING THE JPM, ENSURE PROPER SAFETY PRECAUTIONS, FME, AND/OR RADIOLOGICAL CONCERNS AS APPLICABLE ARE FOLLOWED.****INITIAL CONDITIONS:**

- Unit 1 is at 50% power (272 MW).
- You are the Unit 1 Reactor Operator.
- A pre-job brief between the RO and SS is complete.

**INITIATING CUES:**

- The SS directs you to place rod control in manual using Section 5.5 of 1C5, CONTROL ROD AND ROD POSITION INDICATION SYSTEMS, and step rods IN one step to lower Tavg 0.6°F.

## RD-7SF, RESPOND TO UNCONTROLLED ROD INSERTION, REV. 0

JPM PERFORMANCE INFORMATION**Required Materials:** NONE**General References:** 1C5, CONTROL ROD AND ROD POSITION INDICATION SYSTEMS  
1C5 AOP1, UNCONTROLLED ROD MOTION**Task Standards:** Examinee recognizes uncontrolled rod insertion and places rod control in manual prior to Bank D reaching the Rod Insertion Limit.**Start Time:** \_\_\_\_\_

**NOTE:** When providing “Evaluator Cues” to the examinee, care must be exercised to avoid prompting the examinee. Typically cues are only provided when the examinee’s actions warrant receiving the information (i.e., the examinee looks or asks for the indication).

**IMPORTANT:** Critical steps are marked with a “Y” below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM, per FP-T-SAT-73, Licensed Operator Requalification Program Examinations.

<b>Performance Step:</b>	1C5 Step 5.5.1
<b>Critical <u>N</u></b>	Verify automatic control rod withdrawal or insertion is NOT required.
<b>Standard:</b>	Examinee verifies RODS OUT ANALOG (44181) and RODS IN ANALOG (44183) lights are NOT lit.
<b>Performance:</b>	SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/>
<b>Comments:</b>	_____

<b>Performance Step:</b>	1C5 Step 5.5.2
<b>Critical <u>Y</u></b>	Transfer CS-46280, ROD BANK SELECTOR, to “MAN”.
<b>Standard:</b>	Examinee places CS-46280 to manual.
<b>Performance:</b>	SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/>
<b>Comments:</b>	_____

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## RD-7SF, RESPOND TO UNCONTROLLED ROD INSERTION, REV. 0

Performance Step:	1C5 Step 5.5.3
Critical <u>Y</u>	Adjust Control Rod Bank to desired position, using CS-46281, DIGITAL ROD CONTROL.
Standard:	Examinee places CS-46281 to IN and releases after 1 rod step.
Performance:	SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/>
Comments:	_____

Performance Step:	1C5 Step 5.5.4
Critical <u>N</u>	Verify NO rod control demand signals present.
Standard:	Examinee verifies RODS OUT ANALOG (44181) and RODS IN ANALOG (44183) lights are NOT lit.
Performance:	SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/>
Comments:	_____

Performance Step:	1C5 Step 5.5.5
Critical <u>Y</u>	Return CS-46280, ROD BANK SELECTOR, to "AUTO".
Standard:	Examinee places CS-46280 in auto.
Evaluator Note:	After CS-46280 is placed in AUTO, then enter <i>Trigger 1</i> to cause a continuous rod insertion on bank D.
Performance:	SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/>
Comments:	_____

**ALTERNATE PATH STARTS HERE**

## RD-7SF, RESPOND TO UNCONTROLLED ROD INSERTION, REV. 0

Performance Step:	1C5 AOP1 Step 1
Critical <u>N</u>	Check Generator Electrical Load - STABLE
Standard:	Examinee verifies Generator Electrical Load is stable.
Performance:	SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/>
Comments:	_____

Performance Step:	1C5 AOP1 Step 2
Critical <u>Y</u>	Place Rod Bank Selector Switch to "MANUAL"
Standard:	Examinee places CS-46280 in manual.
Performance:	SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/>
Comments:	_____

Performance Step:	1C5 AOP1 Step 3
Critical <u>N</u>	Check Rod Motion - STOPPED
Standard:	Examinee determines rod motion is stopped.
Evaluator Note:	Examinee should determine the cause for uncontrolled rod motion (1C5 AOP1 Step 4)
Performance:	SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/>
Comments:	_____

**Terminating Cues:** When the examinee has recognized the uncontrolled rod insertion and has placed CS-46280 in manual, then this JPM is complete.

**Stop Time:** \_\_\_\_\_

Retention: Life of Plant

Retain in: Training Record

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## TURNOVER SHEET

### INITIAL CONDITIONS:

- Unit 1 is at 50% power (272 MW).
- You are the Unit 1 Reactor Operator.
- A pre-job brief between the RO and SS is complete.

### INITIATING CUES:

- The SS directs you to place rod control in manual using Section 5.5 of 1C5, CONTROL ROD AND ROD POSITION INDICATION SYSTEMS, and step rods IN one step to lower Tavg 0.6°F.

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**RD-7SF, RESPOND TO UNCONTROLLED ROD INSERTION, REV. 0****Simulator Setup:**

1. If available, reset the simulator to IC-268 and place in RUN.
2. If IC-268 is NOT available:
  - a. Reset to IC-8.
  - b. Place the simulator in RUN.
  - c. Place ALL Pressurizer Heaters in ON.
  - d. Place CS-46280, ROD BANK SELECTOR, to MANUAL.
  - e. Withdraw Bank D rods 1 step using CS-46281, DIGITAL ROD CONTROL.
  - f. Verify NO rod control demand signals are present.
  - g. Place CS-46280, ROD BANK SELECTOR, to AUTO.
3. If available, run schedule file **RD-7SF.sch** as follows:
  - a. Select open file in the Schedule application.
  - b. Locate schedule file.
  - c. Open schedule file by double clicking it.
  - d. Run the schedule file by pressing the "Stopped" button on the toolbar.
  - e. Verify the schedule file is running.
4. If schedule file is NOT available, then insert malfunctions, remotes, and overrides, as specified by the Simulator Input Summary below.
5. Verify that control rod step counters on C panel and ERCS RBU matches the IC conditions.
6. Set up CONC and R05 ERCS terminals to "QP-LOADFOLL".
7. After CS-46280, ROD BANK SELECTOR, is placed in AUTO, then enter ***Trigger 1***.

**SIMULATOR INPUT SUMMARY**

@Time	Event	Action	Description
	1	Insert malfunction RX07A on event 1	REACTOR COOLANT TC TRANSMITTER TE-401B FAILS HIGH

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## RD-7SF, RESPOND TO UNCONTROLLED ROD INSERTION, REV. 0

## ATTACHMENT 1

## JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

ALL STEPS IN THIS CHECKLIST ARE TO BE PERFORMED UPON INITIAL VALIDATION AND PRIOR TO USE.

REVIEW STATEMENTS	YES	NO	N/A
1. Are all items on the cover page filled in correctly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2. Has the JPM been reviewed and validated by SMEs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Can the required conditions for the JPM be appropriately established in the simulator if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Do the performance steps accurately reflect trainee's actions in accordance with plant procedures?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5. Is the standard for each performance item specific as to what controls, indications and ranges are required to evaluate if the trainee properly performed the step?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6. If the task is NOT time critical, has the completion time been established based on validation data or incumbent experience?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. If the task is time critical, is the time critical portion based upon actual task performance requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Is the Licensee level appropriate for the task being evaluated if required? Not applicable to Non-Licensed Operators	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Is the K/A appropriate to the task and to the licensee level if required? Not applicable to Non-Licensed Operators	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Have the performance steps been identified and typed (Critical / Sequence / Time Critical) appropriately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
11. Have all special tools and equipment needed to perform the task been identified?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
12. Are all references identified, current, and accurate?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
13. Have all required cues (as anticipated) been identified for the evaluator to assist task completion?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

All applicable questions must be answered "YES" or the JPM is not valid for use. If all applicable questions are answered "YES" then the JPM is considered valid and can be performed as written. The individual(s) performing the validation sign and date this form.

\_\_\_\_\_  
Validation Personnel /Date

\_\_\_\_\_  
Validation Personnel/Date

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Validation Personnel /Date

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Validation Personnel/Date

Retention: Life of Plant

Retain in: Training Record

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<b>C</b>	<b>UNCONTROLLED ROD MOTION</b>	<b>NUMBER:</b> <b>1C5 AOP1</b>
		<b>REV.</b> <b>9</b>
		<b>Page 1 of 5</b>

**LEVEL OF USE**

<b>REFERENCE USE</b>
<ul style="list-style-type: none"><li>• Procedure segments may be performed from memory.</li><li>• Use the procedure to verify the segments are complete.</li><li>• Mark off steps within the segment before continuing.</li><li>• Procedure should be available at the work location.</li></ul>

<b>PORC REVIEW DATE:</b> <b>12/2/10</b>	<b>OWNER:</b> <b>D. Smith</b>	<b>EFFECTIVE DATE</b> <b>12/2/10</b>
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<b>C</b>	<b>UNCONTROLLED ROD MOTION</b>	NUMBER: <b>1C5 AOP1</b>
		REV. <b>9</b>
		Page 2 of 5

**A. PURPOSE**

The purpose of this procedure is to provide operator guidance during unwarranted insertion or withdrawal of one or more RCCAs. Unwarranted rod motion is rod motion occurring for reasons other than core reactivity change or turbine load change (i.e., instrument failure, rod control failure, operator error) and typically is at a high rod speed.

**B. ENTRY CONDITIONS**

This procedure is entered upon unexpected rod motion occurring at a high insertion or withdrawal rate.

**C. ATTACHMENTS**

NONE

**D. REFERENCES****1. Developmental References**

- a. Rod Control System Technical Manual, XH-1-1383 Volumes 1, 2, and 3
- b. Technical Manual: XH-1-1202, Magnetic Control Rod Drive Mechanism Instruction Book for Model L-106A Mechanism
- c. Logic Diagrams: XH-1-236, XH-1-237, XH-1-238, XH-1-239, XH-1-243

**2. Implementing References**

- a. Technical Specifications
- b. 1E-0, Reactor Trip or Safety Injection
- c. 1C5, Rod Control and Rod Position Indication Systems
- d. 1C51, Instrument Failure Guide
- e. 1C23 AOP1, Auto Turbine Runback
- f. 1C23 AOP2, Malfunction of Turbine EH Control System
- g. SWI O-28, Notification of Operations Manager and NRC Resident Inspector

<b>C</b>	<b>UNCONTROLLED ROD MOTION</b>	NUMBER: <b>1C5 AOP1</b>
		REV. <b>9</b>
		Page 3 of 5

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
	<b>1. Check Generator Electrical Load - STABLE</b>	Go to the appropriate procedure: <ul style="list-style-type: none"> <li>1C23 AOP1, Auto Turbine Runback</li> </ul> -OR- <ul style="list-style-type: none"> <li>1C23 AOP2, Malfunction of Turbine Control System</li> </ul> -OR- <ul style="list-style-type: none"> <li>C20.3 AOP12, Grid Voltage or Frequency Disturbances</li> </ul> -OR- <ul style="list-style-type: none"> <li>Appropriate alarm response procedure for secondary system induced transient</li> </ul>
	<b>2. Place Rod Bank Selector Switch To "MANUAL"</b>	
	<b>3. Check Rod Motion - STOPPED</b>	Perform the following: <ol style="list-style-type: none"> <li>Manually trip the reactor.</li> <li>Go to 1E-0, Reactor Trip or Safety Injection.</li> </ol>
	<b>4. Check For Failed Instrument:</b> <ul style="list-style-type: none"> <li>NIS power range channels - ALL IN AGREEMENT</li> <li>RCS loop Tavg channels - ALL IN AGREEMENT</li> <li>Turbine impulse pressure 1PT-485 - NORMAL FOR POWER</li> </ul>	Go to the appropriate procedure: <ul style="list-style-type: none"> <li>1C51, Instrument Failure Guide</li> </ul> -OR- <ul style="list-style-type: none"> <li>1C20.8 AOP1, Abnormal Operation, Instrument AC Inverters</li> </ul>

C	UNCONTROLLED ROD MOTION	NUMBER: 1C5 AOP1
		REV. 9
		Page 4 of 5

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
	<p>Δ 5 <b>Check Tavg And Tref - MATCHED WITHIN 1° F</b></p>	<p>Perform the following as necessary to match Tave and Tref:</p> <ul style="list-style-type: none"> <li>• Adjust control rod position using 1 or 2 step increments.</li> <li>• Adjust RCS boron concentration</li> <li>• Adjust turbine load</li> </ul>
	<p><b>6. Verify Compliance With Technical Specification:</b></p> <ul style="list-style-type: none"> <li>• LCO 3.1.1, Shutdown Margin (SDM)</li> <li>• LCO 3.1.4, Rod Group Alignment Limits</li> <li>• LCO 3.1.5, Shutdown Bank Insertion Limits</li> <li>• LCO 3.1.6, Control Bank Insertion Limits</li> <li>• LCO 3.2.3, Axial Flux Difference (AFD)</li> <li>• LCO 3.2.4, Quadrant Power Tilt Ratio (QPTR)</li> </ul>	
	<p><b>7. Verify SWI O-28 Notifications Complete</b></p>	

**C****UNCONTROLLED ROD MOTION**

NUMBER:

**1C5 AOP1**

REV.

**9**

Page 5 of 5

**STEP****ACTION/EXPECTED RESPONSE****RESPONSE NOT OBTAINED****8. Check If Auto Rod Control Can Be Restored:****a. Check the following:**

- Cause of rod control motion -  
CORRECTED
- Tavg and Tref - MATCHED  
WITHIN 1° F
- Delta I - NORMAL

**b. Place rod control to "AUTO" per  
1C5, Rod Control and Rod Position  
Indication Systems****a. WHEN conditions restored, THEN  
continue with Step 8b.****-END-**

C	CONTROL ROD AND ROD POSITION INDICATION SYSTEMS	NUMBER:  1C5
		REV: 19
		Page 13 of 32

## 5.5 Manual Rod Control

<b>REFERENCE USE</b>
<ul style="list-style-type: none"> <li>• <i>Procedure segments may be performed from memory.</i></li> <li>• <i>Use the procedure to verify segments are complete.</i></li> <li>• <i>Mark off steps within segment before continuing.</i></li> <li>• <i>Procedure should be available at the work location.</i></li> </ul>

<b>NOTE:</b>	On occasion, manual control rod movement may be necessary due to rods moving in response to an automatic rod control signal. The following steps provide guidance to restore control rods to the desired position.
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**5.5.1**    **Verify** automatic control rod withdrawal or insertion is NOT required.

---

**5.5.2**    **Transfer CS-46280**, ROD BANK SELECTOR, to "MAN".

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**5.5.3**    **Adjust** Control Rod Bank to desired position, using **CS-46281**, DIGITAL ROD CONTROL


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**5.5.4**    **Verify** NO rod control demand signals present.

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**5.5.5**    **Return CS-46280**, ROD BANK SELECTOR, to "AUTO".

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	JOB PERFORMANCE MEASURE (JPM)
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**SITE:** PRAIRIE ISLAND

**JPM TITLE:** CONTAINMENT ISOLATION ACTUATION FAILURE

**JPM NUMBER:** CI-1S **REV.** 0

**RELATED PRA INFORMATION:** LOCA (5.1%)

**TASK NUMBERS / TASK TITLE(S):** CRO 301 001 06 01 000 / REACTOR TRIP OR SAFETY INJECTION

**K/A NUMBERS:** 011 EA1.07 (4.4/4.4)

**APPLICABLE METHOD OF TESTING:**

Discussion: ☐ Simulate/walkthrough: ☐ Perform: ☒

**EVALUATION LOCATION:** In-Plant: ☐ Control Room: ☐

Simulator: ☒ Other: ☐

Lab: ☐

Time for Completion: 6 Minutes Time Critical: NO

Alternate Path: NO

**TASK APPLICABILITY:** SRO: ☒ RO: ☒ NLO ☐

Additional site-specific signatures may be added as desired.

<b>Developed by:</b>	<b>Shawn Sarrasin</b>	<b>1/11/2014</b>
	Developer	Date
<b>Validated by:</b>	<b>Fredrick Collins</b>	<b>1/18/2014</b>
	Validator	Date
	(See JPM Validation Checklist, Attachment 1)	
<b>Approved by:</b>	<b>Travis Ouret</b>	<b>7/18/2014</b>
	Training Supervisor	Date

Retention: Life of Plant

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## CI-1S, CONTAINMENT ISOLATION ACTUATION FAILURE, REV. 0

JPM Number: CI-1SJPM Title: CONTAINMENT ISOLATION ACTUATION FAILURE

Examinee: \_\_\_\_\_ Evaluator: \_\_\_\_\_

Job Title: \_\_\_\_\_ Date: \_\_\_\_\_

Start Time \_\_\_\_\_ Finish Time \_\_\_\_\_

PERFORMANCE RESULTS:

SAT: UNSAT: **COMMENTS/FEEDBACK: (Make written comments for any steps graded unsatisfactory).****EVALUATOR'S SIGNATURE:** \_\_\_\_\_

*NOTE: Only this page needs to be retained in examinee's record if completed satisfactorily. If unsatisfactory performance is demonstrated, the entire JPM should be retained.*

Retention: Life of Plant

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**CI-1S, CONTAINMENT ISOLATION ACTUATION FAILURE, REV. 0****JPM BRIEFING/TURNOVER**

*You may use any approved reference materials normally available including logs. Make all written reports, oral reports, and log entries as if the evolution is actually being performed.*

*EOP Immediate Actions are required to be performed from memory. After completing immediate action steps without using the procedure, you may then use any approved reference materials.*

*If this JPM is performed on the simulator, the JPM administrator should only give cues that are not indicated on the simulator. If simulator indication is sufficient to indicate the completion of a step, the JPM administrator should not have to give a cue to the trainee to continue the evolution.*

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

**DURING THE JPM, ENSURE PROPER SAFETY PRECAUTIONS, FME, AND/OR RADIOLOGICAL CONCERNS AS APPLICABLE ARE FOLLOWED.****INITIAL CONDITIONS:**

- A Large Break LOCA has occurred on Unit 1.
- Containment pressure peaked at 31 psig.
- Steps 1 through 4 of 1E-0, Reactor Trip or Safety Injection, are complete.
- You are the LEAD RO.
- Another operator will respond to alarms.

**INITIATING CUES:**

- The SS directs you to perform Attachment L, SI Alignment Verification.

Retention: Life of Plant

Retain in: Training Record

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## CI-1S, CONTAINMENT ISOLATION ACTUATION FAILURE, REV. 0

**JPM PERFORMANCE INFORMATION****Required Materials:** NONE**General References:** 1E-0, REACTOR TRIP OR SAFETY INJECTION**Task Standards:** Examinee establishes containment isolation for plant conditions.**Start Time:** \_\_\_\_\_

**NOTE:** When providing “Evaluator Cues” to the examinee, care must be exercised to avoid prompting the examinee. Typically cues are only provided when the examinee’s actions warrant receiving the information (i.e., the examinee looks or asks for the indication).

**IMPORTANT:** Critical steps are marked with a “Y” below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM, per FP-T-SAT-73, Licensed Operator Requalification Program Examinations.

**Performance Step:**  
**Critical N**

1E-0, ATTACHMENT L Step 1

a. Both trains of SI actuated:

- Both RHR pumps – RUNNING
- OR-
- Both SI pumps - RUNNING

**Standard:**

Examinee determines both RHR and both SI pumps are running.

**Performance:**SATISFACTORY ☐ UNSATISFACTORY ☐**Comments:**

\_\_\_\_\_

**Performance Step:**  
**Critical N**

1E-0, ATTACHMENT L Step 1

b. “SI NOT READY” lights – NOT LIT

**Standard:**

Examinee determines all “SI NOT READY” lights are NOT lit.

**Performance:**SATISFACTORY ☐ UNSATISFACTORY ☐**Comments:**

\_\_\_\_\_

Retention: Life of Plant

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## CI-1S, CONTAINMENT ISOLATION ACTUATION FAILURE, REV. 0

<b>Performance Step:</b>	<b>1E-0, ATTACHMENT L Step 1</b>
<b>Critical <u>N</u></b>	<b>c. "SI ACTIVE" lights – LIT FOR PLANT CONDITIONS</b>
<b>Standard:</b>	<b>Examinee determines "SI ACTIVE" lights are lit for plant conditions.</b>
<b>Performance:</b>	<b>SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/></b>
<b>Comments:</b>	_____

<b>Performance Step:</b>	<b>1E-0, ATTACHMENT L Step 1</b>
<b>Critical <u>N</u></b>	<b>d. "CONTAINMENT ISOLATION" lights – LIT FOR PLANT CONDITIONS</b>
<b>Standard:</b>	<b>Examinee determines the "CONTAINMENT ISOLATION" lights are NOT lit for plant conditions.</b>
<b>Performance:</b>	<b>SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/></b>
<b>Comments:</b>	_____

<b>Performance Step:</b>	<b>1E-0, ATTACHMENT L Step 1.d RNO</b>
<b>Critical <u>Y</u></b>	<b>Manually align components as necessary.</b>
<b>Standard:</b>	<b>Examinee manually actuates Containment Isolation using CS-46085 or CS-46113.</b>
<b>Evaluator Note:</b>	<b>If the examinee manually closes each valve instead of using CS-46085 or CS-46113, then this step is completed SAT.</b>
<b>Performance:</b>	<b>SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/></b>
<b>Comments:</b>	_____

<b>Performance Step:</b>	<b>1E-0, ATTACHMENT L Step 1.d RNO</b>
<b>Critical <u>Y</u></b>	<b>Manually align components as necessary.</b>
<b>Standard:</b>	<b>Examinee manually closes CV-31545, RCDT GAS ANLZR HDR ISOL, using CS-46235.</b>
<b>Performance:</b>	<b>SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/></b>
<b>Comments:</b>	_____

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.

## CI-1S, CONTAINMENT ISOLATION ACTUATION FAILURE, REV. 0

Performance Step:	1E-0, ATTACHMENT L Step 1.d RNO
Critical <u>Y</u>	Manually align components as necessary.
Standard:	Examinee manually closes MV-32044, A STEAM GEN BD ISOLATION, using CS-46339.
Performance:	SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/>
Comments:	_____

Performance Step:	1E-0, ATTACHMENT L Step 1.d RNO
Critical <u>Y</u>	Manually align components as necessary.
Standard:	Examinee manually closes MV-32043, B STEAM GEN BD ISOLATION, using CS-46968.
Performance:	SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/>
Comments:	_____

Performance Step:	1E-0, ATTACHMENT L Step 1.d RNO
Critical <u>Y</u>	Manually align components as necessary.
Standard:	Examinee manually closes CV-31621, 1 CNTMT VACUUM BKR ISOL TRAIN A, using CS-46054.
Performance:	SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/>
Comments:	_____

**Terminating Cues:** When the examinee has established containment isolation for plant conditions, then this JPM is complete.

**NOTE:** When the task is completed successfully, all lights on Panel 44104, CONTAINMENT ISOLATION WASTE DISPOSAL, will be lit; except for Maintenance Air Lock Doors (lights 11A, 11B, 11C, & 11D) and AFW to SGs (lights 15A & 15B).

**Stop Time:** \_\_\_\_\_

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.

## TURNOVER SHEET

### INITIAL CONDITIONS:

- A Large Break LOCA has occurred on Unit 1.
- Containment pressure peaked at 31 psig.
- Steps 1 through 4 of 1E-0, Reactor Trip or Safety Injection, are complete.
- You are the LEAD RO.
- Another operator will respond to alarms.

### INITIATING CUES:

- The SS directs you to perform Attachment L, SI Alignment Verification.

