

# FPL Energy

## Seabrook Station

JOB PERFORMANCE MEASURE  
Pair A1 L0069J AP Rev. 03 –Modified

ISOLATE OPEN PORV – E-0

Student Name: \_\_\_\_\_ LMS #: \_\_\_\_\_  
Evaluator Name: \_\_\_\_\_ LMS #: \_\_\_\_\_  
Student Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
(optional)  
Evaluator Signature: \_\_\_\_\_ Date: \_\_\_\_\_

SAT      UNSAT

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PREPARED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
INSTRUCTOR  
REVIEWED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
SUBJECT MATTER EXPERT (OPTIONAL)  
APPROVED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
Signature/Date on file  
TRAINING SUPERVISOR

## JOB PERFORMANCE WORKSHEET

### 1.0 Task Number and Description:

Position: RO

0020400801 Respond To Excessive Reactor Coolant Leakage  
0100101101 Determine Source Of Pressurizer Leakage  
0100400201 Operate PORV/Block Valve To Control RCS Pressure

### 2.0 Conditions:

- A. The plant tripped from 100% power, and safety injection initiated.
- B. RCPs are tripped due to loss of sub-cooling.
- C. The crew completed E-0, steps 1 through 6. EFW flow has been throttled.

### 3.0 Standards:

Perform E-0, step 7. Isolate the open PORV per E-0 step 7 RNO.

### 4.0 Student Materials:

Copy of the Tear-Off Sheet.  
Copy of E-0, Reactor Trip Or Safety Injection, Rev. 46.

### 5.0 Limitations On Performance:

Simulate/Perform all steps. Verbalize all actions to the evaluator.  
Even if requested, no Peer Checks will be provided during the JPM.

### 6.0 References:

Procedures:

- E-0, Reactor Trip Or Safety Injection

Sys	KA	Description	Value RO/SRO
010	A2.03	PORV Failures.	4.1/4.2
010	A4.03	PORV and block valves.	4.0/3.8
APE 008	AK3.02	PORV exit temp below RCS/PZR temp.	3.6/4.1
APE 008	AA1.01	PZR PORV block valve.	4.2/4.0

## JOB PERFORMANCE WORKSHEET

### 7.0 Setting:

NOTE: This JPM is designed to run in parallel with JPM Pair A2, Transfer Service Water from the OCEAN to the Cooling Tower, Manual TA.

- A. Reset the simulator to IC #211 (LEN, Pair A1 A2) or any 100% IC which contains the following:
  - 1) Fail open RC-PCV-456A as follows:
  - 2) Select MF List
  - 3) Select Reactor Coolant (Components)
  - 4) Select avRCPCV456A RC-1-PCV-456A
  - 5) Select Fail Open
  - 6) Select Insert.
- B. Fail open RC-PCV-456B as follows:
  - 1) Select MF List
  - 2) Select Reactor Coolant (Components)
  - 3) Select avRCPCV456A RC-1-PCV-456B
  - 4) Select Fail Open
  - 5) Select Insert.
- C. Insert Event Trigger to cause trip of RC-V-124 breaker (B PORV Block valve) when valve is closed.
  - 1) Select Event Trigger: DEMO EXAMS
  - 2) Select EXAM 03 RC-V-124 BKR
  - 3) Select ACTIVATE.
- D. Complete all actions of E-0 through step 6.
- E. Throttle EFW flow to provide stable RCS temperature control
- F. Trip all RCPs when sub-cooling drops below 40°F, and place the simulator in FREEZE.

### 8.0 Safety Considerations:

None

### 9.0 Approximate Completion Time:

15 minutes

### 10.0 Directions To The Student(s):

1. Ensure task is done correctly.
2. You may be asked follow-up questions to confirm knowledge of the task.

Evaluator gives Tear-Off sheet to the student.

Evaluator reads the following to student (Optional for multiple JPMs):

- A. You are the Primary Operator. You are going to continue performance of E-0, Reactor Trip or Safety Injection, following reactor trip and SI actuation. The Secondary Operator is not in the control room.
- B. The following information is provided to you:

## JOB PERFORMANCE WORKSHEET

1. The Plant tripped from 100% power, and safety injection initiated.
2. RCPs are tripped due to loss of sub-cooling.
3. The crew completed E-0, steps 1 through 6, including Attachment A. EFW flow has been throttled

C. We will begin after the Initiating Cue is read.

D. I will provide the cues and communications for this JPM. Do you have any questions?

### **11.0 Initiating Cue:**

**US to Primary Operator, "Primary Operator (or student's name), E-0 has been completed through step 6. RCPs have been secured using E-0 OAS page direction. SG EFW feed flow has been throttled using E-0 OAS page direction. Continue with E-0, "Reactor Trip or Safety injection" at step 7, "Check RCS Isolated:"**

**PERFORMANCE CHECKLIST**

D=Discuss	ELEMENT/STEP	STANDARD	EVALUATION	INITIALS/DATE
P=Perform				
S=Simulate	* denotes a critical step	* denotes a critical step	SAT	UNSAT

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1. P Start time \_\_\_\_\_ Initiating cue read.

**NOTE: VERIFY that the SWITCHES for the "A" PORV and "B" PORV are in AUTO.**

**CUE:** If the student requests a Peer Check at any time during the JPM, respond: **"No one is available to peer check your actions. Please continue with the task"**.

**NOTE:** At any time the student recognizes that the PORV is open after the JPM has started and asks to close the valve using skill of the operator provide direction for student to close the valve. If this occurs ensure step 6, 7a, and 7b of E-0 are processed before terminating the JPM.