## CI-1S, CONTAINMENT ISOLATION ACTUATION FAILURE, REV. 0

**Simulator Setup:**

1. If IC-269 is available:
  - a. Reset the simulator to IC-269.
  - b. Place the simulator in RUN.
  - c. Silence and acknowledge annunciators.
  - d. Place the simulator in FREEZE.
2. If IC-269 is NOT available:
  - a. Reset to IC-10.
  - b. Place the simulator in RUN.
  - c. Insert all inputs per input summary below.
  - d. Enter **Trigger 1, Large Break LOCA**.
  - e. Wait approximately 30 seconds, then trip the RCPs using:
    - 1) CS-46255, 11 REACTOR CLNT PUMP.
    - 2) CS-46256, 12 REACTOR CLNT PUMP.
  - f. Isolate Instrument Air to Containment by CLOSING:
    - 1) CV-31740, UNIT 1 CNTMT INSTR AIR, using CS-46154.
    - 2) CV-31741, UNIT 1 CNTMT INSTR AIR, using CS-46155.
  - g. Silence and acknowledge annunciators.
  - h. Place the simulator in FREEZE.
3. After turnover is complete with the examinee, place the simulator in RUN.

**SIMULATOR INPUT SUMMARY**

Relative Order	Type	Code	Description	Delay	Ramp	Severity Or Value	Event Trigger
0	MALF	RP05	TRAIN A CI FAILS TO ACTUATE			ACTIVE	
0	MALF	RP22	CI SLAVE RELAY FAILURE			ACTIVE	
1	MALF	RC06A	HOT LEG LOCA			70	1

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.

## CI-1S, CONTAINMENT ISOLATION ACTUATION FAILURE, REV. 0

## ATTACHMENT L MALFUNCTIONED COMPONENT LIST

Panel	44104 ID	Component	Control Switch
C	A1	CV-31318	CS-46266
C	B1	CV-31319	CS-46262
B	D2	CV-31339	CS-46166
B	A3	MV-32199	CS-46173
B	B3	MV-32166	CS-46132
A	A4	CV-31545	CS-46235
A	B4	CV-31546	CS-46234
A	C4	CV-31434	CS-46237
A	D4	CV-31435	CS-46236
A	A5	CV-31436	CS-46231
A	B5	CV-31437	CS-46230
A	C5	CV-31438	CS-46233
A	D5	CV-31439	CS-46232
D	B6	MV-32044	CS-46339
D	C6	MV-32058	CS-46340
D	D6	MV-32040	CS-46969
D	E6	MV-32043	CS-46968
A	A7	CV-31621	CS-46054
A	B7	CV-31622	CS-46055
E	C7	MV-32023	CS-46413
E	D7	MV-32024	CS-46414
OP*	D8	CV-31402	CS-70612
OP*	E8	CV-31403	CS-70613
RMR**	A10	CV-31750	CS-19447
RMR**	B10	CV-31022	CS-19449
***	D15	CV-31438 OR CV-31439	CS-46233 OR CS-46232
***	E15	CV-31438 OR CV-31439	CS-46233 OR CS-46232

\* Control Switch located in Out-Plant. If examinee directs the out-plant operator to close the 11/12 SGB Isolation Valves, then enter **REMOTES SG102 & SG103 to CLOSE.**

\*\* Panel located opposite R-11/R-12 Radiation Monitor Racks.

\*\*\* Closing either CV will cause both SMP A and ANN Discharge valves to CLOSE.

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.



## CI-1S, CONTAINMENT ISOLATION ACTUATION FAILURE, REV. 0

## ATTACHMENT 1

## JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

ALL STEPS IN THIS CHECKLIST ARE TO BE PERFORMED UPON INITIAL VALIDATION AND PRIOR TO USE.

REVIEW STATEMENTS	YES	NO	N/A
1. Are all items on the cover page filled in correctly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2. Has the JPM been reviewed and validated by SMEs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Can the required conditions for the JPM be appropriately established in the simulator if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Do the performance steps accurately reflect trainee's actions in accordance with plant procedures?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5. Is the standard for each performance item specific as to what controls, indications and ranges are required to evaluate if the trainee properly performed the step?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6. If the task is NOT time critical, has the completion time been established based on validation data or incumbent experience?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. If the task is time critical, is the time critical portion based upon actual task performance requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Is the Licensee level appropriate for the task being evaluated if required? Not applicable to Non-Licensed Operators	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Is the K/A appropriate to the task and to the licensee level if required? Not applicable to Non-Licensed Operators	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Have the performance steps been identified and typed (Critical / Sequence / Time Critical) appropriately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
11. Have all special tools and equipment needed to perform the task been identified?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
12. Are all references identified, current, and accurate?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
13. Have all required cues (as anticipated) been identified for the evaluator to assist task completion?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

All applicable questions must be answered "YES" or the JPM is not valid for use. If all applicable questions are answered "YES" then the JPM is considered valid and can be performed as written. The individual(s) performing the validation sign and date this form.

\_\_\_\_\_  
Validation Personnel /Date

\_\_\_\_\_  
Validation Personnel/Date

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Validation Personnel /Date

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Validation Personnel/Date

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Validation Personnel /Date

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Validation Personnel/Date

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
1	<b>Verify Safeguards Component Alignment:</b>  a. Both trains of SI actuated:  • Both RHR pumps - RUNNING  -OR-  • Both SI pumps - RUNNING  b. "SI NOT READY" lights - NOT LIT          c. "SI ACTIVE" lights - LIT FOR PLANT CONDITIONS          d. "CONTAINMENT ISOLATION" lights - LIT FOR PLANT CONDITIONS	  a. Manually actuate SI.          b. Manually align components as necessary.  Note any exceptions:          c. Manually align components as necessary.  Note any exceptions:          d. Manually align components as necessary.  Note any exceptions:

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
2	<b>Check Category 1 Vent Zone Boundary:</b> <ul style="list-style-type: none"><li>• Vent zone doors - CLOSED</li><li>• Special Vent Zone Report- NO OPENINGS REQUIRING CLOSURE WITHIN 20 MINUTES</li></ul>	Locally close openings.
3	<b>Close MV-32115, 122 SFP HX INLT HDR MV B</b>	
4	<b>Check Cooling Water Header Pressures - BOTH GREATER THAN 65 PSIG</b>	Restore cooling water pressure per C35 AOP1, LOSS OF PUMPING CAPACITY OR SUPPLY HEADER WITH SI.
5	<b>Verify Plant Announcements Complete:</b> <ul style="list-style-type: none"><li>• Unit 1 Reactor Trip &amp; Safety Injection</li><li>• Shift Manager &amp; SEC report to the Control Room</li></ul>	

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
6	<b>Check If Main Steamlines Are Isolated:</b>  a. MSIVs and bypass valves - CLOSED	a. Check if MSIV isolation is required:  • Steam flow - GREATER THAN $0.5 \times 10^6$ LB/HR  -OR-  • Containment pressure - GREATER THAN 17 PSIG  <u>IF</u> required, <u>THEN</u> manually close MSIVs and bypass valves.  <u>IF NOT</u> , <u>THEN</u> go to Step 7.
	b. Containment instrument air valves - CLOSED:  • CV-31740  • CV-31741	b. <u>IF</u> containment pressure is greater than 17 psig, <u>THEN</u> manually close instrument air valves.
7	<b>Verify SI Flow:</b>  a. RCS pressure - LESS THAN 2100 PSIG  b. Check for SI flow - FLOW INDICATED	a. Go to Step 9.  b. Manually start pumps and align valves.
8	<b>Verify RHR Flow:</b>  a. RCS pressure - LESS THAN 150 PSIG  b. Check for RHR flow - FLOW INDICATED	a. Go to Step 9.  b. Manually start pumps and align valves.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
Δ 9	<b>Check Containment Spray Not Required:</b>  a. Containment pressure - HAS REMAINED BELOW 23 PSIG	a. Perform the following:  1) Verify containment spray actuated. <u>IF</u> <u>NOT</u> , <u>THEN</u> manually actuate.  2) Verify containment spray alignment:  a) Containment spray pumps running. <u>IF NOT</u> , <u>THEN</u> manually start spray pump(s). <u>IF</u> pump does <u>NOT</u> start, <u>THEN</u> reset containment spray.  b) Containment spray pump discharge valves open. <u>IF</u> <u>NOT</u> , <u>THEN</u> place affected containment spray pump(s) in "PULLOUT."  c) Caustic addition standpipe valves open. <u>IF NOT</u> , <u>THEN</u> manually open valve(s).

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
10	<b>Check RCP Cooling:</b> <ol style="list-style-type: none"> <li>CC flow to each RCP – GREATER THAN 150 GPM</li> <li>Verify thermal barrier coolant outlet valves – OPEN: <ul style="list-style-type: none"> <li>CV-31245</li> <li>CV-31246</li> </ul> </li> <li>Seal injection flow to RCPs – NORMAL</li> </ol>	<ol style="list-style-type: none"> <li>Attempt to restore CC to RCPs.  <u>IF NOT</u>, <u>THEN</u> trip running RCPs.</li> <li><u>IF</u> seal injection normal, <u>THEN</u> restore CC to thermal barriers.  <u>IF</u> seal injection <u>NOT</u> normal, <u>THEN</u> trip affected RCP(s).</li> <li><u>IF</u> CC flow to thermal barrier normal, <u>THEN</u> establish seal injection.</li> </ol>
11	<b>Verify Local Actions Complete:</b> <ul style="list-style-type: none"> <li>Turbine building roof exhausters – STOPPED</li> <li>Unit 1 MSRs – ISOLATED PER ATTACHMENT J</li> </ul>	
12	<b>Verify Generator Breakers - OPEN:</b> <ul style="list-style-type: none"> <li>8H16</li> <li>8H17</li> <li>Gen Field Breaker</li> </ul>	Manually open breakers.
13	<b>Verify All Heater Drain Pumps - STOPPED</b>	Manually stop pumps.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
14	<b>Check Turbine Valves:</b> <ul style="list-style-type: none"><li>• Turbine reheat and intercept valves - CLOSED</li><li>• Open turbine drain valves (CV-31079 through CV-31082)</li></ul>	
15	<b>Verify Main Feedwater Alignment:</b> <ul style="list-style-type: none"><li>a. Both main feedwater pumps - STOPPED</li><li>b. Main and bypass FRVs - CLOSED</li></ul>	<ul style="list-style-type: none"><li>a. Manually stop pumps.</li><li>b. Manually close valves.</li></ul>
16	<b>Verify All Condensate Pumps - STOPPED</b>	Manually stop pumps.
17	<b>Place Steam Dump in "STM PRESS" Mode</b>	

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
18	<p><b>Verify Unit 1 Cooling/Chilled Water Alignment:</b></p> <p>a. CFCU control switches - "SLOW"</p> <p>b. CFCU dampers - ALIGNED TO DOME</p> <p>c. Unit 1 cooling water/chilled water valves:</p> <ul style="list-style-type: none"> <li>• Train A CS-46080: Green Light - ON Red Light - OFF</li> <li>• Train B CS-46081: Green Light - ON Red Light - OFF</li> </ul> <p>d. CFCU cooling water supply and return valves - OPEN:</p> <ul style="list-style-type: none"> <li>• CV-39411</li> <li>• CV-39409</li> <li>• CV-39401</li> <li>• CV-39403</li> </ul>	<p>a. Place switches to "SLOW".</p> <p>b. Manually align dampers.</p> <p>c. Place control switches to "ISOLATE".</p> <p>d. Locally open valves from Panel 57330, 11 CNTMT &amp; AUX BLDG CHLD WTR SYS CONT PNL.</p>

This Step continued on the next page.



STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
	(Step 18 continued from previous page)	
	e. CFCU chilled water supply and return valves - CLOSED: <ul style="list-style-type: none"><li>• CV-39412</li><li>• CV-39410</li><li>• CV-39402</li><li>• CV-39404</li></ul>	e. Locally close valves from Panel 57330, 11 CNTMT & AUX BLDG CHLD WTR SYS CONT PNL.
	f. Unit 1 CRDM shroud cooling supply and return valves - CLOSED: <ul style="list-style-type: none"><li>• CV-39407</li><li>• CV-39408</li><li>• CV-39405</li><li>• CV-39406</li></ul>	f. Locally close valves from Panel 57330, 11 CNTMT & AUX BLDG CHLD WTR SYS CONT PNL.
19	<b>Verify 11 Safeguards Screenhouse Ventilation Alignment:</b>	
	a. Vent panel monitor lights - <u>NOT</u> LIT: <ul style="list-style-type: none"><li>• 440910101</li><li>• 440910102</li><li>• 440910103</li></ul>	a. Attempt to establish ventilation per C37.8 AOP1, MALFUNCTION OF SCREENHOUSE SAFEGUARDS VENTILATION.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
20	<b>Verify Control Room Ventilation Alignment:</b>  a. Chillers and fans – RUNNING: <ul style="list-style-type: none"><li>• 121 CR Supply Fan</li><li>• 121 CR Chiller</li><li>• 121 CR Cleanup Fan</li><li>• 122 CR Supply Fan</li><li>• 122 CR Chiller</li><li>• 122 CR Cleanup Fan</li></ul> b. Control room chiller suction/discharge tie closed – STATUS LIGHT 44071-0101 LIT	a. Manually start chillers and fans.
21	<b>Verify Unit 2 Cooling Water/Chilled Water Alignment:</b>  a. Unit 2 cooling water/chilled water valves: <ul style="list-style-type: none"><li>• Train A CS-46772: Green Light – ON Red Light – OFF</li><li>• Train B CS-46773: Green Light – ON Red Light – OFF</li></ul>	a. Place control switches to "ISOLATE".

This Step continued on the next page.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
	(Step 21 continued from previous page)	
	b. Unit 2 CRDM shroud cooling supply and return valves - CLOSED: <ul style="list-style-type: none"><li>• CV-39420</li><li>• CV-39418</li><li>• CV-39419</li><li>• CV-39417</li></ul>	b. Locally close valves from Panel 57350, 21 CNTMT & AUX BLDG CHLD WTR SYS CONT PNL.
	c. CFCU cooling water supply and return valves - OPEN: <ul style="list-style-type: none"><li>• CV-39423</li><li>• CV-39421</li><li>• CV-39415</li><li>• CV-39413</li></ul>	c. Locally open valves from Panel 57350, 21 CNTMT & AUX BLDG CHLD WTR SYS CONT PNL.
	d. CFCU chilled water supply and return valves - CLOSED: <ul style="list-style-type: none"><li>• CV-39424</li><li>• CV-39422</li><li>• CV-39416</li><li>• CV-39414</li></ul>	d. Locally close valves from Panel 57350, 21 CNTMT & AUX BLDG CHLD WTR SYS CONT PNL.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
22	<b>Verify 21 Safeguards Screenhouse Ventilation Alignment:</b>  a. Vent panel monitor lights - <u>NOT</u> LIT: <ul style="list-style-type: none"> <li>• 445910101</li> <li>• 445910102</li> <li>• 445910103</li> </ul>	a. Attempt to establish ventilation per C37.8 AOP1, MALFUNCTION OF SCREENHOUSE SAFEGUARDS VENTILATION.
23	<b>Verify 11 And 12 Battery Charger Operation - NORMAL</b>	Locally restore battery charger per 1C20.9 AOP3 or 1C20.9 AOP4 as necessary.
Δ24	<b>Verify 11, 12, 21, And 22 Battery Room Temps - LESS THAN 84°F</b>	Monitor battery room temperatures and take actions per C18.1 Step 5.24.
Δ25	<b>Periodically Check Status Of Spent Fuel Cooling:</b> <ul style="list-style-type: none"> <li>• SFP level - GREATER THAN 752.5'</li> <li>• SFP temperature - LESS THAN 120°F</li> </ul>	Initiate action to restore cooling per C16, SPENT FUEL COOLING SYSTEM, or C16 AOP1, LOSS OF SFP INVENTORY, as necessary.
26	<b>Check Status Of Notifications:</b> <ul style="list-style-type: none"> <li>• Classification per F3-2 - INITIATED</li> <li>• Continuous communication with NRC - ESTABLISHED WITHIN 1 HOUR</li> </ul>	
27	<b>Notify SS Of Any Discrepancies</b>	

- END -



## JOB PERFORMANCE MEASURE (JPM)

SITE: PRAIRIE ISLAND

JPM TITLE: RAISE 11 ACCUMULATOR LEVEL

JPM NUMBER: SI-2S REV. 5

RELATED PRA INFORMATION: IMPORTANT COMPONENT – 11 SI PUMP

TASK NUMBERS / TASK TITLE(S): CRO 006 ATI 00 00 004 / RAISE ACCUMULATOR LEVEL (ABOVE COLD SHUTDOWN)

K/A NUMBERS: 006 A1.13 (3.5/3.7)

## APPLICABLE METHOD OF TESTING:

Discussion: ☐ Simulate/walkthrough: ☐ Perform: ☒EVALUATION LOCATION: In-Plant: ☐ Control Room: ☐Simulator: ☒ Other: ☐Lab: ☐Time for Completion: 11 Minutes Time Critical: NOAlternate Path: NOTASK APPLICABILITY: SRO: ☒ RO: ☒ NLO ☐

Additional site-specific signatures may be added as desired.

<b>Developed by:</b>	<b>Shawn Sarrasin</b>	<b>1/11/2014</b>
	Developer	Date
<b>Validated by:</b>	<b>Fredrick Collins</b>	<b>1/18/2014</b>
	Validator	Date
	(See JPM Validation Checklist, Attachment 1)	
<b>Approved by:</b>	<b>Travis Ouret</b>	<b>7/18/2014</b>
	Training Supervisor	Date

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.

## SI-2S, RAISE 11 ACCUMULATOR LEVEL, REV. 5

JPM Number: SI-2SJPM Title: RAISE 11 ACCUMULATOR LEVEL

Examinee: \_\_\_\_\_

Evaluator: \_\_\_\_\_

Job Title: \_\_\_\_\_

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

Start Time \_\_\_\_\_

Finish Time \_\_\_\_\_

PERFORMANCE RESULTS:

SAT: UNSAT: **COMMENTS/FEEDBACK: (Make written comments for any steps graded unsatisfactory).****EVALUATOR'S SIGNATURE:** \_\_\_\_\_

*NOTE: Only this page needs to be retained in examinee's record if completed satisfactorily. If unsatisfactory performance is demonstrated, the entire JPM should be retained.*

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.

**SI-2S, RAISE 11 ACCUMULATOR LEVEL, REV. 5****JPM BRIEFING/TURNOVER**

*You may use any approved reference materials normally available including logs. Make all written reports, oral reports, and log entries as if the evolution is actually being performed.*

*EOP Immediate Actions are required to be performed from memory. After completing immediate action steps without using the procedure, you may then use any approved reference materials.*

*If this JPM is performed on the simulator, the JPM administrator should only give cues that are not indicated on the simulator. If simulator indication is sufficient to indicate the completion of a step, the JPM administrator should not have to give a cue to the trainee to continue the evolution.*

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

**DURING THE JPM, ENSURE PROPER SAFETY PRECAUTIONS, FME, AND/OR RADIOLOGICAL CONCERNS AS APPLICABLE ARE FOLLOWED.****INITIAL CONDITIONS:**

- Unit 1 is at 100% power.
- 11 SI Accumulator Level is at 51%.
- 11 SI Pump has NOT been operated in the last 48 hours.
- Steps 6.4.1 and 6.4.2 of 1C18, Engineered Safeguards System Unit 1, are complete.
- An Out Plant Operator has been briefed and is standing by with the procedure to lubricate the 11 Safety Injection Pump bearings.

**INITIATING CUES:**

- The SS directs you to raise 11 SI Accumulator level using 11 SI pump per Section 6.4 of 1C18, Engineered Safeguards System Unit 1, starting at step 6.4.3.

## SI-2S, RAISE 11 ACCUMULATOR LEVEL, REV. 5

JPM PERFORMANCE INFORMATION**Required Materials:** NONE**General References:** 1C18, Engineered Safeguards System Unit 1**Task Standards:** Examinee raises the 11 SI Accumulator to approximately 56%, closes CV-31442, and stops 11 SI Pump.**Start Time:** \_\_\_\_\_

**NOTE:** When providing “Evaluator Cues” to the examinee, care must be exercised to avoid prompting the examinee. Typically cues are only provided when the examinee’s actions warrant receiving the information (i.e., the examinee looks or asks for the indication).

**IMPORTANT:** Critical steps are marked with a “Y” below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM, per FP-T-SAT-73, Licensed Operator Requalification Program Examinations.

<b>Performance Step:</b>	1C18 Step 6.4.3
<b>Critical <u>N</u></b>	Verify MV-32202, SI TEST LINE TO RWST, is OPEN.
<b>Standard:</b>	Examinee verifies MV-32202 is open using CS-46204, SI TEST LINE TO RWST, indicating lights.
<b>Performance:</b>	SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/>
<b>Comments:</b>	_____

<b>Performance Step:</b>	1C18 Step 6.4.4
<b>Critical <u>N</u></b>	Verify MV-32203, SI TEST LINE TO RWST, is OPEN.
<b>Standard:</b>	Examinee verifies MV-32203 is open using CS-46205, SI TEST LINE TO RWST, indicating lights.
<b>Performance:</b>	SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/>
<b>Comments:</b>	_____

Retention: Life of Plant

Retain in: Training Record

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## SI-2S, RAISE 11 ACCUMULATOR LEVEL, REV. 5

<b>Performance Step:</b>	1C18 Step 6.4.5
<b>Critical <u>N</u></b>	Verify at least one of the RWST header isolation valves to the SI pumps is OPEN: <ul style="list-style-type: none"> <li>• MV-32079, RWST TO SI PUMPS</li> <li><u>OR</u></li> <li>• MV-32080, RWST TO SI PUMPS</li> </ul>
<b>Standard:</b>	Examinee verifies either MV-32079 or MV-32080 is open by checking SI NOT READY LIGHTS 44102-5D, 8808A RWST TO SI CLOSED, or 44102-5E, 8808B RWST TO SI CLOSED, not lit.
<b>Evaluator Note:</b>	Both valves are Valve Open Breaker Open.
<b>Performance:</b>	SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/>
<b>Comments:</b>	_____

<b>Performance Step:</b>	1C18 Step 6.4.6
<b>Critical <u>N</u></b>	Station an operator locally to manually lubricate the bearings on the SI pump to be run, and observe pump run.
<b>Standard:</b>	Examinee directs an out-plant operator to perform actions of step 6.4.6.
<b>Evaluator Cue:</b>	When directed, as an out-plant operator, report the 11 SI pump bearings are lubricated and the out-plant operator is standing by to observe the pump run.
<b>Performance:</b>	SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/>
<b>Comments:</b>	_____

<b>Performance Step:</b>	1C18 Step 6.4.7
<b>Critical <u>Y</u></b>	Start the desired SI pump: <ul style="list-style-type: none"> <li>• CS-46178, 11 SI PUMP</li> <li><u>OR</u></li> <li>• <del>CS-46179, 12 SI PUMP</del></li> </ul>
<b>Standard:</b>	Examinee starts 11 SI pump using CS-46178.
<b>Performance:</b>	SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/>
<b>Comments:</b>	_____

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.

## SI-2S, RAISE 11 ACCUMULATOR LEVEL, REV. 5

<b>Performance Step:</b>	<b>1C18 Step 6.4.7</b>
<b>Critical <u>N</u></b>	<b>Record the time 11 SI pump was started:</b>
<b>Standard:</b>	<b>Examinee records the time 11 SI pump was started.</b>
<b>Performance:</b>	<b>SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/></b>
<b>Comments:</b>	<hr/>

<b>Performance Step:</b>	<b>1C18 Step 6.4.8</b>
<b>Critical <u>N</u></b>	<b>Locally observe proper SI pump operation:</b> <ul style="list-style-type: none"><li>• Bearing lubrication (slinger rings)</li><li>• Return oil flow indication</li><li>• Oil pressure indication</li></ul>
<b>Standard:</b>	<b>Examinee directs an out-plant operator to perform actions of step 6.4.8.</b>
<b>Evaluator Cue:</b>	<b>When directed, as out-plant operator, report Step 6.4.8 was completed and all indications are satisfactory.</b>
<b>Performance:</b>	<b>SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/></b>
<b>Comments:</b>	<hr/>

<b>Performance Step:</b>	<b>1C18 Step 6.4.9</b>
<b>Critical <u>N</u></b>	<b>Notify the Shift Supervisor that T.S. LCO 3.5.2 is NOT met and enter CONDITON A.</b>
<b>Standard:</b>	<b>Examinee informs SS of T.S. LCO 3.5.2 Condition A entry and records time.</b>
<b>Evaluator Cue:</b>	<b>When informed, as SS, acknowledge the T.S. LCO 3.5.2 Condition A entry and time of entry.</b>
<b>Performance:</b>	<b>SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/></b>
<b>Comments:</b>	<hr/>

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.

## SI-2S, RAISE 11 ACCUMULATOR LEVEL, REV. 5

**Performance Step:** 1C18 Step 6.4.10  
**Critical** Y  
 Under administrative control, OPEN the desired accumulator make-up isolation valve:  
 • CV-31442, 11 ACCUM M-U, using CS-46217  
OR  
 • ~~CV-31445, 12 ACCUM M-U, using CS-46218~~

**Standard:** Examinee opens CV-31442 using CS-46217.

**Evaluator Note:** If administrative controls are discussed with the SS, as the SS, direct the examinee to maintain control of the valve per the Step 6.4.10 caution.

**Performance:** SATISFACTORY ☐ UNSATISFACTORY ☐

**Comments:** \_\_\_\_\_

**Performance Step:** 1C18 Step 6.4.11  
**Critical** Y  
WHEN accumulator level reaches 56%, THEN CLOSE the accumulator make-up isolation valve:  
 • CV-31442, 11 ACCUM M-U, using CS-46217  
OR  
 • ~~CV-31445, 12 ACCUM M-U, using CS-46218~~

**Standard:** Examinee closes CV-31442 using CS-46217 when 11 SI Accumulator level is approximately 56%.

**Performance:** SATISFACTORY ☐ UNSATISFACTORY ☐

**Comments:** \_\_\_\_\_

## SI-2S, RAISE 11 ACCUMULATOR LEVEL, REV. 5

<b>Performance Step:</b>	<b>1C18 Step 6.4.12</b>
<b>Critical <u>N</u></b>	Independently verify the accumulator make-up isolation valve(s) is CLOSED: <ul style="list-style-type: none"> <li>• CV-31442, 11 ACCUM M-U</li> <li><u>OR</u></li> <li>• <del>CV-31445, 12 ACCUM M-U</del></li> </ul>
<b>Standard:</b>	Examinee requests an IV be performed on CV-31442.
<b>Evaluator Cue:</b>	When requested, as a licensed operator, inform the examinee an independent verification has been performed and initial Step 6.4.12.
<b>Performance:</b>	SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/>
<b>Comments:</b>	_____

<b>Performance Step:</b>	<b>1C18 Step 6.4.13</b>
<b>Critical <u>N</u></b>	<u>IF</u> second accumulator is to be filled, <u>THEN</u> repeat Steps 6.4.10 through 6.4.12.
<b>Standard:</b>	Examinee determines 12 SI Accumulator does not need to be filled.
<b>Performance:</b>	SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/>
<b>Comments:</b>	_____

<b>Performance Step:</b>	<b>1C18 Step 6.4.14</b>
<b>Critical <u>N</u></b>	Notify the Shift Supervisor to exit T.S. LCO 3.5.2 CONDITION A.
<b>Standard:</b>	Examinee notifies SS to exit T.S. LCO 3.5.2 Condition A.
<b>Evaluator Cue:</b>	When notified, as the SS, acknowledge exit from T.S. LCO 3.5.2 Condition A and time of exit.
<b>Performance:</b>	SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/>
<b>Comments:</b>	_____

## SI-2S, RAISE 11 ACCUMULATOR LEVEL, REV. 5

<b>Performance Step:</b>	1C18 Step 6.4.15
<b>Critical <u>N</u></b>	Ensure the SI pump has run for a minimum of 15 minutes.
<b>Standard:</b>	Examinee verifies SI pump has been operating for a minimum of 15 minutes.
<b>Evaluator Cue:</b>	When examinee indicates they will wait 15 minutes to elapse from pump start, then inform the examinee 15 minutes has elapsed since 11 SI pump was started.
<b>Performance:</b>	SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/>
<b>Comments:</b>	_____

<b>Performance Step:</b>	1C18 Step 6.4.16
<b>Critical <u>Y</u></b>	Stop the safety injection pump: <ul style="list-style-type: none"> <li>• CS-46178, 11 SI PUMP</li> <li><u>OR</u></li> <li>• <del>CS-46179, 12 SI PUMP</del></li> </ul>
<b>Standard:</b>	Examinee stops 11 SI pump using CS-46178.
<b>Performance:</b>	SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/>
<b>Comments:</b>	_____

<b>Performance Step:</b>	1C18 Step 6.4.16
<b>Critical <u>N</u></b>	Record the time 11 SI pump was secured.
<b>Standard:</b>	Examinee records the time that 11 SI pump was secured.
<b>Performance:</b>	SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/>
<b>Comments:</b>	_____

**Terminating Cues:** When the examinee has raised 11 SI Accumulator to approximately 56%, has closed CV-31442, and stopped 11 SI Pump, then this JPM is complete.

**Stop Time:** \_\_\_\_\_

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.

## TURNOVER SHEET

### INITIAL CONDITIONS:

- Unit 1 is at 100% power.
- 11 SI Accumulator Level is at 51%.
- 11 SI Pump has NOT been operated in the last 48 hours.
- Steps 6.4.1 and 6.4.2 of 1C18, Engineered Safeguards System Unit 1, are complete.

### INITIATING CUES:

- The SS directs you to raise 11 SI Accumulator level using 11 SI pump per Section 6.4 of 1C18, Engineered Safeguards System Unit 1, starting at step 6.4.3.

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.

**SI-2S, RAISE 11 ACCUMULATOR LEVEL, REV. 5****Simulator Setup:**

1. If available, reset the simulator to IC-271 and place in RUN.
2. If IC-271 is NOT available:
  - a. Reset to IC-10
  - b. Place the simulator in RUN.
  - c. Open CV-31443, 11 ACCUM TO RC DRN TNK, using CS-46221.
  - d. When 11 SI Accumulator level reaches 51%, close CV-31443 using CS-46221.
3. Sign off steps 6.4.1 and 6.4.2 for using 11 SI Pump of 1C18, Engineered Safeguards System Unit 1, as complete.
4. Open a 2 point trend on ERCS showing SI Accumulator Level (1L0924A) and Pressure (1P0922A).

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.

## SI-2S, RAISE 11 ACCUMULATOR LEVEL, REV. 5

## ATTACHMENT 1

## JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

ALL STEPS IN THIS CHECKLIST ARE TO BE PERFORMED UPON INITIAL VALIDATION AND PRIOR TO USE.

REVIEW STATEMENTS	YES	NO	N/A
1. Are all items on the cover page filled in correctly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2. Has the JPM been reviewed and validated by SMEs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Can the required conditions for the JPM be appropriately established in the simulator if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Do the performance steps accurately reflect trainee's actions in accordance with plant procedures?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5. Is the standard for each performance item specific as to what controls, indications and ranges are required to evaluate if the trainee properly performed the step?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6. If the task is NOT time critical, has the completion time been established based on validation data or incumbent experience?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. If the task is time critical, is the time critical portion based upon actual task performance requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Is the Licensee level appropriate for the task being evaluated if required? Not applicable to Non-Licensed Operators	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Is the K/A appropriate to the task and to the licensee level if required? Not applicable to Non-Licensed Operators	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Have the performance steps been identified and typed (Critical / Sequence / Time Critical) appropriately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
11. Have all special tools and equipment needed to perform the task been identified?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
12. Are all references identified, current, and accurate?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
13. Have all required cues (as anticipated) been identified for the evaluator to assist task completion?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

All applicable questions must be answered "YES" or the JPM is not valid for use. If all applicable questions are answered "YES" then the JPM is considered valid and can be performed as written. The individual(s) performing the validation sign and date this form.

\_\_\_\_\_  
Validation Personnel /Date

\_\_\_\_\_  
Validation Personnel/Date

\_\_\_\_\_  
Validation Personnel /Date

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Validation Personnel/Date

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Validation Personnel /Date

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Validation Personnel /Date

\_\_\_\_\_  
Validation Personnel/Date

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.



<b>C</b>	<b>ENGINEERED SAFEGUARDS SYSTEM UNIT 1</b>	NUMBER: <b>1C18</b>
		REV: <b>28</b>
		Page 25 of 54

#### 6.4 Raising Accumulator Level (Normal RCS Operating Pressure)

<b>NOTE:</b>	Accumulator level indication is pressure sensitive. Increasing pressure will cause level indication to decrease. A 100 psi change in pressure will change level indication approximately 5%. Accumulator level should NOT be changed unless pressure is within the normal operating band.
--------------	---

<b>NOTE:</b>	OPENING an accumulator make-up isolation valve affects operability of the SI system due to creating a diversion flow path and affects containment isolation. Administrative controls are placed on the containment isolation function per T.S. LCO 3.6.3 Note 1 and an LCO Condition entry is made for SI inoperability per T.S. 3.5.2. <u>IF</u> one train of SI is initially inoperable, <u>THEN</u> performing accumulator makeup will result in less than 100% of the ECCS flow equivalent to a single operable ECCS train being available.
--------------	---

<b>NOTE:</b>	The SI System status is defined by applicable portions of the Integrated Operations Checklist C1.1.18-1.
--------------	--

6.4.1 **Verify** the SI pump will not be run on recirculation minimum flow for more than 2 hours in any 24 hour period (see Precaution 3.7). \_\_\_\_\_

6.4.2 **Verify** the SI PUMP TO TEST LINE, for the SI Pump to be operated, is OPEN: \_\_\_\_\_

- **SI-15-3**, 11 SI PUMP TO TEST LINE \_\_\_\_\_

OR

- **SI-15-4**, 12 SI PUMP TO TEST LINE \_\_\_\_\_

6.4.3 **Verify** MV-32202, SI TEST LINE TO RWST, is OPEN. \_\_\_\_\_

6.4.4 **Verify** MV-32203, SI TEST LINE TO RWST, is OPEN. \_\_\_\_\_

C	ENGINEERED SAFEGUARDS SYSTEM UNIT 1	NUMBER:  1C18
		REV: 28
		Page 26 of 54

**6.4.5** **Verify** at least one of the RWST header isolation valves to the SI pumps is OPEN:

- **MV-32079**, RWST TO SI PUMPS \_\_\_\_\_

OR

- **MV-32080**, RWST TO SI PUMPS \_\_\_\_\_

**6.4.6** **Station** an operator locally to manually **lubricate** the bearings on the SI pump to be run, and **observe** pump run. \_\_\_\_\_

**6.4.7** **Start** the desired SI pump and **record** the time:

- **CS-46178**, 11 SI PUMP \_\_\_\_\_

time

OR

- **CS-46179**, 12 SI PUMP \_\_\_\_\_

time

**6.4.8** Locally **observe** proper SI pump operation:

- Bearing lubrication (slinger rings) \_\_\_\_\_
- Return oil flow indication \_\_\_\_\_
- Oil pressure indication \_\_\_\_\_

**6.4.9** **Notify** the Shift Supervisor that T.S. LCO 3.5.2 is NOT met and **enter** CONDITION A. \_\_\_\_\_

Entered CONDITION A at: \_\_\_\_\_

time

<b>C</b>	<b>ENGINEERED SAFEGUARDS SYSTEM UNIT 1</b>	NUMBER: <b>1C18</b>
		REV: <b>28</b>
		Page 27 of 54

**NOTE:**

Accumulator level rises immediately upon **OPENING** the accumulator make-up isolation valve.

**CAUTION:**

**WHEN** CV-31442, 11 ACCUM M-U, OR CV-31445, 12 ACCUM M-U, IS OPEN, **THEN** AN OPERATOR SHALL BE DESIGNATED TO HAVE THE RESPONSIBILITY FOR CLOSING THE VALVE WITHIN ONE MINUTE FOLLOWING AN ACCIDENT.

**CAUTION:**

THE ACCUMULATORS SHALL BE FILLED ONE AT A TIME TO PREVENT CROSS-CONNECTING THE ACCUMULATOR WATER SPACES.

**6.4.10** Under administrative control, **OPEN** the desired accumulator make-up isolation valve:

- **CV-31442**, 11 ACCUM M-U, using **CS-46217** \_\_\_\_\_

OR

- **CV-31445**, 12 ACCUM M-U, using **CS-46218** \_\_\_\_\_

**6.4.11** WHEN accumulator level reaches 56%, THEN **CLOSE** the accumulator make-up isolation valve:

- **CV-31442**, 11 ACCUM M-U, using **CS-46217** \_\_\_\_\_

OR

- **CV-31445**, 12 ACCUM M-U, using **CS-46218** \_\_\_\_\_

**6.4.12** Independently **verify** the accumulator make-up isolation valve(s) is **CLOSED**:

- **CV-31442**, 11 ACCUM M-U \_\_\_\_\_

IV

OR

- **CV-31445**, 12 ACCUM M-U \_\_\_\_\_

IV

C	ENGINEERED SAFEGUARDS SYSTEM UNIT 1	NUMBER:  1C18
		REV: 28
		Page 28 of 54

**6.4.13** IF second accumulator is to be filled, THEN **repeat** Steps 6.4.10 through 6.4.12.

\_\_\_\_\_

**6.4.14** **Notify** the Shift Supervisor to exit T.S. LCO 3.5.2 CONDITION A.

\_\_\_\_\_

Exited CONDITION A at:

\_\_\_\_\_

time

**6.4.15** **Ensure** the SI pump has run for a minimum of 15 minutes.

\_\_\_\_\_

**6.4.16** **Stop** the safety injection pump and **record** the time:

- **CS-46178**, 11 SI PUMP

\_\_\_\_\_

time

OR

- **CS-46179**, 12 SI PUMP

\_\_\_\_\_

time

**6.4.17** **Notify** the SI System Engineer of the completion of this procedure in order to evaluate level adjustment frequency.

\_\_\_\_\_

**6.4.18** IF the unit is in Mode 1, Power Operations, or Mode 2, Startup, THEN **initiate** a CAP to evaluate possible nitrogen intrusion into the SI system.

\_\_\_\_\_



## JOB PERFORMANCE MEASURE (JPM)

SITE: PRAIRIE ISLAND

JPM TITLE: LOSS OF COOLING WATER HEADER PRESSURE

JPM NUMBER: CL-11SF REV. 0

RELATED PRA INFORMATION: LOCL (<1%)  
 IMPORTANT COMPONENT – 12 DD CLG WTR PMP  
 IMPORTANT COMPONENT – 22 DD CLG WTR PMP

TASK NUMBERS / TASK TITLE(S): CRO 076 ATI 00 00 002 / SHUTDOWN A COOLING WATER PUMP  
 CRO 076 ATI 00 00 013 / LOSS OF PUMPING CAPACITY OR HEADER WITHOUT SI

K/A NUMBERS: 075 A4.01 (3.2\*/3.2\*)

## APPLICABLE METHOD OF TESTING:

Discussion: ☐ Simulate/walkthrough: ☐ Perform: ☒

EVALUATION LOCATION: In-Plant: ☐ Control Room: ☐  
 Simulator: ☒ Other: ☐  
 Lab: ☐

Time for Completion: 8 Minutes Time Critical: NOAlternate Path: YESTASK APPLICABILITY: SRO: ☒ RO: ☒ NLO: ☐

Additional site-specific signatures may be added as desired.

<b>Developed by:</b>	<b>Shawn Sarrasin</b>	<b>3/20/2014</b>
	Developer	Date
<b>Validated by:</b>	<b>Fredrick Collins</b>	<b>3/20/2014</b>
	Validator	Date
	(See JPM Validation Checklist, Attachment 1)	
<b>Approved by:</b>	<b>Travis Ouret</b>	<b>7/18/2014</b>
	Training Supervisor	Date

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.

## CL-11SF, LOSS OF COOLING WATER HEADER PRESSURE, REV. 0

JPM Number: CL-11SFJPM Title: LOSS OF COOLING WATER HEADER PRESSURE

Examinee: \_\_\_\_\_

Evaluator: \_\_\_\_\_

Job Title: \_\_\_\_\_

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

Start Time \_\_\_\_\_

Finish Time \_\_\_\_\_

PERFORMANCE RESULTS:

SAT: UNSAT: **COMMENTS/FEEDBACK: (Make written comments for any steps graded unsatisfactory).****EVALUATOR'S SIGNATURE:** \_\_\_\_\_

*NOTE: Only this page needs to be retained in examinee's record if completed satisfactorily. If unsatisfactory performance is demonstrated, the entire JPM should be retained.*

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.

**CL-11SF, LOSS OF COOLING WATER HEADER PRESSURE, REV. 0****JPM BRIEFING/TURNOVER**

*You may use any approved reference materials normally available including logs. Make all written reports, oral reports, and log entries as if the evolution is actually being performed.*

*EOP Immediate Actions are required to be performed from memory. After completing immediate action steps without using the procedure, you may then use any approved reference materials.*

*If this JPM is performed on the simulator, the JPM administrator should only give cues that are not indicated on the simulator. If simulator indication is sufficient to indicate the completion of a step, the JPM administrator should not have to give a cue to the trainee to continue the evolution.*

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

**DURING THE JPM, ENSURE PROPER SAFETY PRECAUTIONS, FME, AND/OR RADIOLOGICAL CONCERNS AS APPLICABLE ARE FOLLOWED.****INITIAL CONDITIONS:**

- Unit 1 is at 100%.
- 11 and 21 Motor Driven Cooling Water Pumps are RUNNING.
- 12 and 22 Diesel Driven Cooling Water Pumps are in STANDBY.
- 121 Motor Driven Cooling Water Pump is RUNNING.
- 121 Motor Driven Cooling Water Pump is NOT aligned as a safeguards pump.
- Steps 5.10.1 through 5.10.3 of C35, COOLING WATER, are complete.
- An out-plant operator is stationed near the 121 Motor Driven Cooling Water Pump with a radio.

**INITIATING CUES:**

- The SS directs you to secure 121 Motor Driven Cooling Water Pump by performing steps 5.10.4 through 5.10.6 of C35, COOLING WATER.

## CL-11SF, LOSS OF COOLING WATER HEADER PRESSURE, REV. 0

**JPM PERFORMANCE INFORMATION****Required Materials:** NONE**General References:** C35, COOLING WATER  
C35 AOP2, LOSS OF PUMPING CAPACITY OR SUPPLY HEADER WITHOUT SI  
C47020-0106, 11 COOLING WATER PUMP LOCKED OUT**Task Standards:** Examinee secures 121 Motor Driven Cooling Water Pump and restores cooling water header pressure above 85 psig when 11 Motor Driven Cooling Water Pump locks out.**Start Time:** \_\_\_\_\_**NOTE:** When providing “Evaluator Cues” to the examinee, care must be exercised to avoid prompting the examinee. Typically cues are only provided when the examinee’s actions warrant receiving the information (i.e., the examinee looks or asks for the indication).**IMPORTANT:** Critical steps are marked with a “Y” below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM, per FP-T-SAT-73, Licensed Operator Requalification Program Examinations.

<b>Performance Step:</b>	C35, COOLING WATER, Step 5.10.4
<b>Critical <u>N</u></b>	While monitoring 4101202 or 4150402 [4101302 or 4150502], LOOP A [B] CLG WTR DISCH HDR PRESS, CLOSE CL-39-3, 121 CLG WTR PUMP DISCH.
<b>Standard:</b>	Examinee monitors Cooling Water Header Pressure while directing an out-plant operator to close CL-39-3.
<b>Evaluator Cue:</b>	When examinee directs an out-plant operator to close CL-39-3, enter TRIGGER 1, wait 1 minute, and then inform examinee CL-39-3 is closed.
<b>Performance:</b>	SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/>
<b>Comments:</b>	_____

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.



## CL-11SF, LOSS OF COOLING WATER HEADER PRESSURE, REV. 0

**Performance Step:** C35, COOLING WATER, Step 5.10.5  
**Critical N** IF either Header A or B pressure lowers to below 85 psig or Annunciator 47020-0204 OR 47520-0203 [47020-0205 OR 470520-0204], LOOP A [B] COOLING WATER LO PRESS, alarms THEN:  
A. OPEN CL-39-3, 121 CLG WTR PUMP DISCH.  
B. Perform one of the following:  
1. Start another cooling water pump AND return to Step 5.10.4.  
OR  
2. Leave 121 Cooling Water Pump in service AND go to Step 5.10.7.

**Standard:** Examinee determines this step is NOT applicable because Cooling Water Header Pressure is stable above 85 psig.

**Performance:** SATISFACTORY ☐ UNSATISFACTORY ☐

**Comments:** \_\_\_\_\_

**Performance Step:** C35, COOLING WATER, Step 5.10.6  
**Critical Y** IF cooling water pressure is maintained, THEN:  
A. Place CS-46052, 121 CLG WTR PUMP, in "STOP".

**Standard:** Examinee stops 121 CLG WTR PUMP using CS-46052.

**Performance:** SATISFACTORY ☐ UNSATISFACTORY ☐

**Comments:** \_\_\_\_\_

## CL-11SF, LOSS OF COOLING WATER HEADER PRESSURE, REV. 0

<b>Performance Step:</b>	<b>C35, COOLING WATER, Step 5.10.6</b>
<b>Critical <u>N</u></b>	<b>IF cooling water pressure is maintained, THEN: B. OPEN CL-39-3, 121 CLG WTR PUMP DISCH.</b>
<b>Standard:</b>	<b>Examinee directs an out-plant operator to open CL-39-3.</b>
<b>Evaluator Cues:</b>	<ul style="list-style-type: none"> <li>When examinee directs an out-plant operator to open CL-39-3, acknowledge the order, wait 1 minute, and then report CL-39-3 is stuck in the closed position.</li> <li>After the report for CL-39-3 being stuck closed is given, enter TRIGGER 2 to cause 11 Motor Driven Cooling Water Pump to lockout.</li> </ul>
<b>Evaluator Note:</b>	<b>Examinee may place 121 CLG WTR PUMP in PULLOUT to prevent auto start. This is NOT a JPM failure.</b>
<b>Performance:</b>	<b>SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/></b>
<b>Comments:</b>	_____

**ALTERNATE PATH STARTS HERE**

<b>Performance Step:</b>	<b>C47020-0106, 11 COOLING WATER PUMP LOCKED OUT, Step 1</b>
<b>Critical <u>N</u></b>	<b>Verify Cooling Water Header pressure restored to normal.</b>
<b>Standard:</b>	<b>Examinee determines cooling water header pressure is NOT restored to normal.</b>
<b>Evaluator Note:</b>	<b>The examinee may respond using C47020-0204, C47020-0205, C47520-0203, C47520-0204, or C35 AOP2 instead of C47020-0106.</b>
<b>Evaluator Cue:</b>	<b>If the examinee requests the status of Unit 2 SI and Non-Safeguards 4KV Buses, then inform examinee SI is NOT active on Unit 2 and all Unit 2 Non-Safeguards 4KV Buses are ENERGIZED.</b>
<b>Performance:</b>	<b>SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/></b>
<b>Comments:</b>	_____

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.

## CL-11SF, LOSS OF COOLING WATER HEADER PRESSURE, REV. 0

**Performance Step:** C47020-0106, 11 COOLING WATER PUMP LOCKED OUT, Step 1 (continued)  
**Critical Y** Start available Cooling Water Pumps, as necessary.

**Standard:** Examinee starts at least one Cooling Water Pump as follows:

- 12 Diesel Driven Cooling Water Pump
  1. Place CS-46336 in MANUAL.
  2. Momentarily place CS-46053 in START.

AND/OR

- 22 Diesel Driven Cooling Water Pump
  1. Place CS-46537 in MANUAL.
  2. Momentarily place CS-46523 in START.

**Evaluator Note:** The examinee may respond using C47020-0204, C47020-0205, C47520-0203, C47520-0204, or C35 AOP2 instead of C47020-0106.

**Performance:** SATISFACTORY ☐ UNSATISFACTORY ☐

**Comments:** \_\_\_\_\_

**Terminating Cues:** When the examinee has secured 121 Motor Driven Cooling Water Pump and has restored Cooling Water Header Pressure above 85 psig when 11 Motor Driven Cooling Water Pump locks out, then this JPM is complete.

**Stop Time:** \_\_\_\_\_

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.

## TURNOVER SHEET

### INITIAL CONDITIONS:

- Unit 1 is at 100%.
- 11 and 21 Motor Driven Cooling Water Pumps are RUNNING.
- 12 and 22 Diesel Driven Cooling Water Pumps are in STANDBY.
- 121 Motor Driven Cooling Water Pump is RUNNING.
- 121 Motor Driven Cooling Water Pump is NOT aligned as a safeguards pump.
- Steps 5.10.1 through 5.10.3 of C35, COOLING WATER, are complete.
- An out-plant operator is stationed near the 121 Motor Driven Cooling Water Pump with a radio.

### INITIATING CUES:

- The SS directs you to secure 121 Motor Driven Cooling Water Pump by performing steps 5.10.4 through 5.10.6 of C35, COOLING WATER.

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.

**CL-11SF, LOSS OF COOLING WATER HEADER PRESSURE, REV. 0****Simulator Setup:**

1. If available, reset the simulator to IC-271 and place in RUN.
2. If IC-271 is NOT available.
  - a. Reset to IC-10.
  - b. Place the simulator in RUN.
  - c. Start 121 Motor Driven Cooling Water Pump using CS-46052.
  - d. Increase Cooling Water load as follows:
    - 1) D1 Diesel Generator:
      - (a) Start D1 using CS-46935, D1 DIESEL GENERATOR.
      - (b) Place CS-46902, D1 DSL GEN EXCITER CONTROL SEL SW, in "MANUAL."
      - (c) Place CS-46948, BKR 15-2 MAN/AUTO CLOSURE SEL SW, in "MANUAL."
      - (d) Place CS-46906, BUS 15 SYNCHROSCOPE SEL SW, in "D1."
      - (e) Adjust CS-46934, D1 DSL GEN GOVERNOR SPEED CONTROL, until the indicator on 41911, SYNCHROSCOPE, is turning slowly in a clockwise direction.
      - (f) As the synchroscope indicator approaches 12 o'clock, CLOSE BKR 15-2 using CS-46950, BUS 15 SOURCE FROM D1 DSL GEN.
      - (g) Place CS-46948, BKR 15-2 MAN/AUTO CLOSURE SEL SW, in "AUTO."
      - (h) Place CS-46906, BUS 15 SYNCHROSCOPE SEL SW, in "OFF."
      - (i) Raise D1 load to approximately 2060 KW using CS-46934, D1 DSL GEN GOVERNOR SPEED CONTROL.
      - (j) Raise D1 VARs to approximately 1000 KVARs by adjusting CS-46933, D1 DSL GEN EXCITER CONTROL.
    - 2) Cooling Water to Unit 1 and Unit 2 CFCUs:
      - (a) Perform the following for the switches listed below:
        - (1) Place all four switches to ISOL.
        - (2) Wait one minute.
        - (3) Place all four switches to RESET.
        - (4) Place all four switches to AUTO.
          - CS-46080, TRAIN A – UNIT 1 CLG WTR/CHILLED WTR ISOL VALVES.
          - CS-46081, TRAIN B – UNIT 1 CLG WTR/CHILLED WTR ISOL VALVES.
          - CS-46772, TRAIN A – UNIT 2 CLG WTR/CHILLED WTR ISOL VALVES.
          - CS-46773, TRAIN B – UNIT 2 CLG WTR/CHILLED WTR ISOL VALVES.
      - (b) Insert remote **CH128**, 11/12 CRDM CLG COIL SPLY/RTN VLVs, to OPEN.
3. Verify total cooling water flow rate is approximately 18000 GPM.
4. If available, run schedule file **CL-11SF.sch** as follows:
  - a. Select open file in the Schedule application.
  - b. Locate schedule file.
  - c. Open schedule file by double clicking it.
  - d. Run the schedule file by pressing the "Stopped" button on the toolbar.
  - e. Verify the schedule file is running.
5. If schedule file is NOT available, then insert malfunctions, remotes, and overrides, as specified by the Simulator Input Summary on next page.
6. On the Unit 1 G-Panel ERCS display, run a TREND-4 with the following points:
  - 1) 1P2601A
  - 2) 1P2602A
  - 3) 1F2609A
  - 4) 1F2610A
7. Markup steps 5.10.1 – 5.10.3 of C35 as complete.

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.

**CL-11SF, LOSS OF COOLING WATER HEADER PRESSURE, REV. 0****SIMULATOR INPUT SUMMARY**

@Time	Event	Action	Description
00:00:00		Insert malfunction CL02A	DIESEL COOLING WATER PUMP #12 FAILS TO START AUTOMATICALLY
00:00:00		Insert malfunction CL02B	DIESEL COOLING WATER PUMP #22 FAILS TO START AUTOMATICALLY
00:00:00		Insert malfunction CL03	121 COOLING WATER PUMP FAILS TO START AUTOMATICALLY
	1	Insert remote CL114 to CLOSED on event 1	121 CLG WTR PUMP DSCH VLV CL-39-3
	2	Insert malfunction CL01A on event 2	COOLING WATER PUMP #11 TRIP
	2	Insert override DI-460525T to False on event 2	121 COOLING WATER PUMP FAILS TO START MANUALLY

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.

## CL-11SF, LOSS OF COOLING WATER HEADER PRESSURE, REV. 0

## ATTACHMENT 1

## JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

ALL STEPS IN THIS CHECKLIST ARE TO BE PERFORMED UPON INITIAL VALIDATION AND PRIOR TO USE.

REVIEW STATEMENTS	YES	NO	N/A
1. Are all items on the cover page filled in correctly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2. Has the JPM been reviewed and validated by SMEs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Can the required conditions for the JPM be appropriately established in the simulator if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Do the performance steps accurately reflect trainee's actions in accordance with plant procedures?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5. Is the standard for each performance item specific as to what controls, indications and ranges are required to evaluate if the trainee properly performed the step?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6. If the task is NOT time critical, has the completion time been established based on validation data or incumbent experience?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. If the task is time critical, is the time critical portion based upon actual task performance requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Is the Licensee level appropriate for the task being evaluated if required? Not applicable to Non-Licensed Operators	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Is the K/A appropriate to the task and to the licensee level if required? Not applicable to Non-Licensed Operators	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Have the performance steps been identified and typed (Critical / Sequence / Time Critical) appropriately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
11. Have all special tools and equipment needed to perform the task been identified?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
12. Are all references identified, current, and accurate?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
13. Have all required cues (as anticipated) been identified for the evaluator to assist task completion?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

All applicable questions must be answered "YES" or the JPM is not valid for use. If all applicable questions are answered "YES" then the JPM is considered valid and can be performed as written. The individual(s) performing the validation sign and date this form.

\_\_\_\_\_  
Validation Personnel /Date

\_\_\_\_\_  
Validation Personnel/Date

\_\_\_\_\_  
Validation Personnel /Date

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Validation Personnel/Date

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Validation Personnel /Date

\_\_\_\_\_  
Validation Personnel/Date

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.

C	COOLING WATER	NUMBER:
		C35
		REV: 77
		Page 47 of 145

**5.10.3** IF 121 Cooling Water Pump is aligned as a safeguards pump, THEN **perform** the following:

- A. **Notify** Shift Supervisor T.S. LCO 3.7.8 is NOT met  
AND **enter** CONDITION A.

Entered CONDITION A at: \_\_\_\_\_

time

- B. **Notify** Shift Supervisor T.S. LCO 3.8.1 is NOT met  
AND **enter** CONDITION B.

Entered CONDITION B at: \_\_\_\_\_

**NOTE:**

The following step may be NA if LCO 3.8.1 is met within one hour.

- C. **Perform** SP1118, Verify Paths From The Grid To U-1 Buses, within one hour after declaring the affected Diesel Generator Inoperable.

**CAUTION:**

A COOLING WATER PUMP SHOULD NOT BE OPERATED FOR GREATER THAN ONE MINUTE WITH ITS DISCHARGE VALVE FULLY CLOSED.

**NOTE:**

Steps 5.10.4 and 5.10.5 are performed concurrently.

M<sub>2</sub>

**5.10.4** While monitoring **4101202** or **4150402** [**4101302** or **4150502**], LOOP A [B] CLG WTR DISCH HDR PRESS, **CLOSE CL-39-3**, 121 CLG WTR PUMP DISCH.



C	COOLING WATER	NUMBER:
		C35
		REV: 77
		Page 48 of 145

**5.10.5** IF either Header A or B pressure lowers to below 85 psig or Annunciator **47020-0204** OR **47520-0203** [**47020-0205** or **47520-0204**], LOOP A [B] COOLING WATER LO PRESS, alarms THEN:

A. **OPEN CL-39-3**, 121 CLG WTR PUMP DISCH. \_\_\_\_\_

B. **Perform** one of the following: \_\_\_\_\_

1. Start another cooling water pump AND return to Step 5.10.4. \_\_\_\_\_

OR

2. **Leave** 121 Cooling Water Pump in service AND go to Step **Error! Reference source not found..** \_\_\_\_\_

**5.10.6** IF cooling water pressure is maintained, THEN:

A. **Place CS-46052**, 121 CLG WTR PUMP, in "STOP". \_\_\_\_\_

B. **OPEN CL-39-3**, 121 CLG WTR PUMP DISCH. \_\_\_\_\_

**5.10.7** IF 121 Cooling Water Pump is aligned as a safeguards pump, THEN independently **verify CL-39-3**, 121 CLG WTR PMP DISCH is OPEN. \_\_\_\_\_

IV

**5.10.8** IF applicable, THEN **perform** the following:

A. **Notify** Shift Supervisor T.S. LCO 3.7.8 is met, AND to **exit** CONDITION A. \_\_\_\_\_

Exited CONDITION A at: \_\_\_\_\_

Time

B. **Notify** Shift Supervisor T.S. LCO 3.8.1 is met, AND to **exit** CONDITION B. \_\_\_\_\_

Exited CONDITION B at: \_\_\_\_\_

Time

ANNUNCIATOR LOCATION: 47020-0106

11 COOLING WATER PUMP LOCKED OUT	Alarm	
	Lockout Relay Actuated (Overcurrent or 11 Circulating Water Pump Bay Level Low)	
11 COOLING WATER PUMP LOCKED OUT	Approximate Setpoints	
	Tripped	Reset
SER Input Point: (047) Address: (20W06)	<10 Ft on CB Indicator	Not Specified

**AUTOMATIC ACTIONS**

- Trips and locks out 11 Cooling Water Pump.
- Possible start of 121 Cooling Water Pump.
- Possible start of 12 Cooling Water Pump.
- Possible start of 22 Cooling Water Pump.

**INITIAL ACTIONS**

- Verify** Cooling Water Header pressure restored to normal. **Start** available Cooling Water Pumps, as necessary. \_\_\_\_\_
- IF tripped on low level, THEN:
  - Verify** actions of C47041-AR26, ALARM RESPONSE PROCEDURE - ERCS, for decreasing intake bay level are in progress. \_\_\_\_\_
  - IF due to decreasing Intake Canal level, THEN perform the following:
    - OPEN** Intake Screenhouse bypass gates per C25, CIRCULATING WATER SYSTEM. \_\_\_\_\_
    - IF neither Intake Screenhouse bypass gate OPENS, THEN perform the following:
      - OPEN** the Recycle Gates. \_\_\_\_\_
      - Decrease** turbine load to maintain cooling water temperature less than 85°F. \_\_\_\_\_
    - Verify** local actions in progress per C91802, EXTERNAL CIRCULATING WATER REMOTE ALARM RESPONSES. \_\_\_\_\_

CONTINUED

TITLE:	ALARM RESPONSE PROCEDURE	C47020
		Rev. 39
		Page 2 of 2

ANNUNCIATOR LOCATION: 47020-0106

INITIAL ACTIONS (Continued)

- C. **Check** traveling screens for proper operation. \_\_\_\_\_
- D. **Verify** pump bay level >10 Ft. \_\_\_\_\_
- E. **Restart** 11 Cooling Water Pump per C35, COOLING WATER SYSTEM. \_\_\_\_\_
- 3. IF tripped due to overcurrent, THEN:
  - A. **Notify** Electrical Section. \_\_\_\_\_
  - B. **Refer** to 1C20.5, 4.16 KV SYSTEM - UNIT 1, for guidance in resetting of lockout relays. \_\_\_\_\_

SUBSEQUENT ACTIONS

- 1. **Refer** to F3-2, CLASSIFICATION OF EMERGENCIES, for possible classification due to low river level. \_\_\_\_\_
- 2. **Refer** to 5AWI 3.6.0, REPORTING AND NRC NOTICES OF VIOLATION, for reportability requirements. \_\_\_\_\_
- 3. **Effect** necessary repairs AND **return** system to normal. \_\_\_\_\_

INSTRUMENTS & REFERENCES

- 1. Actuating devices (50-51A/INST, 50-51C/INST, 50-51A/TIME, 50-51C/TIME, 50G/INST OR 48152).
- 2. Flow Diagrams NF-39216.
- 3. Logic Diagram NF-40315 Sheet 1.
- 4. Schematic Diagrams NE-40005 Sheet 43 and NE-40011 Sheet 27.
- 5. Logic Card 20, Chip U36.



## JOB PERFORMANCE MEASURE (JPM)

SITE: PRAIRIE ISLAND

JPM TITLE: LOWER PRT LEVEL AND RESPOND TO PRZR PORV LEAKAGE

JPM NUMBER: RC-22SF-1 REV. 3

RELATED PRA INFORMATION: IMPORTANT COMPONENT – 1 PRZR PORV B CV

TASK NUMBERS / TASK TITLE(S): CRO 002 ATI 00 00 005 / RAISE/LOWER PRT LEVEL  
CRO 010 007 01 01 000 / MONITOR THE PRZR PRESSURE RELIEF SYSTEM

K/A NUMBERS: 010 A4.03 (4.0/3.8)

## APPLICABLE METHOD OF TESTING:

Discussion: ☐ Simulate/walkthrough: ☐ Perform: ☒EVALUATION LOCATION: In-Plant: ☐ Control Room: ☐Simulator: ☒ Other: ☐Lab: ☐

Time for Completion: 11 Minutes Time Critical: NO

Alternate Path: YES

TASK APPLICABILITY: SRO: ☒ RO: ☒ NLO ☐

Additional site-specific signatures may be added as desired.

<b>Developed by:</b>	<b>Shawn Sarrasin</b>	<b>3/20/2014</b>
	Developer	Date
<b>Validated by:</b>	<b>Fredrick Collins</b>	<b>3/20/2014</b>
	Validator	Date
	(See JPM Validation Checklist, Attachment 1)	
<b>Approved by:</b>	<b>Travis Ouret</b>	<b>7/18/2014</b>
	Training Supervisor	Date

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.

## RC-22SF-1, LOWER PRT LEVEL AND RESPOND TO PRZR PORV LEAKAGE, REV. 3

JPM Number: RC-22SF-1JPM Title: LOWER PRT LEVEL AND RESPOND TO PRZR PORV LEAKAGE

Examinee: \_\_\_\_\_

Evaluator: \_\_\_\_\_

Job Title: \_\_\_\_\_

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

Start Time \_\_\_\_\_

Finish Time \_\_\_\_\_

PERFORMANCE RESULTS:

SAT: UNSAT: **COMMENTS/FEEDBACK: (Make written comments for any steps graded unsatisfactory).****EVALUATOR'S SIGNATURE:** \_\_\_\_\_

*NOTE: Only this page needs to be retained in examinee's record if completed satisfactorily. If unsatisfactory performance is demonstrated, the entire JPM should be retained.*

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.

**RC-22SF-1, LOWER PRT LEVEL AND RESPOND TO PRZR PORV LEAKAGE, REV. 3****JPM BRIEFING/TURNOVER**

*You may use any approved reference materials normally available including logs. Make all written reports, oral reports, and log entries as if the evolution is actually being performed.*

*EOP Immediate Actions are required to be performed from memory. After completing immediate action steps without using the procedure, you may then use any approved reference materials.*

*If this JPM is performed on the simulator, the JPM administrator should only give cues that are not indicated on the simulator. If simulator indication is sufficient to indicate the completion of a step, the JPM administrator should not have to give a cue to the trainee to continue the evolution.*

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

**DURING THE JPM, ENSURE PROPER SAFETY PRECAUTIONS, FME, AND/OR RADIOLOGICAL CONCERNS AS APPLICABLE ARE FOLLOWED.****INITIAL CONDITIONS:**

- Unit 1 is at 100%.
- PRT level is 74%.
- You are the Unit 1 Lead Reactor Operator.

**INITIATING CUES:**

- The SS directs you to lower PRT level to 72% per step 5.1.1 of 1C4, Reactor Coolant System.

## RC-22SF-1, LOWER PRT LEVEL AND RESPOND TO PRZR PORV LEAKAGE, REV. 3

**JPM PERFORMANCE INFORMATION****Required Materials:** NONE**General References:** 1C4, REACTOR COOLANT SYSTEM  
C47012-0406, PRZR RELIEF TANK HI TEMP/LVL/PRESS OR LO LVL  
C47012-0506, PRZR POWER RELIEF LINE HI TEMP**Task Standards:** Examinee lowers PRT level to approximately 72% and isolates CV-31231 by closing MV-32195.**Start Time:** \_\_\_\_\_**NOTE:** When providing "Evaluator Cues" to the examinee, care must be exercised to avoid prompting the examinee. Typically cues are only provided when the examinee's actions warrant receiving the information (i.e., the examinee looks or asks for the indication).**IMPORTANT:** Critical steps are marked with a "Y" below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM, per FP-T-SAT-73, Licensed Operator Requalification Program Examinations.**Performance Step:** 1C4, REACTOR COOLANT SYSTEM, Step 5.1.1.A  
**Critical N** Ensure PRT pressure is approximately 6 psig.**Standard:** Examinee determines PRT pressure is already approximately 6 psig.**Performance:** SATISFACTORY ☐ UNSATISFACTORY ☐**Comments:** \_\_\_\_\_**Performance Step:** 1C4, REACTOR COOLANT SYSTEM, Step 5.1.1.B  
**Critical Y** Open CV-31323, PRZR RELIEF TNK DRN, using CS-46268 to reduce the level in the PRT.**Standard:** Examinee opens CV-31323 using CS-46268.**Performance:** SATISFACTORY ☐ UNSATISFACTORY ☐**Comments:** \_\_\_\_\_

## RC-22SF-1, LOWER PRT LEVEL AND RESPOND TO PRZR PORV LEAKAGE, REV. 3

**Performance Step:** 1C4, REACTOR COOLANT SYSTEM, Step 5.1.1.C  
**Critical N** Verify 11 RCDT Pump starts when CV-31323 indicates fully open.

**Standard:** Examinee determines 11 RCDT Pump started.

**Performance:** SATISFACTORY ☐ UNSATISFACTORY ☐

**Comments:** \_\_\_\_\_

**Performance Step:** 1C4, REACTOR COOLANT SYSTEM, Step 5.1.1.D  
**Critical N** Verify PRT level begins to decrease at approximately 1%/minute.

**Standard:** Examinee determines PRT level is decreasing at approximately 1%/minute.

**Performance:** SATISFACTORY ☐ UNSATISFACTORY ☐

**Comments:** \_\_\_\_\_

**Performance Step:** 1C4, REACTOR COOLANT SYSTEM, Step 5.1.1.E  
**Critical N** If 11 RCDT Pump is not operating properly, then perform the following...

**Standard:** Examinee determines 11 RCDT Pump is operating properly and this step is NOT applicable.

**Performance:** SATISFACTORY ☐ UNSATISFACTORY ☐

**Comments:** \_\_\_\_\_

**Performance Step:** 1C4, REACTOR COOLANT SYSTEM, Step 5.1.1.F  
**Critical Y** When the PRT level decreases to about 72% as indicated on LI-41078, then close CV-31323, PRZR RELIEF TANK DRN, using CS-46268.

**Standard:** Examinee closes CV-31323 using CS-46268.

**Evaluator Cue:** When the examinee has closed CV-31323, then enter TRIGGER 1 to cause CV-31231, PRZR RELIEF VALVE (PCV431C), to leak into the PRT.

**Performance:** SATISFACTORY ☐ UNSATISFACTORY ☐

**Comments:** \_\_\_\_\_



## RC-22SF-1, LOWER PRT LEVEL AND RESPOND TO PRZR PORV LEAKAGE, REV. 3

**Performance Step:** 1C4, REACTOR COOLANT SYSTEM, Step 5.1.1.G  
**Critical N** Restore PRT pressure to 6 psig per Step 5.1.3, if required.

**Standard:** Examinee determines if PRT pressure needs to be raised.

**Performance:** SATISFACTORY ☐ UNSATISFACTORY ☐ NOT APPLICABLE ☐

**Comments:** \_\_\_\_\_

**Performance Step:** 1C4, REACTOR COOLANT SYSTEM, Step 5.1.3.A  
**Critical N** Verify the PRT level is 71.5% to 76% on LI-41078.

**Standard:** Examinee verifies PRT level is between 71.5% and 76%.

**Performance:** SATISFACTORY ☐ UNSATISFACTORY ☐ NOT APPLICABLE ☐

**Comments:** \_\_\_\_\_

**Performance Step:** 1C4, REACTOR COOLANT SYSTEM, Step 5.1.3.B  
**Critical N** OPEN CV-31221, PRZR RELIEF TNK NITROGEN SPLY ISOL, using CS-46269.

**Standard:** Examinee opens CV-31221.

**Performance:** SATISFACTORY ☐ UNSATISFACTORY ☐ NOT APPLICABLE ☐

**Comments:** \_\_\_\_\_

**Performance Step:** 1C4, REACTOR COOLANT SYSTEM, Step 5.1.3.C  
**Critical N** When PRT pressure reaches 6 psig on PI-4107701, Then CLOSE CV-31221, using CS-46269.

**Standard:** Examinee closes CV-31221 when PRT pressure is 6 psig.

**Performance:** SATISFACTORY ☐ UNSATISFACTORY ☐ NOT APPLICABLE ☐

**Comments:** \_\_\_\_\_

**ALTERNATE PATH STARTS HERE**

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.

## RC-22SF-1, LOWER PRT LEVEL AND RESPOND TO PRZR PORV LEAKAGE, REV. 3

<b>Performance Step:</b> <b>Critical <u>N</u></b>	<b>C47012-0506, PRZR POWER RELIEF LINE HI TEMP, Step 1</b> <b>Check pressurizer relief line temperature.</b>
<b>Standard:</b>	<b>Examinee determines pressurizer relief line temperature is abnormally high.</b>
<b>Performance:</b>	<b>SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/></b>
<b>Comments:</b>	_____

<b>Performance Step:</b> <b>Critical <u>N</u></b>	<b>C47012-0506, PRZR POWER RELIEF LINE HI TEMP, Step 2</b> <b>Check pressurizer pressure.</b> <b>A. If pressure high, then control pressure in manual utilizing heaters and sprays.</b>
<b>Standard:</b>	<b>Examinee determines pressurizer pressure is normal (not high).</b>
<b>Performance:</b>	<b>SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/></b>
<b>Comments:</b>	_____

<b>Performance Step:</b> <b>Critical <u>N</u></b>	<b>C47012-0506, PRZR POWER RELIEF LINE HI TEMP, Step 2</b> <b>Check pressurizer pressure.</b> <b>B. Verify power operated relief reseated by noting relief line temperature decrease, valve position indication, and relief valve flow monitor lights.</b>
<b>Standard:</b>	<b>Examinee determines relief line temperature is NOT decreasing.</b>
<b>Performance:</b>	<b>SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/></b>
<b>Comments:</b>	_____

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.

## RC-22SF-1, LOWER PRT LEVEL AND RESPOND TO PRZR PORV LEAKAGE, REV. 3

<b>Performance Step:</b> <b>Critical <u>Y</u></b>	<b>C47012-0506, PRZR POWER RELIEF LINE HI TEMP, Step 2</b> Check pressurizer pressure. C. If pressure normal, then isolate power operated reliefs one at a time to determine which valve is leaking: 1) Isolate CV-31231 by performing the following: a) Close MV-32195 PRZR RELIEF ISOL (1-8000A) using CS-46263.
<b>Standard:</b>	Examinee isolates CV-31231 by closing MV-32195 using CS-46263.
<b>Performance:</b>	SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/>
<b>Comments:</b>	_____

<b>Performance Step:</b> <b>Critical <u>N</u></b>	<b>C47012-0506, PRZR POWER RELIEF LINE HI TEMP, Step 2</b> Check pressurizer pressure. C. If pressure normal, then isolate power operated reliefs one at a time to determine which valve is leaking: 1) Isolate CV-31231 by performing the following: b) Observe relief line temperature.
<b>Standard:</b>	Examinee determines relief line temperature is lowering.
<b>Performance:</b>	SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/>
<b>Comments:</b>	_____

**Terminating Cues:** When the examinee has lowered PRT level to approximately 72% and has isolated CV-31231 by closing MV-32195, then this JPM is complete.

**Stop Time:** \_\_\_\_\_

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.

## TURNOVER SHEET

### INITIAL CONDITIONS:

- Unit 1 is at 100%.
- PRT level is 74%.
- You are the Unit 1 Lead Reactor Operator.

### INITIATING CUES:

- The SS directs you to lower PRT level to 72% per step 5.1.1 of 1C4, Reactor Coolant System.

**RC-22SF-1, LOWER PRT LEVEL AND RESPOND TO PRZR PORV LEAKAGE, REV. 3****Simulator Setup:**

1. If available, reset the simulator to IC-270 and place in RUN.
2. If IC-270 is NOT available:
  - a. Reset to IC-10.
  - b. Place the simulator in RUN.
  - c. Fill the PRT to 74% as follows:
    - 1) OPEN CV-31322, RX M-U TO PRZR RELIEF TNK, using CS-46265.
    - 2) OPEN CV-31321, RX M-U TO CNTMT, using CS-46261.
    - 3) Verify PRT level is 74%.
    - 4) CLOSE CV-31322 using CS-46265.
    - 5) CLOSE CV-31321 using CS-46261.
  - d. Raise PRT pressure to approximately 6 psig as follows:
    - 1) OPEN CV-31221, PRZR RELIEF TNK NITROGEN SPLY ISOL, using CS-46269.
    - 2) When PRT pressure reaches 6 psig on PI-4107701, then CLOSE CV-31221 using CS-46269.
3. If available, run schedule file **RC-22SF-1.sch** as follows:
  - a. Select open file in the Schedule application.
  - b. Locate schedule file.
  - c. Open schedule file by double clicking it.
  - d. Run the schedule file by pressing the "Stopped" button on the toolbar.
  - e. Verify the schedule file is running.
4. If schedule file is NOT available, then insert malfunctions, remotes, and overrides, as specified by the Simulator Input Summary below.
5. Setup a 2 point ERCS trend for PRT pressure (1P0485A) and level (1L0485A) on a ERCS Screen.

**SIMULATOR INPUT SUMMARY**

@Time	Event	Action	Description
	1	Insert malfunction RC22B to 5.00000 on event 1	PRESSURIZER POWER OPERATED RELIEF VALVE PCV-431C LEAKAGE

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.

## RC-22SF-1, LOWER PRT LEVEL AND RESPOND TO PRZR PORV LEAKAGE, REV. 3

## ATTACHMENT 1

## JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

ALL STEPS IN THIS CHECKLIST ARE TO BE PERFORMED UPON INITIAL VALIDATION AND PRIOR TO USE.

REVIEW STATEMENTS	YES	NO	N/A
1. Are all items on the cover page filled in correctly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2. Has the JPM been reviewed and validated by SMEs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Can the required conditions for the JPM be appropriately established in the simulator if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Do the performance steps accurately reflect trainee's actions in accordance with plant procedures?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5. Is the standard for each performance item specific as to what controls, indications and ranges are required to evaluate if the trainee properly performed the step?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6. If the task is NOT time critical, has the completion time been established based on validation data or incumbent experience?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. If the task is time critical, is the time critical portion based upon actual task performance requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Is the Licensee level appropriate for the task being evaluated if required? Not applicable to Non-Licensed Operators	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Is the K/A appropriate to the task and to the licensee level if required? Not applicable to Non-Licensed Operators	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Have the performance steps been identified and typed (Critical / Sequence / Time Critical) appropriately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
11. Have all special tools and equipment needed to perform the task been identified?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
12. Are all references identified, current, and accurate?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
13. Have all required cues (as anticipated) been identified for the evaluator to assist task completion?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

All applicable questions must be answered "YES" or the JPM is not valid for use. If all applicable questions are answered "YES" then the JPM is considered valid and can be performed as written. The individual(s) performing the validation sign and date this form.

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Validation Personnel /Date

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Validation Personnel/Date

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.

C	REACTOR COOLANT SYSTEM	NUMBER:  1C4
		REV: 15
		Page 4 of 29

#### 4.0 LIMITATIONS

- 4.1** A nitrogen gas blanket must be maintained at approximately 6 psig in the PRT during normal operation. Do not allow the pressure in the PRT to exceed 6 psig during normal operation.
- 4.2** The PRT water temperature should be maintained below 125°F.
- 4.3** Do not drain the PRT via the reactor coolant drain tank pumps when PRT level indication is indicating less than zero (0).

#### 5.0 PROCEDURES

##### 5.1 Normal Operation of Pressurizer Relief Tank

<b>CONTINUOUS USE</b>
<ul style="list-style-type: none"> <li>• <i>Continuous use of procedure required.</i></li> <li>• <i>Read each step prior to performing.</i></li> <li>• <i>Mark off steps as they are completed.</i></li> <li>• <i>Procedure <b>SHALL</b> be at the work location.</i></li> </ul>

##### 5.1.1 Lowering PRT Level

<b>NOTE:</b>	During power operation, PRT level is normally maintained between 71.5% and 76%. Deviation from the desired level range should result in a PRZR RELIEF TNK HI TEMP/LVL/PRESS OR LO LVL alarm (47012-0406).
--------------	---

<b>NOTE:</b>	<u>IF</u> the pressurizer relief tank high level alarm will not clear, <u>THEN</u> refer to 1C4 AOP1, Reactor Coolant Leak.
--------------	---

- A. **Ensure** PRT pressure is approximately 6 psig. \_\_\_\_\_
- B. **OPEN CV-31323**, PRZR RELIEF TNK DRN, using **CS-46268** to reduce the level in the PRT. \_\_\_\_\_

(This step continued on the next page . . .)

<b>C</b>	<b>REACTOR COOLANT SYSTEM</b>	NUMBER: <b>1C4</b>
		REV: <b>15</b>
		Page 5 of 29

(Step 5.1.1 continued from previous page. . .)

- C. **Verify** 11 RCDT Pump starts when **CV-31323** indicates fully OPEN. \_\_\_\_\_
- D. **Verify** PRT level begins to decrease at approximately 1%/minute. \_\_\_\_\_

**NOTE:**

The PRT pumps down normally at approximately 1%/minute. **IF** the PRT does not pump down properly, **THEN** a check of the RCDT pump discharge throttle valves should be made as directed by the System Engineer. Ensure **WL-40-1, 11 RCDT PUMP DISCHARGE**, and **WL-40-2, 12 RCDT PUMP DISCHARGE**, valves are each throttled to  $\approx 2$  turns OPEN.

- E. **IF** 11 RCDT Pump is not operating properly, **THEN perform** the following (**NA** steps if not used)
1. **Place CS-46353**, 11 RCDT PUMP, in "PULLOUT." \_\_\_\_\_
  2. **Start** 12 RCDT PUMP using **CS-46354**. \_\_\_\_\_
  3. **WHEN** the PRT level decreases to about 72% as indicated on **LI-41078**, **THEN CLOSE CV-31323**, PRZR RELIEF TNK DRN, using **CS-46268**. \_\_\_\_\_
  4. **WHEN** the desired level is reached in the RCDT, **THEN stop** 12 RCDT PUMP using **CS-46354**. \_\_\_\_\_
  5. **Place CS-46353**, 11 RCDT PUMP, in "AUTO." \_\_\_\_\_
  6. **Restore** PRT pressure to 6 psig per Step 5.1.3, if required, and **NA** Steps 5.1.1.F and 5.1.1.G. \_\_\_\_\_
- F. **WHEN** the PRT level decreases to about 72% as indicated on **LI-41078**, **THEN CLOSE CV-31323**, PRZR RELIEF TANK DRN, using **CS-46268**. \_\_\_\_\_
- G. **Restore** PRT pressure to 6 psig per Step 5.1.3, if required. \_\_\_\_\_



ANNUNCIATOR LOCATION: 47012-0506

PRZR POWER RELIEF LINE HI TEMP	<div>Alarm</div> <div>Power Relief Line Temperature High</div>
PRESSURIZER POWER RELIEF LINE HIGH TEMPERATURE  SER Input Point: 212 Address: 6W42	<div>Approximate Setpoints</div> <div>TrippedReset</div>
	<div>&gt; 185°FNot Specified</div>

**AUTOMATIC ACTIONS**

NONE

**INITIAL ACTIONS**

1. Check pressurizer relief line temperature.
2. Check pressurizer pressure.
- A. IF pressure high, THEN control pressure in manual utilizing heaters and sprays.
- B. Verify power operated relief reseated by noting relief line temperature decrease, valve position indication, and relief valve flow monitor lights.
- C. IF pressure normal, THEN isolate power operated reliefs one at a time to determine which valve is leaking:
- 1) Isolate CV-31231 by performing the following:
- a) Close MV-32195, PRZR RELIEF ISOL (1-8000A) using CS-46263.

b) Observe relief line temperature.

c) Reset acoustic monitor light.

d) Open MV-32195, PRZR RELIEF ISOL (1-8000A) using CS-46263.
- 2) Isolate CV-31232 by performing the following:
- a) Close MV-32196, PRZR RELIEF ISOL (1-8000B) using CS-46264.

b) Observe relief line temperature.

CONTINUED

TITLE:	ALARM RESPONSE PROCEDURE	C47012
		Rev. 52
		Page 2 of 2

ANNUNCIATOR LOCATION: 47012-0506

INITIAL ACTIONS (Continued)

- c) **Reset** acoustic monitor light. \_\_\_\_\_ |
- d) **Open MV-32196**, PRZR RELIEF ISOL (1-8000B) using **CS-46264**. \_\_\_\_\_ |
- D. **Leave** leaking valve isolated. \_\_\_\_\_ |
- E. **Refer** to 5AWI 3.6.0, REPORTING AND NRC NOTICES OF VIOLATION, to determine reportability of an inoperable Pressurizer PORV. \_\_\_\_\_ |
- F. **Refer** to 1C4 AOP1, REACTOR COOLANT LEAK. \_\_\_\_\_ |

SUBSEQUENT ACTIONS

**NOTE:** The conditions of the plant during the performance of this procedure may involve the Emergency plan. Notify the Shift Supervisor to consider classification per F3-2.

- 1. **Effect** necessary repairs AND **return** system to normal. \_\_\_\_\_
- 2. **Refer** to T.S.3.4.11. \_\_\_\_\_

INSTRUMENTS & REFERENCES

- 1. Actuating device (1TE-438).
- 2. Flow Diagram XH-1-7.
- 3. Logic Diagram NF-40780 Sheet 3.
- 4. Schematic Diagram NE-40011 Sheet 186.



## JOB PERFORMANCE MEASURE (JPM)

SITE: PRAIRIE ISLAND

JPM TITLE: SYNCHRONIZE D1 DIESEL GENERATOR ON BUS 15

JPM NUMBER: EG-5S REV. 8

RELATED PRA INFORMATION: IMPORTANT COMPONENT – D1 DSL GEN

TASK NUMBERS / TASK TITLE(S): CRO 064 ATI 00 00 003 / SYNCHRONIZE AND LOAD D1/D2 DG FROM CONTROL ROOM

K/A NUMBERS: 064 A4.03 (3.2/3.3)

## APPLICABLE METHOD OF TESTING:

Discussion: ☐ Simulate/walkthrough: ☐ Perform: ☒EVALUATION LOCATION: In-Plant: ☐ Control Room: ☐Simulator: ☒ Other: ☐Lab: ☐Time for Completion: 9 Minutes Time Critical: NOAlternate Path: NOTASK APPLICABILITY: SRO: ☒ RO: ☒ NLO ☐

Additional site-specific signatures may be added as desired.

<b>Developed by:</b>	<b>Shawn Sarrasin</b>	<b>1/11/2014</b>
	Developer	Date
<b>Validated by:</b>	<b>Fredrick Collins</b>	<b>1/18/2014</b>
	Validator	Date
	(See JPM Validation Checklist, Attachment 1)	
<b>Approved by:</b>	<b>Travis Ouret</b>	<b>7/18/2014</b>
	Training Supervisor	Date

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.

## EG-5S, SYNCHRONIZE D1 DIESEL GENERATOR ON BUS 15, REV. 8

JPM Number: EG-5SJPM Title: SYNCHRONIZE D1 DIESEL GENERATOR ON BUS 15

Examinee: \_\_\_\_\_

Evaluator: \_\_\_\_\_

Job Title: \_\_\_\_\_

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

Start Time \_\_\_\_\_

Finish Time \_\_\_\_\_

PERFORMANCE RESULTS:

SAT: UNSAT: **COMMENTS/FEEDBACK: (Make written comments for any steps graded unsatisfactory).****EVALUATOR'S SIGNATURE:** \_\_\_\_\_

*NOTE: Only this page needs to be retained in examinee's record if completed satisfactorily. If unsatisfactory performance is demonstrated, the entire JPM should be retained.*

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.

**EG-5S, SYNCHRONIZE D1 DIESEL GENERATOR ON BUS 15, REV. 8****JPM BRIEFING/TURNOVER**

*You may use any approved reference materials normally available including logs. Make all written reports, oral reports, and log entries as if the evolution is actually being performed.*

*EOP Immediate Actions are required to be performed from memory. After completing immediate action steps without using the procedure, you may then use any approved reference materials.*

*If this JPM is performed on the simulator, the JPM administrator should only give cues that are not indicated on the simulator. If simulator indication is sufficient to indicate the completion of a step, the JPM administrator should not have to give a cue to the trainee to continue the evolution.*

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

**DURING THE JPM, ENSURE PROPER SAFETY PRECAUTIONS, FME, AND/OR RADIOLOGICAL CONCERNS AS APPLICABLE ARE FOLLOWED.**

**INITIAL CONDITIONS:**

- D1 Diesel Generator is running.
- Section 5.1.1 of 1C20.7, D1/D2 Diesel Generators, is complete.

**INITIATING CUES:**

- The SS directs you to synchronize D1 Diesel Generator to Bus 15 per steps 5.1.2.A through 5.1.2.H of 1C20.7, D1/D2 Diesel Generators.

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.

## EG-5S, SYNCHRONIZE D1 DIESEL GENERATOR ON BUS 15, REV. 8

**JPM PERFORMANCE INFORMATION****Required Materials:** NONE**General References:** 1C20.7, D1/D2 DIESEL GENERATORS**Task Standards:** Examinee synchronizes D1 Diesel Generator to Bus 15.**Start Time:** \_\_\_\_\_

**NOTE:** When providing “Evaluator Cues” to the examinee, care must be exercised to avoid prompting the examinee. Typically cues are only provided when the examinee’s actions warrant receiving the information (i.e., the examinee looks or asks for the indication).

**IMPORTANT:** Critical steps are marked with a “Y” below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM, per FP-T-SAT-73, Licensed Operator Requalification Program Examinations.

<b>Performance Step:</b>	1C20.7 Step 5.1.2.A
<b>Critical <u>Y</u></b>	Place CS-46948, BKR 15-2 MAN/AUTO CLOSURE SEL SW, in “MANUAL.”
<b>Standard:</b>	Examinee places CS-46948 in manual.
<b>Performance:</b>	SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/>
<b>Comments:</b>	_____

<b>Performance Step:</b>	1C20.7 Step 5.1.2.B
<b>Critical <u>Y</u></b>	Place CS-46906, BUS 15 SYNCHROSCOPE SEL SW, in “D1.”
<b>Standard:</b>	Examinee places CS-46906 in the D1 position.
<b>Performance:</b>	SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/>
<b>Comments:</b>	_____

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.

## EG-5S, SYNCHRONIZE D1 DIESEL GENERATOR ON BUS 15, REV. 8

**Performance Step:** 1C20.7 Step 5.1.2.C  
**Critical** Y Adjust CS-46934, D1 DSL GEN GOVERNOR SPEED CONTROL, until the indicator on 41911, SYNCHROSCOPE, is turning slowly in a clockwise direction.

**Standard:** Examinee adjusts CS-46929 until the synchroscope is turning slowly in the clockwise direction.

**Performance:** SATISFACTORY ☐ UNSATISFACTORY ☐

**Comments:** \_\_\_\_\_

**Performance Step:** 1C20.7 Step 5.1.2.D  
**Critical** N Verify the two (2) white lights on 44900, D1/D2 SYNCHRONIZING LIGHTS, go out as the synchroscope indicator passes 12 o'clock.

**Standard:** Examinee verifies the two white lights go out at the 12 o'clock position.

**Performance:** SATISFACTORY ☐ UNSATISFACTORY ☐

**Comments:** \_\_\_\_\_

**Performance Step:** 1C20.7 Step 5.1.2.E  
**Critical** N Adjust CS-46933, D1 DSL GEN EXCITER CONTROL, until 4191002, 4160 BUS INCOMING VOLTS, indicates slightly greater than 4191001, 4160 BUS RUNNING VOLTS.

**Standard:** Examinee verifies incoming volts is slightly greater than running volts.

**Performance:** SATISFACTORY ☐ UNSATISFACTORY ☐

**Comments:** \_\_\_\_\_

**Performance Step:** 1C20.7 Step 5.1.2.F  
**Critical** N Verify approximately 120 volts on 4191001, 4160 BUS RUNNING VOLTS.

**Standard:** Examinee verifies approximately 120 volts on 4191001.

**Performance:** SATISFACTORY ☐ UNSATISFACTORY ☐

**Comments:** \_\_\_\_\_

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.

## EG-5S, SYNCHRONIZE D1 DIESEL GENERATOR ON BUS 15, REV. 8

<b>Performance Step:</b>	<b>1C20.7 Step 5.1.2.G</b>
<b>Critical <u>Y</u></b>	<b>As the synchroscope indicator approaches 12 o'clock, CLOSE BKR 15-2 using CS-46950, BUS 15 SOURCE FROM D1 DSL GEN.</b>
<b>Standard:</b>	<b>Examinee closes BKR 15-2 when the synchroscope indicator is in the 11 o'clock to 1 o'clock position.</b>
<b>Performance:</b>	<b>SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/></b>
<b>Comments:</b>	_____

<b>Performance Step:</b>	<b>1C20.7 Step 5.1.2.H</b>
<b>Critical <u>N</u></b>	<b>Immediately verify D1 picks up some load as indicated on 41915, D1 EMERG GENERATOR POWER.</b>
<b>Standard:</b>	<b>Examinee verifies D1 picks up some load.</b>
<b>Performance:</b>	<b>SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/></b>
<b>Comments:</b>	_____

**Terminating Cues:** When the examinee has synchronized D1 Diesel Generator to Bus 15, then this JPM is complete.

**Stop Time:** \_\_\_\_\_

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.



## TURNOVER SHEET

### INITIAL CONDITIONS:

- D1 Diesel Generator is running.
- Section 5.1.1 of 1C20.7, D1/D2 Diesel Generators, is complete.

### INITIATING CUES:

- The SS directs you to synchronize D1 Diesel Generator to Bus 15 per steps 5.1.2.A through 5.1.2.H of 1C20.7, D1/D2 Diesel Generators.

**EG-5S, SYNCHRONIZE D1 DIESEL GENERATOR ON BUS 15, REV. 8**

**Simulator Setup:**

1. If available, reset the simulator to IC-270 and place in RUN.
2. If IC-270 is NOT available:
  - a. Reset to IC-10.
  - b. Place the simulator in RUN.
  - c. Start D1 using CS-46935, D1 DIESEL GENERATOR.
  - d. Place CS-46902, D1 DSL GEN EXCITER CONTROL SEL SW, in "MANUAL."
3. Mark up section 5.1.1 of 1C20.7 as complete.

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.

## EG-5S, SYNCHRONIZE D1 DIESEL GENERATOR ON BUS 15, REV. 8

## ATTACHMENT 1

## JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

ALL STEPS IN THIS CHECKLIST ARE TO BE PERFORMED UPON INITIAL VALIDATION AND PRIOR TO USE.

REVIEW STATEMENTS	YES	NO	N/A
1. Are all items on the cover page filled in correctly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2. Has the JPM been reviewed and validated by SMEs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Can the required conditions for the JPM be appropriately established in the simulator if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Do the performance steps accurately reflect trainee's actions in accordance with plant procedures?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5. Is the standard for each performance item specific as to what controls, indications and ranges are required to evaluate if the trainee properly performed the step?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6. If the task is NOT time critical, has the completion time been established based on validation data or incumbent experience?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. If the task is time critical, is the time critical portion based upon actual task performance requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Is the Licensee level appropriate for the task being evaluated if required? Not applicable to Non-Licensed Operators	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Is the K/A appropriate to the task and to the licensee level if required? Not applicable to Non-Licensed Operators	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Have the performance steps been identified and typed (Critical / Sequence / Time Critical) appropriately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
11. Have all special tools and equipment needed to perform the task been identified?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
12. Are all references identified, current, and accurate?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
13. Have all required cues (as anticipated) been identified for the evaluator to assist task completion?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

All applicable questions must be answered "YES" or the JPM is not valid for use. If all applicable questions are answered "YES" then the JPM is considered valid and can be performed as written. The individual(s) performing the validation sign and date this form.

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Validation Personnel /Date

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Validation Personnel/Date

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.

<b>C</b>	<b>D1/D2 DIESEL GENERATORS</b>	NUMBER: <b>1C20.7</b>
		REV: <b>42</b>
		Page 13 of 104

### 5.1.2 Synchronizing and Loading D1

This section provides instructions for synchronizing and loading D1 Diesel Generator from the Control Room. Some actions required by this section are performed locally and are identified by a pound sign (#).

- A. **Place CS-46948**, BKR 15-2 MAN/AUTO CLOSURE SEL SW, in "MANUAL". \_\_\_\_\_
- B. **Place CS-46906**, BUS 15 SYNCHROSCOPE SEL SW, in "D1". \_\_\_\_\_
- C. **Adjust CS-46934**, D1 DSL GEN GOVERNOR SPEED CONTROL, until the indicator on **41911**, SYNCHROSCOPE, is turning slowly in a clockwise direction. \_\_\_\_\_
- D. **Verify** the two (2) white lights on **44900**, D1/D2 SYNCHRONIZING LIGHTS, go out as the synchroscope indicator passes 12 o'clock. \_\_\_\_\_
- E. **Adjust CS-46933**, D1 DSL GEN EXCITER CONTROL, until **4191002**, 4160 BUS INCOMING VOLTS, indicates slightly greater than **4191001**, 4160 BUS RUNNING VOLTS. \_\_\_\_\_
- F. **Verify** approximately 120 volts on **4191001**, 4160 BUS RUNNING VOLTS. \_\_\_\_\_

#### **CAUTION:**

**IF ALL OFFSITE POWER IS LOST WHILE D1 DIESEL GENERATOR IS PARALLELED WITH THE GRID, THEN THE OPERATOR SHALL IMMEDIATELY VERIFY OFFSITE POWER SUPPLY BREAKERS TO BUS 15 ARE TRIPPED AND RETURN CS-46902, D1 DSL GEN EXCITER CONTROL SEL SW, TO "AUTO".**

- G. As the synchroscope indicator approaches 12 o'clock, **CLOSE BKR 15-2** using **CS-46950**, BUS 15 SOURCE FROM D1 DSL GEN. \_\_\_\_\_

(This step continued on the next page . . .)

<b>C</b>	<b>D1/D2 DIESEL GENERATORS</b>	NUMBER: <b>1C20.7</b>
		REV: <b>42</b>
		Page 14 of 104

(Step 5.1.2 continued from preceding page. . .)

- H. Immediately **verify** D1 picks up some load as indicated on **41915**, D1 EMERG GENERATOR POWER. \_\_\_\_\_
- I. **Verify** balanced loading on the following ammeters:
- **41902-04**, D1 EMERG GENERATOR PHASE A AMPS \_\_\_\_\_
  - **41902-05**, D1 EMERG GENERATOR PHASE B AMPS \_\_\_\_\_
  - **41902-06**, D1 EMERG GENERATOR PHASE C AMPS \_\_\_\_\_
- J. **Place CS-46948**, BKR 15-2 MAN/AUTO CLOSURE SEL SW, in "AUTO". \_\_\_\_\_
- K. **Place CS-46906**, BUS 15 SYNCHROSCOPE SEL SW, in "OFF". \_\_\_\_\_

(This step continued on the next page . . .)



## JOB PERFORMANCE MEASURE (JPM)

SITE: PRAIRIE ISLAND

JPM TITLE: NIS POWER RANGE DAILY CALIBRATION

JPM NUMBER: NI-5S REV. 0

RELATED PRA  
INFORMATION: NONETASK NUMBERS /  
TASK TITLE(S): CRO 015 007 02 01 000 / PERFORM NORMAL/ALTERNATE NIS  
CALIBRATION OF THERMAL POWER

K/A NUMBERS: 015 A1.01 (3.5/3.8)

## APPLICABLE METHOD OF TESTING:

Discussion: ☐ Simulate/walkthrough: ☐ Perform: ☒EVALUATION LOCATION: In-Plant: ☐ Control Room: ☐Simulator: ☒ Other: ☐Lab: ☐Time for Completion: 6 Minutes Time Critical: NOAlternate Path: NOTASK APPLICABILITY: SRO: ☒ RO: ☒ NLO ☐

Additional site-specific signatures may be added as desired.

<b>Developed by:</b>	<b>Shawn Sarrasin</b>	<b>1/11/2014</b>
	Developer	Date
<b>Validated by:</b>	<b>Fredrick Collins</b>	<b>2/28/2014</b>
	Validator	Date
	(See JPM Validation Checklist, Attachment 1)	
<b>Approved by:</b>	<b>Travis Ouret</b>	<b>7/30/2014</b>
	Training Supervisor	Date

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.

## NI-5S, NIS POWER RANGE DAILY CALIBRATION, REV. 0

JPM Number: NI-5SJPM Title: NIS POWER RANGE DAILY CALIBRATION

Examinee: \_\_\_\_\_ Evaluator: \_\_\_\_\_

Job Title: \_\_\_\_\_ Date: \_\_\_\_\_

Start Time \_\_\_\_\_ Finish Time \_\_\_\_\_

PERFORMANCE RESULTS:

SAT: UNSAT: **COMMENTS/FEEDBACK: (Make written comments for any steps graded unsatisfactory).****EVALUATOR'S SIGNATURE:** \_\_\_\_\_

*NOTE: Only this page needs to be retained in examinee's record if completed satisfactorily. If unsatisfactory performance is demonstrated, the entire JPM should be retained.*

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.

**NI-5S, NIS POWER RANGE DAILY CALIBRATION, REV. 0****JPM BRIEFING/TURNOVER**

*You may use any approved reference materials normally available including logs. Make all written reports, oral reports, and log entries as if the evolution is actually being performed.*

*EOP Immediate Actions are required to be performed from memory. After completing immediate action steps without using the procedure, you may then use any approved reference materials.*

*If this JPM is performed on the simulator, the JPM administrator should only give cues that are not indicated on the simulator. If simulator indication is sufficient to indicate the completion of a step, the JPM administrator should not have to give a cue to the trainee to continue the evolution.*

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

**DURING THE JPM, ENSURE PROPER SAFETY PRECAUTIONS, FME, AND/OR RADIOLOGICAL CONCERNS AS APPLICABLE ARE FOLLOWED.****INITIAL CONDITIONS:**

- Unit 1 is at 50% power.
- A load change is NOT in progress.
- Load follow is NOT in progress.
- ERCS is out of service.
- SP 1005, NIS Power Range Daily Calibration, is complete up to step 8.2.
- Average Reactor Thermal Power has been calculated per SP 1005B and is 50.2%.

**INITIATING CUES:**

- The SS directs you perform steps 8.3 through 8.6 of SP 1005, NIS Power Range Daily Calibration.

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.



## NI-5S, NIS POWER RANGE DAILY CALIBRATION, REV. 0

JPM PERFORMANCE INFORMATION

**Required Materials:** Consumable copy of SP 1005 with section 6.0 complete, section 7.0 marked as N/A, and section 8.0 complete up to step 8.3.

**General References:** SP 1005, NIS POWER RANGE DAILY CALIBRATION

**Task Standards:** Examinee determines N41 requires a gain adjustment and adjusts the gain on N41 until N41 power is between 50.2% and 50.7%.

**Start Time:** \_\_\_\_\_

**NOTE:** When providing “Evaluator Cues” to the examinee, care must be exercised to avoid prompting the examinee. Typically cues are only provided when the examinee’s actions warrant receiving the information (i.e., the examinee looks or asks for the indication).

**IMPORTANT:** Critical steps are marked with a “Y” below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM, per FP-T-SAT-73, Licensed Operator Requalification Program Examinations.

<b>Performance Step:</b>	SP 1005 Step 8.3
<b>Critical <u>N</u></b>	Transfer the “AVERAGE” column numbers from Table 1, Part A to the appropriate “AVERAGE” column on Table 1, Part B.
<b>Standard:</b>	Examinee records 50.0 for N41, 50.4 for N42, 50.3 for N43, and 50.4 for N44 in the AVERAGE NIS INDICATED POWER blocks of Table 1, Part B.
<b>Performance:</b>	SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/>
<b>Comments:</b>	_____

<b>Performance Step:</b>	SP 1005 Step 8.4
<b>Critical <u>N</u></b>	Record Reactor Thermal Power from SP 1005B on Table 1, Part B.
<b>Standard:</b>	Examinee records 50.2 in the AVERAGE REACTOR THERMAL POWER block of Table 1, Part B.
<b>Performance:</b>	SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/>
<b>Comments:</b>	_____

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.

## NI-5S, NIS POWER RANGE DAILY CALIBRATION, REV. 0

<b>Performance Step:</b>	<b>SP 1005 Step 8.5</b>
<b>Critical <u>N</u></b>	<b>Complete the “DIFFERENCE” column in Table 1, Part B.</b>
<b>Standard:</b>	<b>Examinee records +0.2 for N41, -0.2 for N42, -0.1 for N43, and -0.2 for N44 in the DIFFERENCE blocks of Table 1, Part B.</b>
<b>Performance:</b>	<b>SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/></b>
<b>Comments:</b>	_____

<b>Performance Step:</b>	<b>SP 1005 Step 8.6</b>
<b>Critical <u>Y</u></b>	<b>If the difference column calculates to be a positive number OR:</b> <ul style="list-style-type: none"><li>• For normal plant conditions: is negative by more than 0.5,</li><li>• For load change conditions: is negative by greater than 2.0,</li></ul> <b>THEN calibrate channel gain as follows:</b>
<b>Standard:</b>	<b>Examinee determines N41 channel gain adjustment is required.</b>
<b>Performance:</b>	<b>SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/></b>
<b>Comments:</b>	_____

<b>Performance Step:</b>	<b>SP 1005 Step 8.6.1</b>
<b>Critical <u>N</u></b>	<b>IF NIS channel gain adjustment resulting in a greater than 2% change in NIS power is required, THEN the Shift Manager (SM) is to verify the validity of thermal power calculations.</b>
<b>Standard:</b>	<b>Examinee determines N41 channel gain adjustment is less than 2% and determines step is not applicable.</b>
<b>Performance:</b>	<b>SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/></b>
<b>Comments:</b>	_____

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.

## NI-5S, NIS POWER RANGE DAILY CALIBRATION, REV. 0

<b>Performance Step:</b>	<b>SP 1005 Step 8.6.2</b>
<b>Critical <u>N</u></b>	<b>Re-verify initial conditions, refer to Section 6.0.</b>
<b>Standard:</b>	<b>Examinee verifies initial conditions.</b>
<b>Evaluator Cue:</b>	<b>When examinee refers to section 6.0, then inform examinee initial conditions have been verified.</b>
<b>Performance:</b>	<b>SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/></b>
<b>Comments:</b>	_____

<b>Performance Step:</b>	<b>SP 1005 Step 8.6.3</b>
<b>Critical <u>N</u></b>	<b>Record "INITIAL GAIN SETTING" R303 for the NIS channel in Table 1, Part C</b>
<b>Standard:</b>	<b>Examinee records the initial gain setting for N41.</b>
<b>Performance:</b>	<b>SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/></b>
<b>Comments:</b>	_____

<b>Performance Step:</b>	<b>SP 1005 Step 8.6.4, Attachment B Step 1</b>
<b>Critical <u>Y</u></b>	<b>Unlock potentiometer.</b>
<b>Standard:</b>	<b>Examinee unlocks potentiometer.</b>
<b>Performance:</b>	<b>SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/></b>
<b>Comments:</b>	_____

<b>Performance Step:</b>	<b>SP 1005 Step 8.6.4, Attachment B Step 2</b>
<b>Critical <u>Y</u></b>	<b>Adjust the gain on the NIS POWER RANGE B drawer until NIS power is within the range of, equal to thermal power to 0.5% (2.0% for load change conditions) greater than thermal power.</b>
<b>Standard:</b>	<b>Examinee adjusts the gain on N41 until N41 power is between 50.2% and 50.7%.</b>
<b>Performance:</b>	<b>SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/></b>
<b>Comments:</b>	_____

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.

## NI-5S, NIS POWER RANGE DAILY CALIBRATION, REV. 0

<b>Performance Step:</b>	SP 1005 Step 8.6.4, Attachment B Step 3
<b>Critical <u>N</u></b>	Lock the potentiometer in place.
<b>Standard:</b>	Examinee locks the potentiometer in place.
<b>Performance:</b>	SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/>
<b>Comments:</b>	_____

<b>Performance Step:</b>	SP 1005 Step 8.6.5
<b>Critical <u>N</u></b>	Record the "FINAL GAIN SETTING" in Table 1, Part C
<b>Standard:</b>	Examinee records the final gain setting for N41.
<b>Performance:</b>	SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/>
<b>Comments:</b>	_____

**Terminating Cues:** When the examinee has determined N41 needs a gain adjustment and has adjusted the gain on N41 until N41 power is between 50.2% and 50.7%, then this JPM is complete.

**Stop Time:** \_\_\_\_\_

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.

## TURNOVER SHEET

### INITIAL CONDITIONS:

- Unit 1 is at 50% power.
- A load change is NOT in progress.
- Load follow is NOT in progress.
- ERCS is out of service.
- SP 1005, NIS Power Range Daily Calibration, is complete up to step 8.2.
- Average Reactor Thermal Power has been calculated per SP 1005B and is 50.2%.

### INITIATING CUES:

- The SS directs you perform steps 8.3 through 8.6 of SP 1005, NIS Power Range Daily Calibration.

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.

## NI-5S, NIS POWER RANGE DAILY CALIBRATION, REV. 0

**Simulator Setup:**

1. If available, reset the simulator to IC-268 and place in RUN.
2. If IC-268 is NOT available:
  - a. Reset to IC-8.
  - b. Place the simulator in RUN.
  - c. Slowly adjust the following remotes (one at a time):
    - 1) **NI141** until N41 is reading 50.0%.
    - 2) **NI142** until N42 is reading 50.4%.
    - 3) **NI143** until N43 is reading 50.3%.
    - 4) **NI144** until N44 is reading 50.4%.
3. Provide a marked up copy of SP 1005 (see link below).
4. Ensure N41 pot is adjusted back to its normal position when JPM is complete.



NI-5S SP 1005.PDF

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.

## NI-5S, NIS POWER RANGE DAILY CALIBRATION, REV. 0

## ATTACHMENT 1

## JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

ALL STEPS IN THIS CHECKLIST ARE TO BE PERFORMED UPON INITIAL VALIDATION AND PRIOR TO USE.

REVIEW STATEMENTS	YES	NO	N/A
1. Are all items on the cover page filled in correctly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2. Has the JPM been reviewed and validated by SMEs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Can the required conditions for the JPM be appropriately established in the simulator if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Do the performance steps accurately reflect trainee's actions in accordance with plant procedures?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5. Is the standard for each performance item specific as to what controls, indications and ranges are required to evaluate if the trainee properly performed the step?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6. If the task is NOT time critical, has the completion time been established based on validation data or incumbent experience?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. If the task is time critical, is the time critical portion based upon actual task performance requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Is the Licensee level appropriate for the task being evaluated if required? Not applicable to Non-Licensed Operators	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Is the K/A appropriate to the task and to the licensee level if required? Not applicable to Non-Licensed Operators	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Have the performance steps been identified and typed (Critical / Sequence / Time Critical) appropriately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
11. Have all special tools and equipment needed to perform the task been identified?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
12. Are all references identified, current, and accurate?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
13. Have all required cues (as anticipated) been identified for the evaluator to assist task completion?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

All applicable questions must be answered "YES" or the JPM is not valid for use. If all applicable questions are answered "YES" then the JPM is considered valid and can be performed as written. The individual(s) performing the validation sign and date this form.

\_\_\_\_\_  
Validation Personnel /Date

\_\_\_\_\_  
Validation Personnel/Date

\_\_\_\_\_  
Validation Personnel /Date

\_\_\_\_\_  
Validation Personnel/Date

\_\_\_\_\_  
Validation Personnel /Date

\_\_\_\_\_  
Validation Personnel/Date

\_\_\_\_\_  
Validation Personnel /Date

\_\_\_\_\_  
Validation Personnel/Date

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.

<b>SP</b>	<b>NIS POWER RANGE DAILY CALIBRATION</b>	NUMBER: <b>SP 1005</b>
		REV: <b>46</b>
		Page 1 of 13

<b>SYSTEMS:</b>	<b>NIS, ERCS</b>
-----------------	------------------

WO: \_\_\_\_\_

**RESULTS/COMMENTS:**

Work Request Initiated: YES \_\_\_\_\_ NO \_\_\_\_\_ No. \_\_\_\_\_

## Test Performance:

Performed By: \_\_\_\_\_ Date: \_\_\_\_\_  
(Signature or Initials)

## Additional Requirements:

NONE

## SP Completion:

Shift Supervisor: \_\_\_\_\_ Date: \_\_\_\_\_

SP Surveillance Schedule Satisfied. YES/NO Surv. Admin: \_\_\_\_\_

## Other Actions for Consideration:

Nuclear Engineer Review: \_\_\_\_\_ Date: \_\_\_\_\_

PORC REVIEW DATE: <b>NR</b>	OWNER: <b>M. Brossart</b>	EFFECTIVE DATE <b>1/7/13</b>
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		SURVEILLANCE PROCEDURE	
SP	NIS POWER RANGE DAILY CALIBRATION	NUMBER:	
			SP 1005
		REV:	46
		Page 2 of 13	

## 1.0 PURPOSE AND GENERAL DISCUSSION

### REFERENCE USE

- *Procedure segments may be performed from memory.*
- *Use the procedure to verify segments are complete.*
- *Mark off steps within segment before continuing.*
- *Procedure should be available at the work location.*

### 1.1 Purpose

This procedure is performed once per 24 hours and is not required to be performed until 12 hours after THERMAL POWER is  $\geq 15\%$  RTP per T.S. SR 3.3.1.2. Compare calorimetric to excore power indication and adjust excore channel gains to be consistent with calorimetric power, if the absolute difference is greater than 2%. This will assure conservatism for reactor protection and control.

X This procedure is credited by the license renewal program – Electrical Cables and Connectors Not Subject to 10 CFR 50.49 Environmental Qualification Requirements Used in Instrument Circuits Program (LR-AMP-431).

### 1.2 Acceptance Criteria

- 1.2.1 In the event Acceptance Criteria cannot be met, refer to Ops. Manual Section G, Surveillance And Periodic Test Program, for additional guidance.
- 1.2.2 Refer to T.S. 3.3.1 for entry into any LCO CONDITIONS as a result of not meeting acceptance criteria.

### 1.3 General Discussion

- 1.3.1 The pound sign (#) is not used because all the steps are performed inside the Control Room.
- 1.3.2 Steps identified by an asterisk (\*) are Acceptance Criteria.

<b>SP</b>	<b>NIS POWER RANGE DAILY CALIBRATION</b>	NUMBER: <b>SP 1005</b>
		REV: <b>46</b>
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## 2.0 REFERENCES

- 2.1 Tech Spec: T.S.3.3.1, Reactor Trip System (RTS) Instrumentation.
- 2.2 TRM 3.3.6, Leading Edge Flow Meter (LEFM)
- 2.3 Operating License DPR-42, Section 2.C.1
- 2.4 Ops Manual: B9A, Nuclear Instrumentation System
- 2.5 Technical Manual: XH-1-1931, Nuclear Instrumentation Technical Manual
- 2.6 Implementing Reference(s): NONE
- 2.7 INPO SEN 228
- 2.8 CAP 01030453, Possible power excursion above license level of 1650 MWth
- 2.9 SWI O-50, Reactivity Management
- X 2.10 H65, License Renewal Implementation and Aging Management Programs.
- N 2.11 NRC Commitment AR 01162898, LR Commitment 10 – Implement Program XI.E2, Electrical Cables and Connectors Not Subject to 10 CFR 50.49 Environmental Qualification Requirements Used in Instrument Circuits.

## 3.0 PRECAUTIONS AND LIMITATIONS

- 3.1 Perform NIS power range gain adjustments slowly to avoid inadvertent rate or high level channel trips.
- 3.2 IF ERCS is out-of-service OR computer inputs are invalid to the ERCS calculated reactor thermal power, THEN use SP 1005B, Alternative Reactor Thermal Power Calculations, to determine reactor thermal power.
- 3.3 IF this surveillance procedure is performed during reduced power as a result of load follow operation, THEN, perform NIS gain adjustment if NIS indicated power is less than reactor thermal power or if NIS indicated power exceeds reactor thermal power by greater than 2%.
- 3.4 After NIS power range calibration, each NIS channel indicated power should be equal to or greater than reactor thermal power to assure conservatism for reactor protection and control.

		SURVEILLANCE PROCEDURE	
SP	NIS POWER RANGE DAILY CALIBRATION	NUMBER:	SP 1005
		REV:	46
		Page 4 of 13	

**3.5** Turbine perturbation during performance of SP 1005 could cause non conservative NIS adjustment. Use diverse indications of Rx power and if needed perform procedure again.

**3.6** Instrument drift can cause the calorimetric calculation to become non-conservative. Diverse indications of Steam Pressure, Feedwater Temperature, and Feedwater Flow should be checked to ensure calorimetric inputs have not drifted.

#### **4.0 PERSONNEL AND SPECIAL EQUIPMENT REQUIREMENTS**

##### **4.1 Suggested Personnel**

One (1) Control Room Operator - to record data and make gain adjustments as necessary.

##### **4.2 Special Equipment**

NONE

#### **5.0 SPECIAL CONSIDERATIONS**

NONE

#### **6.0 PREREQUISITES AND INITIAL CONDITIONS**

**6.1** IF there has been a change of greater than 5% thermal power during the previous 48 hours, THEN perform tailgate with SS and discuss INPO SEN. 228.

**6.2** Power is greater than 15% rated thermal power.

**6.3**  $T_{AVE} = T_{REF} \pm 0.5^{\circ}\text{F}$ .

**6.4** Power is stable,  $\pm 1\%$ .

**6.5** SG level is stable.

SDS

SD1

SDS

SDS

SD1

<b>SP</b>	<b>NIS POWER RANGE DAILY CALIBRATION</b>	NUMBER: <b>SP 1005</b>
		REV: <b>46</b>
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<b>NOTE:</b>	IF ERCS is <u>NOT</u> available, <u>THEN</u> Reactor Thermal Power will be calculated utilizing SP 1005B, ALTERNATE CALCULATION OF REACTOR THERMAL POWER. Also in this condition the LEFM will not be inservice and the unit will be operating under the restrictions of TLCO 3.3.6 Condition C and/or D. Maximum Reactor Power will be restricted by these Conditions.
--------------	---

6.6 IF ERCS is available, THEN **check** the following instruments for drift using ERCS Server Group "SP1005V&V\_U1."

6.6.1 Steam Generator Pressure Channels on a common LOOP are within  $\pm 24$  psig.

N/A

6.6.2 Feedwater temperatures are within  $\pm 2$  deg F of each other:

N/A

- **1T0418A**, LOOP A STM GEN FW TEMP
- **1T0438A**, LOOP B STM GEN FW TEMP

6.6.3 Feedwater flows for a common LOOP are within  $\pm 0.05E \times 06$  (50,000) lbm/hr.

N/A

6.6.4 RCS Loop Delta T Channels are all less than 102%.

N/A

6.7 IF any parameter is outside of the above bands THEN:

6.7.1 **Notify** the Shift Supervisor.

N/A

6.7.2 **Evaluate** the effect of the out of band parameter on the calorimetric results. If required, consider performing Section 8.0 of this procedure and performing SP 1005B, Alternate Calculation of Reactor Thermal Power.

N/A

6.7.3 **Issue** a CAP identifying the out of band parameter and the results of the evaluation.

N/A

<b>SP</b>	<b>NIS POWER RANGE DAILY CALIBRATION</b>	NUMBER: <b>SP 1005</b>
		REV: <b>46</b>
		Page 6 of 13

**7.0 PROCEDURE: ERCS IN SERVICE**

**NOTE:** IF ERCS is available THEN do section 7.0 and NA Section 8.0 and Table 1. IF ERCS is NOT available, THEN do Section 8.0 and NA Section 7.0.

**X 7.1 Initiate ERCS NIS Power Range Calibration. (NISCAL)****7.1.1 Select** Collect Data.N/A**7.1.2 Record** NIS power range channels N41 thru N44 for first reading.N/A

N41	N42	N43	N44

**7.1.3 AFTER** second reading is taken by ERCS, THEN record NIS power range channels (N41 thru N44)N/A

N41	N42	N43	N44

**7.1.4 Initiate** CALM display in a new window.N/A**7.1.5 Select** Report and **print**.N/A**7.1.6 WHEN** third reading is taken by ERCS, THEN record NIS power range channels (N41 thru N44).N/A

N41	N42	N43	N44

**7.1.7 Enter** NIS values for first, second and third readings in ERCS.N/A**7.1.8 Select** calculate and **verify** ERCS updates.N/A

<b>SP</b>	<b>NIS POWER RANGE DAILY CALIBRATION</b>	NUMBER: <b>SP 1005</b>
		REV: <b>46</b>
		Page 7 of 13

<b>NOTE:</b>	Channels may be calibrated to provide more accurate results even if the adjustment is not required per Step 7.2.
<b>NOTE:</b>	If this procedure is performed at unit conditions other than full power, refer to Precaution 3.3

7.2 IF the difference column calculates to be a positive number OR:

- For normal plant conditions: is negative by more than 0.5,
- For load change conditions: is negative by greater than 2.0,

THEN **calibrate** channel gain as follows:

7.2.1 IF NIS channel gain adjustment resulting in a greater than 2% change in NIS power is required, THEN the Shift Manager (SM) is to verify the validity of thermal power calculations.

N/A  
SM

7.2.2 **Re-verify** initial conditions, refer to Section 6.0.

N/A

7.2.3 **Perform** Attachment A.

N/A

7.3 **Select** SAVE GAINS AND GENERATE REPORTS and print.

N/A

X 7.4 **Attach** Calorimetric Report Summary and NIS Power Range Calibration report to this surveillance.

N/A

X \* 7.5 **Check** that the indicated power on each excore channel is within  $\pm 2\%$  of reactor thermal power.

N/A

7.6 IF the "FINAL GAIN SETTING" is less than 2.00 OR greater than 8.00, THEN **initiate** a work request to adjust the gain for the affected channels.

N/A

<h1>SP</h1>	<h2>NIS POWER RANGE DAILY CALIBRATION</h2>	NUMBER: <b>SP 1005</b>
		REV: <b>46</b>
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### X 8.0 PROCEDURE: ERCS OUT OF SERVICE

<b>NOTE:</b>	IF ERCS is available, <u>THEN</u> do Section 7.0 and NA Section 8.0 and Table 1. IF ERCS is <u>NOT</u> available, <u>THEN</u> do Section 8.0 and NA Section 7.0.
--------------	--

#### 8.1 Initiate manual data collection.

<b>NOTE:</b>	The Data collected in Step 8.1 should be collected as close as practical to the same time the data is collected in SP 1005B for step 8.4 of this procedure.
--------------	---

##### 8.1.1 Record the following on Table 1, Part A 1<sup>st</sup> Reading.

- Time of reading. SDS
- NIS power range channels (N41 thru N44). SD

##### 8.1.2 Approximately five minutes after the first reading, record the following on Table 1, Part A 2<sup>nd</sup> Reading.

- Time of reading. SD
- NIS power range channels (N41 thru N44). SD

##### 8.1.3 Approximately five minutes after the second reading, record the following on Table 1, Part A 3<sup>rd</sup> Reading.

- Time of reading. SD
- NIS power range channels (N41 thru N44). SD

#### 8.2 Complete the "AVERAGE" column in Table 1, Part A. SD

#### 8.3 Transfer the "AVERAGE" column numbers from Table 1, Part A to the appropriate "AVERAGE" column on Table 1, Part B. SD

#### 8.4 Record Reactor Thermal Power from SP 1005B on Table 1, Part B. SD

#### 8.5 Complete the "DIFFERENCE" column in Table 1, Part B. SD

<b>SP</b>	<b>NIS POWER RANGE DAILY CALIBRATION</b>	NUMBER: <b>SP 1005</b>
		REV: <b>46</b>
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<b>NOTE</b>	Channels may be calibrated to provide more accurate results even if the adjustment is not required per Step 8.6.
<b>NOTE</b>	If this procedure is performed at unit conditions other than full power, refer to precaution 3.3.

8.6 IF the difference column calculates to be a positive number OR:

- For normal plant conditions: is negative by more than 0.5,
- For load change conditions: is negative by greater than 2.0,

THEN **calibrate** channel gain as follows:

8.6.1 IF NIS channel gain adjustment resulting in a greater than 2% change in NIS power is required, THEN the Shift Manager (SM) is to verify the validity of thermal power calculations.

N/A  
SM

8.6.2 **Re-verify** initial conditions, refer to Section 6.0.

SD1

8.6.3 **Record** "INITIAL GAIN SETTING" R303 for the NIS channel in Table 1, Part C.

8.6.4 **Perform** Attachment B.

8.6.5 **Record** the "FINAL GAIN SETTING" in Table 1, Part C.

\* 8.7 **Check** that the indicated power on each excore channel is within  $\pm 2\%$  of reactor thermal power.

8.8 IF the "FINAL GAIN SETTING" is less than 2.00 OR greater than 8.00, THEN **initiate** a work request to adjust the gain for the affected channels.

## 9.0 ADDITIONAL REQUIREMENTS

NONE



SURVEILLANCE PROCEDURE		
SP	NIS POWER RANGE DAILY CALIBRATION	NUMBER: SP 1005
		REV: 46
		Page 10 of 13

**10.0 ATTACHMENTS**

- 10.1** Table 1 - Unit 1 NIS Power Range Daily Calibration
- 10.2** Attachment A – Unit 1 NIS Power Range Gain Adjustment ERCS In Service
- 10.3** Attachment B - Unit 1 NIS Power Range Gain Adjustment ERCS Out Of Service

<b>SP</b>	<b>NIS POWER RANGE DAILY CALIBRATION</b>	NUMBER:
		<b>SP 1005</b>
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Table 1 Unit 1 NIS Power Range Daily Calibration

## X PART - A (INITIAL AND AVERAGE READINGS):

	1 <sup>st</sup> Reading	2 <sup>nd</sup> Reading	3 <sup>rd</sup> Reading
TIME	1000	1005	1010

NIS. IND PWR			
N41	50.0	50.0	50.0
N42	50.2	50.2	50.2
N43	50.3	50.3	50.3
N44	50.4	50.4	50.4

AVG. NIS IND. PWR
50.0
50.2
50.3
50.4

## X PART - B (CALCULATED AVERAGE DIFFERENCE):

NIS CHANNEL	AVERAGE REACTOR THERMAL POWER	(MINUS)	AVERAGE NIS INDICATED POWER	(EQUALS)	(DIFFERENCE)
(N41)	50.2	-	50.0	=	+ 0.2
(N42)		-	50.2	=	- 0.0
(N43)		-	50.3	=	- 0.1
(N44)		-	50.4	=	- 0.2

## X PART - C (INITIAL AND FINAL GAIN SETTINGS):

NIS CHANNEL	INITIAL GAIN SETTING	FINAL GAIN SETTING
(N41)		
(N42)		
(N43)		
(N44)		

<b>SP</b>	<b>NIS POWER RANGE DAILY CALIBRATION</b>	NUMBER: <b>SP 1005</b>
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## Attachment A Unit 1 NIS Power Range Gain Adjustment ERCS In Service

<b>NOTE:</b>	Complete table for NIS Channels which require calibration. NA steps if calibration is not required.
--------------	---

<b>NOTE:</b>	The meter response during the gain adjustment could be delayed up to 6 seconds. Make adjustments slowly to avoid overshoot and possible channel trip.
--------------	---

	NIS CHANNEL	(N41)	(N42)	(N43)	(N44)
1.	<b>Record</b> initial gain setting in ERCS.				
2.	<b>Verify</b> "INITIAL GAIN SETTING" R303 for the NIS channel in ERCS.				
3.	<b>Unlock</b> potentiometer.				
4.	<b>Adjust</b> the gain on the NIS POWER RANGE B drawer until NIS power is within the range of, equal to thermal power to 0.5% (2.0% for load change conditions) greater than thermal power.				
5.	<b>Lock</b> the potentiometer in place.				
6.	<b>Record</b> final R303 (Gain potentiometer) setting.				
7.	<b>Record</b> the "FINAL GAIN SETTING" in ERCS.				

Nuclear Generating Plant		SURVEILLANCE PROCEDURE	
SP	NIS POWER RANGE DAILY CALIBRATION	NUMBER:	SP 1005
		REV:	46
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**Attachment B Unit 1 NIS Power Range Gain Adjustment ERCS Out of Service****NOTE:**

Complete table for NIS Channels which require calibration.  
NA steps if calibration is not required.

**NOTE:**

The meter response during the gain adjustment could be delayed up to 6 seconds. Make adjustments slowly to avoid overshoot and possible channel trip.

	NIS CHANNEL	(N41)	(N42)	(N43)	(N44)
1.	Unlock potentiometer.				
2.	Adjust the gain on the NIS POWER RANGE B drawer until NIS power is within the range of, equal to thermal power to 0.5% (2.0% for load change conditions) greater than thermal power.				
3.	Lock the potentiometer in place.				

<b>SP</b>	<b>NIS POWER RANGE DAILY CALIBRATION</b>	NUMBER: <b>SP 1005</b>
		REV: <b>46</b>
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<b>SYSTEMS:</b>	<b>NIS, ERCS</b>
-----------------	------------------

WO: \_\_\_\_\_

**RESULTS/COMMENTS:**

Work Request Initiated: YES \_\_\_\_\_ NO \_\_\_\_\_ No. \_\_\_\_\_

## Test Performance:

Performed By: \_\_\_\_\_ Date: \_\_\_\_\_  
(Signature or Initials)

## Additional Requirements:

NONE

## SP Completion:

Shift Supervisor: \_\_\_\_\_ Date: \_\_\_\_\_

SP Surveillance Schedule Satisfied. YES/NO Surv. Admin: \_\_\_\_\_

## Other Actions for Consideration:

Nuclear Engineer Review: \_\_\_\_\_ Date: \_\_\_\_\_

PORC REVIEW DATE: <b>NR</b>	OWNER: <b>M. Brossart</b>	EFFECTIVE DATE <b>1/7/13</b>
--------------------------------	------------------------------	---------------------------------

<b>SP</b>	<b>NIS POWER RANGE DAILY CALIBRATION</b>	NUMBER: <b>SP 1005</b>
		REV: <b>46</b>
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## 1.0 PURPOSE AND GENERAL DISCUSSION

<b>REFERENCE USE</b>
<ul style="list-style-type: none"> <li>• <i>Procedure segments may be performed from memory.</i></li> <li>• <i>Use the procedure to verify segments are complete.</i></li> <li>• <i>Mark off steps within segment before continuing.</i></li> <li>• <i>Procedure should be available at the work location.</i></li> </ul>

### 1.1 Purpose

This procedure is performed once per 24 hours and is not required to be performed until 12 hours after THERMAL POWER is  $\geq 15\%$  RTP per T.S. SR 3.3.1.2. Compare calorimetric to excore power indication and adjust excore channel gains to be consistent with calorimetric power, if the absolute difference is greater than 2%. This will assure conservatism for reactor protection and control.

X This procedure is credited by the license renewal program – Electrical Cables and Connectors Not Subject to 10 CFR 50.49 Environmental Qualification Requirements Used in Instrument Circuits Program (LR-AMP-431).

### 1.2 Acceptance Criteria

- 1.2.1** In the event Acceptance Criteria cannot be met, refer to Ops. Manual Section G, Surveillance And Periodic Test Program, for additional guidance.
- 1.2.2** Refer to T.S. 3.3.1 for entry into any LCO CONDITIONS as a result of not meeting acceptance criteria.

### 1.3 General Discussion

- 1.3.1** The pound sign (#) is not used because all the steps are performed inside the Control Room.
- 1.3.2** Steps identified by an asterisk (\*) are Acceptance Criteria.

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		<b>SP 1005</b>
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## 2.0 REFERENCES

- 2.1 Tech Spec: T.S.3.3.1, Reactor Trip System (RTS) Instrumentation.
- 2.2 TRM 3.3.6, Leading Edge Flow Meter (LEFM)
- 2.3 Operating License DPR-42, Section 2.C.1
- 2.4 Ops Manual: B9A, Nuclear Instrumentation System
- 2.5 Technical Manual: XH-1-1931, Nuclear Instrumentation Technical Manual
- 2.6 Implementing Reference(s): NONE
- 2.7 INPO SEN 228
- 2.8 CAP 01030453, Possible power excursion above license level of 1650 MWth
- 2.9 SWI O-50, Reactivity Management
- X 2.10 H65, License Renewal Implementation and Aging Management Programs.
- N 2.11 NRC Commitment AR 01162898, LR Commitment 10 – Implement Program XI.E2, Electrical Cables and Connectors Not Subject to 10 CFR 50.49 Environmental Qualification Requirements Used in Instrument Circuits.

## 3.0 PRECAUTIONS AND LIMITATIONS

- 3.1 Perform NIS power range gain adjustments slowly to avoid inadvertent rate or high level channel trips.
- 3.2 IF ERCS is out-of-service OR computer inputs are invalid to the ERCS calculated reactor thermal power, THEN use SP 1005B, Alternative Reactor Thermal Power Calculations, to determine reactor thermal power.
- 3.3 IF this surveillance procedure is performed during reduced power as a result of load follow operation, THEN, perform NIS gain adjustment if NIS indicated power is less than reactor thermal power or if NIS indicated power exceeds reactor thermal power by greater than 2%.
- 3.4 After NIS power range calibration, each NIS channel indicated power should be equal to or greater than reactor thermal power to assure conservatism for reactor protection and control.

<b>SP</b>	<b>NIS POWER RANGE DAILY CALIBRATION</b>	<b>NUMBER:</b>
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- 3.5** Turbine perturbation during performance of SP 1005 could cause non conservative NIS adjustment. Use diverse indications of Rx power and if needed perform procedure again.
- 3.6** Instrument drift can cause the calorimetric calculation to become non-conservative. Diverse indications of Steam Pressure, Feedwater Temperature, and Feedwater Flow should be checked to ensure calorimetric inputs have not drifted.

#### **4.0 PERSONNEL AND SPECIAL EQUIPMENT REQUIREMENTS**

##### **4.1 Suggested Personnel**

One (1) Control Room Operator - to record data and make gain adjustments as necessary.

##### **4.2 Special Equipment**

NONE

#### **5.0 SPECIAL CONSIDERATIONS**

NONE

#### **6.0 PREREQUISITES AND INITIAL CONDITIONS**

- 6.1** IF there has been a change of greater than 5% thermal power during the previous 48 hours, THEN perform tailgate with SS and discuss INPO SEN. 228.
- 6.2** Power is greater than 15% rated thermal power.
- 6.3**  $T_{AVE} = T_{REF} \pm 0.5^{\circ}\text{F}$ .
- 6.4** Power is stable,  $\pm 1\%$ .
- 6.5** SG level is stable.

SDS

SDS


SDS

SDS

SDS



<b>SP</b>	<b>NIS POWER RANGE DAILY CALIBRATION</b>	<b>NUMBER:</b> <b>SP 1005</b>
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	<p>IF ERCS is <u>NOT</u> available, <u>THEN</u> Reactor Thermal Power will be calculated utilizing SP 1005B, ALTERNATE CALCULATION OF REACTOR THERMAL POWER. Also in this condition the LEFM will not be inservice and the unit will be operating under the restrictions of TLCO 3.3.6 Condition C and/or D. Maximum Reactor Power will be restricted by these Conditions.</p>
---	--

6.6 IF ERCS is available, THEN check the following instruments for drift using ERCS Server Group "SP1005V&V\_U1."

6.6.1 Steam Generator Pressure Channels on a common LOOP are within  $\pm 24$  psig.

N/A

6.6.2 Feedwater temperatures are within  $\pm 2$  deg F of each other:

N/A

- 1T0418A, LOOP A STM GEN FW TEMP
- 1T0438A, LOOP B STM GEN FW TEMP

6.6.3 Feedwater flows for a common LOOP are within  $\pm 0.05E \times 06$  (50,000) lbm/hr.

N/A

6.6.4 RCS Loop Delta T Channels are all less than 102%.

N/A

6.7 IF any parameter is outside of the above bands THEN:

6.7.1 **Notify** the Shift Supervisor.

N/A

6.7.2 **Evaluate** the effect of the out of band parameter on the calorimetric results. If required, consider performing Section 8.0 of this procedure and performing SP 1005B, Alternate Calculation of Reactor Thermal Power.

N/A

6.7.3 **Issue** a CAP identifying the out of band parameter and the results of the evaluation.

N/A

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**7.0 PROCEDURE: ERCS IN SERVICE**

**NOTE:** IF ERCS is available THEN do section 7.0 and NA Section 8.0 and Table 1. IF ERCS is NOT available, THEN do Section 8.0 and NA Section 7.0.

**X 7.1 Initiate ERCS NIS Power Range Calibration. (NISCAL)****7.1.1 Select** Collect Data.N/A**7.1.2 Record** NIS power range channels N41 thru N44 for first reading.N/A

N41	N42	N43	N44

**7.1.3 AFTER** second reading is taken by ERCS, THEN record NIS power range channels (N41 thru N44)N/A

N41	N42	N43	N44

**7.1.4 Initiate** CALM display in a new window.N/A**7.1.5 Select** Report and **print**.N/A**7.1.6 WHEN** third reading is taken by ERCS, THEN record NIS power range channels (N41 thru N44).N/A

N41	N42	N43	N44

**7.1.7 Enter** NIS values for first, second and third readings in ERCS.N/A**7.1.8 Select** calculate and **verify** ERCS updates.N/A

<b>SP</b>	<b>NIS POWER RANGE DAILY CALIBRATION</b>	<b>NUMBER:</b>
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<b>NOTE:</b>	Channels may be calibrated to provide more accurate results even if the adjustment is not required per Step 7.2.
--------------	--

<b>NOTE:</b>	If this procedure is performed at unit conditions other than full power, refer to Precaution 3.3
--------------	--

7.2 IF the difference column calculates to be a positive number OR:

- For normal plant conditions: is negative by more than 0.5,
- For load change conditions: is negative by greater than 2.0,

THEN **calibrate** channel gain as follows:

7.2.1 IF NIS channel gain adjustment resulting in a greater than 2% change in NIS power is required, THEN the Shift Manager (SM) is to verify the validity of thermal power calculations.

N/A  
SM

7.2.2 **Re-verify** initial conditions, refer to Section 6.0.

N/A

7.2.3 **Perform** Attachment A.

N/A

7.3 **Select** SAVE GAINS AND GENERATE REPORTS and print.

N/A

x 7.4 **Attach** Calorimetric Report Summary and NIS Power Range Calibration report to this surveillance.

N/A

x \* 7.5 **Check** that the indicated power on each excore channel is within  $\pm 2\%$  of reactor thermal power.

N/A

7.6 IF the "FINAL GAIN SETTING" is less than 2.00 OR greater than 8.00, THEN **initiate** a work request to adjust the gain for the affected channels.

N/A

<b>SP</b>	<b>NIS POWER RANGE DAILY CALIBRATION</b>	NUMBER: <b>SP 1005</b>
		REV: <b>46</b>
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**X 8.0 PROCEDURE: ERCS OUT OF SERVICE**

<b>NOTE:</b>	<u>IF</u> ERCS is available, <u>THEN</u> do Section 7.0 and NA Section 8.0 and Table 1. <u>IF</u> ERCS is <u>NOT</u> available, <u>THEN</u> do Section 8.0 and NA Section 7.0.
--------------	--

**8.1 Initiate** manual data collection.

<b>NOTE:</b>	The Data collected in Step 8.1 should be collected as close as practical to the same time the data is collected in SP 1005B for step 8.4 of this procedure.
--------------	---

**8.1.1 Record** the following on Table 1, Part A 1<sup>st</sup> Reading.

- Time of reading. SDS
- NIS power range channels (N41 thru N44). SDS

**8.1.2** Approximately five minutes after the first reading, **record** the following on Table 1, Part A 2<sup>nd</sup> Reading.

- Time of reading. SDS
- NIS power range channels (N41 thru N44). SDS

**8.1.3** Approximately five minutes after the second reading, **record** the following on Table 1, Part A 3<sup>rd</sup> Reading.

- Time of reading. SDS
- NIS power range channels (N41 thru N44). SDS

**8.2 Complete** the "AVERAGE" column in Table 1, Part A. SDS**8.3 Transfer** the "AVERAGE" column numbers from Table 1, Part A to the appropriate "AVERAGE" column on Table 1, Part B. \_\_\_\_\_**8.4** Record Reactor Thermal Power from SP 1005B on Table 1, Part B. \_\_\_\_\_**8.5 Complete** the "DIFFERENCE" column in Table 1, Part B. \_\_\_\_\_

		SURVEILLANCE PROCEDURE	
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**NOTE:**

Channels may be calibrated to provide more accurate results even if the adjustment is not required per Step 8.6.

**NOTE:**

If this procedure is performed at unit conditions other than full power, refer to precaution 3.3.

**8.6** IF the difference column calculates to be a positive number OR:

- For normal plant conditions: is negative by more than 0.5,
- For load change conditions: is negative by greater than 2.0,

THEN **calibrate** channel gain as follows:

**8.6.1** IF NIS channel gain adjustment resulting in a greater than 2% change in NIS power is required, THEN the Shift Manager (SM) is to verify the validity of thermal power calculations.

\_\_\_\_\_  
SM  
\_\_\_\_\_

**8.6.2** **Re-verify** initial conditions, refer to Section 6.0.

\_\_\_\_\_

**8.6.3** **Record** "INITIAL GAIN SETTING" R303 for the NIS channel in Table 1, Part C.

\_\_\_\_\_

**8.6.4** **Perform** Attachment B.

\_\_\_\_\_

**8.6.5** **Record** the "FINAL GAIN SETTING" in Table 1, Part C.

\_\_\_\_\_

\* **8.7** **Check** that the indicated power on each excore channel is within  $\pm 2\%$  of reactor thermal power.

\_\_\_\_\_

**8.8** IF the "FINAL GAIN SETTING" is less than 2.00 OR greater than 8.00, THEN **initiate** a work request to adjust the gain for the affected channels.

\_\_\_\_\_

**9.0 ADDITIONAL REQUIREMENTS**

NONE

<b>SP</b>	<b>NIS POWER RANGE DAILY CALIBRATION</b>	<b>NUMBER:</b>
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**10.0 ATTACHMENTS**

- 10.1** Table 1 - Unit 1 NIS Power Range Daily Calibration
- 10.2** Attachment A – Unit 1 NIS Power Range Gain Adjustment ERCS In Service
- 10.3** Attachment B - Unit 1 NIS Power Range Gain Adjustment ERCS Out Of Service

<b>SP</b>	<b>NIS POWER RANGE DAILY CALIBRATION</b>	NUMBER: <b>SP 1005</b>
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Table 1 Unit 1 NIS Power Range Daily Calibration

## X PART - A (INITIAL AND AVERAGE READINGS):

	1 <sup>st</sup> Reading	2 <sup>nd</sup> Reading	3 <sup>rd</sup> Reading
<b>TIME</b>	1000	1005	1010

NIS.  
IND PWR

N41	50.0	50.0	50.0
N42	50.4	50.4	50.4
N43	50.3	50.3	50.3
N44	50.4	50.4	50.4

AVG. NIS  
IND. PWR

50.0
50.4
50.3
50.4

## X PART - B (CALCULATED AVERAGE DIFFERENCE):

NIS CHANNEL	AVERAGE REACTOR THERMAL POWER	(MINUS)	AVERAGE NIS INDICATED POWER	(EQUALS)	(DIFFERENCE)
(N41)		-		=	
(N42)		-		=	
(N43)		-		=	
(N44)		-		=	

## X PART - C (INITIAL AND FINAL GAIN SETTINGS):

NIS CHANNEL	INITIAL GAIN SETTING	FINAL GAIN SETTING
(N41)		
(N42)		
(N43)		
(N44)		

<b>SP</b>	<b>NIS POWER RANGE DAILY CALIBRATION</b>	<b>NUMBER:</b>
		<b>SP 1005</b>
		<b>REV: 46</b>
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## Attachment A Unit 1 NIS Power Range Gain Adjustment ERCS In Service

<b>NOTE:</b>	Complete table for NIS Channels which require calibration. NA steps if calibration is not required.
--------------	---

<b>NOTE:</b>	The meter response during the gain adjustment could be delayed up to 6 seconds. Make adjustments slowly to avoid overshoot and possible channel trip.
--------------	---

	NIS CHANNEL	(N41)	(N42)	(N43)	(N44)
1.	<b>Record</b> initial gain setting in ERCS.				
2.	<b>Verify</b> "INITIAL GAIN SETTING" R303 for the NIS channel in ERCS.				
3.	<b>Unlock</b> potentiometer.				
4.	<b>Adjust</b> the gain on the NIS POWER RANGE B drawer until NIS power is within the range of, equal to thermal power to 0.5% (2.0% for load change conditions) greater than thermal power.				
5.	<b>Lock</b> the potentiometer in place.				
6.	<b>Record</b> final R303 (Gain potentiometer) setting.				
7.	<b>Record</b> the "FINAL GAIN SETTING" in ERCS.				



<b>SP</b>	<b>NIS POWER RANGE DAILY CALIBRATION</b>	<b>NUMBER:</b>
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### Attachment B Unit 1 NIS Power Range Gain Adjustment ERCS Out of Service

**NOTE:**

Complete table for NIS Channels which require calibration.  
NA steps if calibration is not required.

**NOTE:**

The meter response during the gain adjustment could be delayed up to 6 seconds. Make adjustments slowly to avoid overshoot and possible channel trip.

	NIS CHANNEL	(N41)	(N42)	(N43)	(N44)
1.	Unlock potentiometer.				
2.	Adjust the gain on the NIS POWER RANGE B drawer until NIS power is within the range of, equal to thermal power to 0.5% (2.0% for load change conditions) greater than thermal power.				
3.	Lock the potentiometer in place.				



## JOB PERFORMANCE MEASURE (JPM)

**SITE:** PRAIRIE ISLAND

**JPM TITLE:** INSTRUMENT AIR SYSTEM HIGH PRESSURE

**JPM NUMBER:** SA-4SF **REV.** 0

**RELATED PRA INFORMATION:** IMPORTANT COMPONENT – 121 STA AIR COMPR  
IMPORTANT COMPONENT – 122 STA AIR COMPR

**TASK NUMBERS / TASK TITLE(S):** CRO 078 003 01 01 000 / MONITOR INSTRUMENT & STATION AIR SYSTEM  
CRO 078 004 01 01 000 / SHIFT 121/122/123 AIR COMPRESSORS

**K/A NUMBERS:** 078 A3.01 (3.1/3.2)

## APPLICABLE METHOD OF TESTING:

Discussion: ☐ Simulate/walkthrough: ☐ Perform: ☒

**EVALUATION LOCATION:** In-Plant: ☐ Control Room: ☐  
Simulator: ☒ Other: ☐  
Lab: ☐

Time for Completion: 11 Minutes Time Critical: NO

Alternate Path: YES

**TASK APPLICABILITY:** SRO: ☒ RO: ☒ NLO ☐

Additional site-specific signatures may be added as desired.

<b>Developed by:</b>	<b>Shawn Sarrasin</b>	<b>1/18/2014</b>
	Developer	Date
<b>Validated by:</b>	<b>Fredrick Collins</b>	<b>1/18/2014</b>
	Validator	Date
	(See JPM Validation Checklist, Attachment 1)	
<b>Approved by:</b>	<b>Travis Ouret</b>	<b>7/18/2014</b>
	Training Supervisor	Date

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.

## SA-4SF, INSTRUMENT AIR SYSTEM HIGH PRESSURE, REV. 0

JPM Number: SA-4SFJPM Title: INSTRUMENT AIR SYSTEM HIGH PRESSURE

Examinee: \_\_\_\_\_ Evaluator: \_\_\_\_\_

Job Title: \_\_\_\_\_ Date: \_\_\_\_\_

Start Time \_\_\_\_\_ Finish Time \_\_\_\_\_

PERFORMANCE RESULTS:

SAT: UNSAT: **COMMENTS/FEEDBACK: (Make written comments for any steps graded unsatisfactory).****EVALUATOR'S SIGNATURE:** \_\_\_\_\_

*NOTE: Only this page needs to be retained in examinee's record if completed satisfactorily. If unsatisfactory performance is demonstrated, the entire JPM should be retained.*

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.

**SA-4SF, INSTRUMENT AIR SYSTEM HIGH PRESSURE, REV. 0****JPM BRIEFING/TURNOVER**

*You may use any approved reference materials normally available including logs. Make all written reports, oral reports, and log entries as if the evolution is actually being performed.*

*EOP Immediate Actions are required to be performed from memory. After completing immediate action steps without using the procedure, you may then use any approved reference materials.*

*If this JPM is performed on the simulator, the JPM administrator should only give cues that are not indicated on the simulator. If simulator indication is sufficient to indicate the completion of a step, the JPM administrator should not have to give a cue to the trainee to continue the evolution.*

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

**DURING THE JPM, ENSURE PROPER SAFETY PRECAUTIONS, FME, AND/OR RADIOLOGICAL CONCERNS AS APPLICABLE ARE FOLLOWED.****INITIAL CONDITIONS:**

- Unit 1 is at 100%.
- 121 Air Compressor is RUNNING in PREFERRED.
- 122 Air Compressor is NOT running and in 1<sup>ST</sup> STANDBY.
- 123 Air Compressor is NOT running and in 2<sup>ND</sup> STANDBY.
- The Station Air System is supplementing the Instrument Air System per Section 5.1.3 of C34, STATION AIR SYSTEM.
- A satisfactory pre-start check of 122 Air Compressor has been performed by an out-plant operator.
- An out-plant operator is standing by to perform post-start checks of 122 Air Compressor.

**INITIATING CUES:**

- The SS directs you to perform Section 5.4.1 of C34, STATION AIR, to START 122 Air Compressor and SECURE 121 Air Compressor.

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.

## SA-4SF, INSTRUMENT AIR SYSTEM HIGH PRESSURE, REV. 0

**JPM PERFORMANCE INFORMATION****Required Materials:** NONE**General References:** C34, STATION AIR  
C47023-0503, INST AIR HEADER HI PRESS**Task Standards:** Examinee starts 122 Air Compressor, places 121 Air Compressor in PULLOUT, and responds to the high Instrument air pressure by placing 122 Air Compressor in PULLOUT.**Start Time:** \_\_\_\_\_**NOTE:** When providing “Evaluator Cues” to the examinee, care must be exercised to avoid prompting the examinee. Typically cues are only provided when the examinee’s actions warrant receiving the information (i.e., the examinee looks or asks for the indication).**IMPORTANT:** Critical steps are marked with a “Y” below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM, per FP-T-SAT-73, Licensed Operator Requalification Program Examinations.

<b>Performance Step:</b>	C34, STATION AIR SYSTEM, Step 5.4.1.A.1
<b>Critical <u>N</u></b>	Place the selector switch for the compressor to be started “PREFERRED”: <ul style="list-style-type: none"> <li>• <del>CS-49010, 121 AIR COMPR PRFRD/1STBY/2STBY</del> OR</li> <li>• CS-49011, 122 AIR COMPR PRFRD/1STBY/2STBY OR</li> <li>• <del>CS-49012, 123 AIR COMPR PRFRD/1STBY/2STBY</del></li> </ul>
<b>Standard:</b>	Examinee places 122 Air Compressor in “PREFERRED” using CS-49011.
<b>Performance:</b>	SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/>
<b>Comments:</b>	_____

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.

## SA-4SF, INSTRUMENT AIR SYSTEM HIGH PRESSURE, REV. 0

Performance Step:  
Critical Y

**C34, STATION AIR SYSTEM, Step 5.4.1.A.2**

Start the selected compressor by taking the START/STOP switch to "START":

- ~~CS-46096, 121 AIR COMPR START/STOP~~
- OR
- CS-46097, 122 AIR COMPR START/STOP
- OR
- ~~CS-46098, 123 AIR COMPR START/STOP~~

Standard:

Examinee starts 122 Air Compressor using CS-46097.

Performance:

SATISFACTORY ☐ UNSATISFACTORY ☐

Comments:

\_\_\_\_\_

Performance Step:  
Critical N

**C34, STATION AIR SYSTEM, Step 5.4.1.A.3**

Locally check the compressor just started AND verify it is operating properly per Section 5.5.

Standard:

Examinee directs an out-plant operator to check 122 Air Compressor is operating properly per Section 5.5.

Evaluator Cue:

When the examinee directs an out-plant operator to check 122 Air Compressor, inform examinee that an out-plant operator has verified 122 Air Compressor is operating properly per Section 5.5.

Performance:

SATISFACTORY ☐ UNSATISFACTORY ☐

Comments:

\_\_\_\_\_

## SA-4SF, INSTRUMENT AIR SYSTEM HIGH PRESSURE, REV. 0

<b>Performance Step:</b>	<b>C34, STATION AIR SYSTEM, Step 5.4.1.B</b>
<b>Critical <u>Y</u></b>	<b>Stop the compressor to be shut down as follows:</b> <ol style="list-style-type: none"> <li>1. Stop the selected compressor by placing its control switch to "PULLOUT": <ul style="list-style-type: none"> <li>• CS-46096, 121 AIR COMPR START/STOP OR</li> <li>• <del>CS-46097, 122 AIR COMPR START/STOP</del> OR</li> <li>• <del>CS-46098, 123 AIR COMPR START/STOP</del></li> </ul> </li> </ol>
<b>Standard:</b>	Examinee stops 121 Air Compressor by placing CS-46096 in "PULLOUT".
<b>Evaluator Cue:</b>	When 122 Air Compressor has been started AND 121 Air Compressor has been placed in PULLOUT, verify AUTO TRIGGER 1 has inserted to cause an unloader failure on 122 Air Compressor. The unloader will fail close and cause instrument air pressure to slowly rise.
<b>Performance:</b>	SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/>
<b>Comments:</b>	_____

<b>Performance Step:</b>	<b>C34, STATION AIR SYSTEM, Step 5.4.1.B</b>
<b>Critical <u>N</u></b>	<b>Stop the compressor to be shut down as follows:</b> <ol style="list-style-type: none"> <li>2. Place the selector switch for the shutdown compressor in "1ST STANDBY": <ul style="list-style-type: none"> <li>• CS-49010, 121 AIR COMPR PRFRD/1STBY/2STBY OR</li> <li>• <del>CS-49011, 122 AIR COMPR PRFRD/1STBY/2STBY</del> OR</li> <li>• <del>CS-49012, 123 AIR COMPR PRFRD/1STBY/2STBY</del></li> </ul> </li> </ol>
<b>Standard:</b>	Examinee places 121 Air Compressor in "1ST STANDBY" using CS-49010.
<b>Evaluator Note:</b>	If the examinee notices the Instrument Air header high pressure and/or transitions to C47023-0503, then this step is NOT applicable.
<b>Performance:</b>	SATISFACTORY <input type="checkbox"/> UNSATISFACTORY <input type="checkbox"/> NOT APPLICABLE <input type="checkbox"/>
<b>Comments:</b>	_____

**ALTERNATE PATH STARTS HERE**

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.

## SA-4SF, INSTRUMENT AIR SYSTEM HIGH PRESSURE, REV. 0

**Performance Step:** C47023-0503, INSTR AIR HEADER HI PRESS, Step 1  
**Critical N** Check instrument air header pressure.

**Standard:** Examinee determines instrument air header pressure is too high.

**Performance:** SATISFACTORY ☐ UNSATISFACTORY ☐

**Comments:** \_\_\_\_\_

**Performance Step:** C47023-0503, INSTR AIR HEADER HI PRESS, Step 2  
**Critical Y** IF pressure is high, THEN secure the malfunctioning air compressor.

**Standard:** Examinee stops 122 Air Compressor by placing CS-46097 in "PULLOUT".

**Evaluator Cue:**

- When 122 Air Compressor has been placed in PULLOUT, verify AUTO TRIGGER 2 has inserted to remove the unloader failure on 122 Air Compressor.
- If examinee requests the out-plant operator to secure 122 Air Compressor locally, inform the examinee the LOCAL-REMOTE switch for 122 Air Compressor is broken and can NOT be placed in LOCAL.

**Performance:** SATISFACTORY ☐ UNSATISFACTORY ☐

**Comments:** \_\_\_\_\_

**Performance Step:** C47023-0503, INSTR AIR HEADER HI PRESS, Step 3  
**Critical N** Start the standby instrument air compressor.

**Standard:** Examinee starts 121 Air Compressor using CS-46096 OR starts 123 Air Compressor using CS-46098.

**Performance:** SATISFACTORY ☐ UNSATISFACTORY ☐

**Comments:** \_\_\_\_\_

**Terminating Cues:** When the examinee has started 122 Air Compressor, placed 121 Air Compressor in PULLOUT, and responded to the high Instrument air pressure by placing 122 Air Compressor in PULLOUT, then this JPM is complete.

**Stop Time:** \_\_\_\_\_

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.



## TURNOVER SHEET

### INITIAL CONDITIONS:

- Unit 1 is at 100%.
- 121 Air Compressor is RUNNING in PREFERRED.
- 122 Air Compressor is NOT running and in 1<sup>ST</sup> STANDBY.
- 123 Air Compressor is NOT running and in 2<sup>ND</sup> STANDBY.
- The Station Air System is supplementing the Instrument Air System per Section 5.1.3 of C34, STATION AIR SYSTEM.
- A satisfactory pre-start check of 122 Air Compressor has been performed by an out-plant operator.
- An out-plant operator is standing by to perform post-start checks of 122 Air Compressor.

### INITIATING CUES:

- The SS directs you to perform Section 5.4.1 of C34, STATION AIR, to START 122 Air Compressor and SECURE 121 Air Compressor.

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.

**SA-4SF, INSTRUMENT AIR SYSTEM HIGH PRESSURE, REV. 0****Simulator Setup:**

1. If available, reset the simulator to IC-268 (if available) or IC-8.
2. Place the simulator in RUN.
3. If available, run schedule file **SA-4SF.sch** as follows:
  - a. Select open file in the Schedule application.
  - b. Locate schedule file.
  - c. Open schedule file by double clicking it.
  - d. Run the schedule file by pressing the "Stopped" button on the toolbar.
  - e. Verify the schedule file is running.
4. If schedule file is NOT available, then insert malfunctions, remotes, and overrides, as specified by the Simulator Input Summary on next page.
5. If available, run event file **SA-4SF.evt** as follows:
  - a. Select open file in the Event application.
  - b. Locate event file.
  - c. Open event file by double clicking it.
6. If event file is NOT available, then enter event codes as specified by the Simulator Event Summary on next page.

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.

## SA-4SF, INSTRUMENT AIR SYSTEM HIGH PRESSURE, REV. 0

**SIMULATOR INPUT SUMMARY**

@Time	Event	Action	Description
00:00:00		Insert remote IA101 to OPEN	CP-40-7 POLISH AIR TO INST AIR
	1	Insert override AO-41234 from 13.30000 to 15.10000 in 90 on event 1	11 IA HDR FL
	1	Insert malfunction CP-1F1200A from 67.10000 to 75.70000 in 90 on event 1	11 INST AIR HDR F
	1	Insert override AO-4101601 from 58.20000 to 74.20000 in 90 on event 1	11 IA HDR P
	1	Insert malfunction CP-1P1209A from 93.90000 to 118.80000 in 90 on event 1	11 INSTR AIR HDR P
	1	Insert override AO-4101602 from 57.90000 to 73.90000 in 90 on event 1	IA:AB1 P
	1	Insert malfunction CP-1P1210A from 93.50000 to 118.40000 in 90 on event 1	11 INSTR AIR TO AUX BLDG P
	1	Insert override AO-4101603 from 57.10000 to 73.00000 in 90 on event 1	IA:RB1 P
	1	Insert malfunction CP-1P1211A from 92.20000 to 116.80000 in 90 on event 1	11 INST AIR TO RX BLDG P
	1	Insert override AO-41519 from 13.20000 to 15.10000 in 90 on event 1	21 IA HDR FL
	1	Insert override AO-4152901 from 56.90000 to 74.70000 in 90 on event 1	21 IA HDR P
	1	Insert override AO-4152902 from 56.70000 to 74.40000 in 90 on event 1	IA:AB2 P
	1	Insert override AO-4152903 from 55.90000 to 73.40000 in 90 on event 1	IA:RB2 P
	1	Insert override AO-4127202 from 60.40000 to 61.30000 in 90 on event 1	STA AIR HDR P
	1	Insert malfunction CP-1P1213A from 96.60000 to 98.10000 in 90 on event 1	STATION AIR HDR P
	1	Insert override AO-4101604 from 57.50000 to 73.50000 in 90 on event 1	IA TO SH
	1	Insert malfunction CP-1P1212A from 92.90000 to 117.70000 in 90 on event 1	11 INST AIR TO SCRIN HSE P
	1	Insert override AO-4152904 from 56.30000 to 73.90000 in 90 on event 1	IA TO SH
	1	Insert malfunction M47023:0503W after 45 to Cry_Wolf on event 1	INSTR AIR HEADER HI PRESS ALARM
	2	Insert override AO-41234 from 15.10000 to 13.30000 in 90 on event 2	11 IA HDR FL
	2	Insert malfunction CP-1F1200A from 75.70000 to 67.10000 in 90 on event 2	11 INST AIR HDR F
	2	Insert override AO-4101601 from 74.20000 to 58.20000 in 90 on event 2	11 IA HDR P
	2	Insert malfunction CP-1P1209A from 118.80000 to 93.90000 in 90 on event 2	11 INSTR AIR HDR P
	2	Insert override AO-4101602 from 73.90000 to 57.90000 in 90 on event 2	IA:AB1 P
	2	Insert malfunction CP-1P1210A from 118.10000 to 93.50000 in 90 on event 2	11 INSTR AIR TO AUX BLDG P
	2	Insert override AO-4101603 from 73.00000 to 57.10000 in 90 on event 2	IA:RB1 P
	2	Insert malfunction CP-1P1211A from 116.80000 to 92.20000 in 90 on event 2	11 INST AIR TO RX BLDG P
	2	Insert override AO-41519 from 15.10000 to 13.20000 in 90 on event 2	21 IA HDR FL
	2	Insert override AO-4152901 from 74.70000 to 56.90000 in 90 on event 2	21 IA HDR P
	2	Insert override AO-4152902 from 74.40000 to 56.70000 in 90 on event 2	IA:AB2 P
	2	Insert override AO-4152903 from 73.40000 to 55.90000 in 90 on event 2	IA:RB2 P
	2	Insert override AO-4127202 from 61.30000 to 60.40000 in 90 on event 2	STA AIR HDR P
	2	Insert malfunction CP-1P1213A from 98.10000 to 96.60000 in 90 on event 2	STATION AIR HDR P
	2	Insert override AO-4101604 from 73.50000 to 57.50000 in 90 on event 2	IA TO SH
	2	Insert malfunction CP-1P1212A from 117.70000 to 92.90000 in 90 on event 2	11 INST AIR TO SCRIN HSE P
	2	Insert override AO-4152904 from 73.90000 to 56.30000 in 90 on event 2	IA TO SH
	2	Insert malfunction M47023:0503W after 45 to OFF on event 2	INSTR AIR HEADER HI PRESS ALARM CLEARED

**SIMULATOR EVENT SUMMARY**

Event ID	Event CODE	Event DESCRIPTION
1	ZIAR121(2)==1 & HWZIAL121(1)==1	122 IA COMP STARTED & 121 IA COMP IN PULLOUT
2	HWZIAL121(2)==1	122 IA COMP IN PULLOUT

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.

## SA-4SF, INSTRUMENT AIR SYSTEM HIGH PRESSURE, REV. 0

## ATTACHMENT 1

## JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

ALL STEPS IN THIS CHECKLIST ARE TO BE PERFORMED UPON INITIAL VALIDATION AND PRIOR TO USE.

REVIEW STATEMENTS	YES	NO	N/A
1. Are all items on the cover page filled in correctly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2. Has the JPM been reviewed and validated by SMEs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Can the required conditions for the JPM be appropriately established in the simulator if required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Do the performance steps accurately reflect trainee's actions in accordance with plant procedures?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5. Is the standard for each performance item specific as to what controls, indications and ranges are required to evaluate if the trainee properly performed the step?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6. If the task is NOT time critical, has the completion time been established based on validation data or incumbent experience?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. If the task is time critical, is the time critical portion based upon actual task performance requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Is the Licensee level appropriate for the task being evaluated if required? Not applicable to Non-Licensed Operators	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Is the K/A appropriate to the task and to the licensee level if required? Not applicable to Non-Licensed Operators	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Have the performance steps been identified and typed (Critical / Sequence / Time Critical) appropriately?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
11. Have all special tools and equipment needed to perform the task been identified?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
12. Are all references identified, current, and accurate?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
13. Have all required cues (as anticipated) been identified for the evaluator to assist task completion?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

All applicable questions must be answered "YES" or the JPM is not valid for use. If all applicable questions are answered "YES" then the JPM is considered valid and can be performed as written. The individual(s) performing the validation sign and date this form.

\_\_\_\_\_  
Validation Personnel /Date

\_\_\_\_\_  
Validation Personnel/Date

\_\_\_\_\_  
Validation Personnel /Date

\_\_\_\_\_  
Validation Personnel/Date

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Validation Personnel/Date

Retention: Life of Plant

Retain in: Training Record

Form retained in accordance with record retention schedule identified in FP-G-RM-01.

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## 5.4 Swapping Air Compressors

<b>CONTINUOUS USE</b>
<ul style="list-style-type: none"> <li>• <i>Continuous use of procedure required.</i></li> <li>• <i>Read each step prior to performing.</i></li> <li>• <i>Mark off steps as they are completed.</i></li> <li>• <i>Procedure SHALL be at the work location.</i></li> </ul>

### 5.4.1 Swapping 121, 122 and 123 Air Compressors

This procedure is used to start an idle compressor and stop an operating compressor from the Control Room.

A. **Start** the desired idle compressor as follows:

<b>NOTE:</b>	<p><b>IF</b> the air system pressure is below 95 psig (97 psig for 121 Air Compressor), <b>THEN</b> the oncoming compressor should start automatically when its selector switch is placed in "PREFERRED."</p>
--------------	---

1. **Place** the selector switch for the compressor to be started "PREFERRED":

- **CS-49010**, 121 AIR COMPR  
PRFRD/1STBY/2STBY

OR

- **CS-49011**, 122 AIR COMPR  
PRFRD/1STBY/2STBY

OR

- **CS-49012**, 123 AIR COMPR  
PRFRD/1STBY/2STBY

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

<b>C</b>	<b>STATION AIR SYSTEM</b>	NUMBER: <b>C34</b>
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(Step 5.4.1 continued from previous page...)

2. **Start** the selected compressor by taking the START/STOP switch to "START":

- **CS-46096**, 121 AIR COMPR  
START/STOP

OR

- **CS-46097**, 122 AIR COMPR  
START/STOP

OR

- **CS-46098**, 123 AIR COMPR  
START/STOP

3. Locally **check** the compressor just started AND **verify** it is operating properly per Section 5.5.

- B. **Stop** the compressor to be shut down as follows:

1. **Stop** the selected compressor by placing its control switch to "PULLOUT":

- **CS-46096**, 121 AIR COMPR  
START/STOP

OR

- **CS-46097**, 122 AIR COMPR  
START/STOP

OR

- **CS-46098**, 123 AIR COMPR  
START/STOP

C	STATION AIR SYSTEM	NUMBER:  C34
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(Step 5.4.1 continued from previous page...)

2. **Place** the selector switch for the shutdown compressor in "1ST STANDBY":

- **CS-49010**, 121 AIR COMPR  
PRFRD/1STBY/2STBY

OR

- **CS-49011**, 122 AIR COMPR  
PRFRD/1STBY/2STBY

OR

- **CS-49012**, 123 AIR COMPR  
PRFRD/1STBY/2STBY

**NOTE:**

IF Station Air is supplementing Instrument Air, THEN Control Room selector switches are positioned with one switch in "PREFERRED", one switch in "1<sup>st</sup> STANDBY", and one switch in "2<sup>nd</sup> STANDBY".

3. **Record** final alignment of Control Room selector switch positions as follows:

- a. **CS-49010**, 121 AIR COMPR, in  
PRFRD / 1STBY / 2STBY  
(Circle One)

- b. **CS-49011**, 122 AIR COMPR, in  
PRFRD / 1STBY / 2STBY  
(Circle One)

- c. **CS-49012**, 123 AIR COMPR, in  
PRFRD / 1STBY / 2STBY  
(Circle One)

(This step continued on the next page . . .)

C	STATION AIR SYSTEM	NUMBER:  C34
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(Step 5.4.1 continued from previous page...)

4. After 50 minutes, **return** the control switch for the shutdown compressor to "NORMAL":

- **CS-46096**, 121 AIR COMPR  
START/STOP

OR

- **CS-46097**, 122 AIR COMPR  
START/STOP

OR

- **CS-46098**, 123 AIR COMPR  
START/STOP

#### 5.4.2 Swapping 124 and 125 Air Compressors

- A. The PRIMARY/STANDBY status of 124 and 125 air compressors is controlled by the supervisory controller based on run time hours. IF it is desired to remove a station air compressor from service, THEN **refer** to 5.3.3, Local Shutdown for 124 and 125 Air Compressors.



INSTR AIR HEADER HI PRESS	Alarm Instrument Air Header Pressure
INSTRUMENT AIR HEADER HIGH PRESSURE  SER Input Point: (139) Address: (22W53)	Approximate Setpoints TrippedReset
	110 PSIG105 PSIG

**AUTOMATIC ACTIONS**

NONE

**INITIAL ACTIONS**

1. **Check** instrument air header pressure.
2. **IF** pressure is high, **THEN** **secure** the malfunctioning air compressor.
3. **Start** the standby instrument air compressor.
4. **Verify** proper operation of operating compressors.

**SUBSEQUENT ACTIONS**

**Effect** necessary repairs **AND** **return** the air system to normal.

**INSTRUMENTS & REFERENCES**

1. Actuating devices (PS-16240, PS-16243, and PS-16246).
2. Logic Diagram NF-40313 Sheet 1.
3. Schematic Diagram NE-40011 Sheet 36.
4. Flow Diagram NF-39244.
5. Logic Card 22, Chip U42.