*2.	P	Check RCS Isolated:			
		a. Check Letdown valve(s) closed:	*a. Check Letdown valve(s) closed:		
		<ul style="list-style-type: none"> <li>• CS-V-145</li> <li>OR</li> <li>• RC-LCV-459</li> <li>OR</li> <li>• RC-LCV-460</li> </ul>	Reports that: CS-V-145 is closed	_____	_____
		b. Check PORVs - CLOSED	*b. Reports PORV indications		
			<ul style="list-style-type: none"> <li>• RC-V-456A NOT CLOSED</li> <li>• RC-V-456B NOT CLOSED</li> </ul>	_____	_____
		IF PZR pressure less than 2385 PSIG and LTOP setpoint THEN:	Determines that PZR pressure less than 2385 PSIG and less than LTOP setpoint.	_____	_____
		Manually close "A" PORV	* Manually closes PORV RC-PCV-456A	_____	_____

**PERFORMANCE CHECKLIST**

D=Discuss	ELEMENT/STEP	STANDARD	EVALUATION	INITIALS/DATE
P=Perform				
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Manually close "B" PORV	Attempts to close: PORV RC-PCV-456B	_____	_____	_____
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NOTE: Breaker for Block valve will open as valve begins stroking, causing a loss of light indication for valve position. Student may determine valve did not close by use of alternate indications on station computer, or by plant response (PZR pressure continues to decrease), or a combination of these two.

IF PORV cannot be closed THEN: Manually close the associated block valve	*Attempts to Close block valve RC-V-124 to isolate the failed open PORV	_____	_____	_____
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NOTE: SRO Candidates are expected to correctly recognize required procedure transition. RO Candidates are expected to recognize PORV can not be isolated, and evaluator may prompt RO candidate for recommended actions.

IF block valve can NOT be closed THEN go to E-1, LOSS OF REACTOR OR SECODARY COOLANT, Step 1	DETERMINE that PORV block Valve is not closed. RECOMMENDS transition to E-1	_____	_____	_____
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**CUE: "The JPM is complete."**

4.	Stop time _____	Time to complete the task ≤ 15 minutes.
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Evaluator calculates the time to complete the task.

5.	Obtain from student: Tear Off Sheets and any other training materials used in the performance of the JPM	_____
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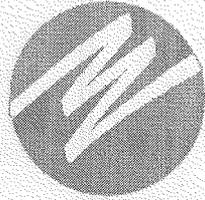
## TEAR-OFF SHEET FOR JPM Pair A1

### Directions to the Student:

- A. You are the Primary Operator. You are going to continue performance of E-0, Reactor Trip Or Safety Injection, following reactor trip and SI actuation. The Secondary Operator is not in the control room.
- B. The following information is provided to you:
  - 1. The Plant tripped from 100% power, and safety injection initiated.
  - 2. RCPs are tripped due to loss of sub-cooling.
  - 3. The crew completed E-0, steps 1 through 6, including Attachment A.
- C. We will begin after the Initiating Cue is read.
- D. I will provide the cues and communications for this JPM. Do you have any questions?

### Initiating Cue:

US to Primary Operator, **“Primary Operator (or student's name), E-0 has been completed through step 6. RCPs have been throttled using E-0 OAS page direction. SG EFW feed flow has been secured using E-0 OAS page direction. Continue with E-0, “Reactor Trip or Safety injection” at step 7, “Check RCS Isolated:”**



# FPL Energy

## Seabrook Station

JOB PERFORMANCE MEASURE  
PairA2 SRO-I, SRO-U, RO PAIR A-2 AP N

TRANSFER SERVICE WATER FROM THE OCEAN TO THE COOLING TOWER (Manual TA)

Student Name: \_\_\_\_\_ LMS #: \_\_\_\_\_

Evaluator Name: \_\_\_\_\_ LMS #: \_\_\_\_\_

Student Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
(optional)

Evaluator Signature: \_\_\_\_\_ Date: \_\_\_\_\_

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PREPARED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
INSTRUCTOR

REVIEWED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
SUBJECT MATTER EXPERT (OPTIONAL)

APPROVED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
Signature/Date on file  
TRAINING SUPERVISOR

## JOB PERFORMANCE WORKSHEET

### 1.0 Task Number and Description:

Position: RO

0760103401 Switch From SW To Cooling Tower Operation

### 2.0 Conditions:

- A. The plant is operating at 100%.
- B. A fault in the SW-P-41A will cause a trip of the pump and SW-P-41C will not start causing a need to shift SW Train A to the Cooling Tower.
- C. Component malfunctions will prevent SW-V74 from closing (Cooling Tower Boundary Valve) and SW-V34 from opening.
- C. Using OS1216.01, Degraded Ultimate Heat Sink, the student will align these two valves to the correct position for a TA.

### 3.0 Standards:

Align SW Train A to the Cooling Tower per OS1216.01, Degraded Ultimate Heat Sink, and the UL-16 status lights.

### 4.0 Student Materials:

Copy of the Tear-Off Sheet.  
Copy of OS1216.01, Degraded Ultimate Heat Sink, Rev. 12.

### 5.0 Limitations on performance:

Simulate/Perform all steps. Verbalize all actions to the evaluator.  
Even if requested, no Peer Checks will be provided during the JPM.

### 6.0 References:

Procedures:

- OS1216.01, Degraded Ultimate Heat Sink
- SM 7.20, Control of Time Critical Actions.

Sys	KA	Description	Value RO/SRO
076	A2.01	Ability to predict the impacts of loss of SW & use procedures to correct, control or mitigate the consequences of those malfunctions or operations.	3.5/3.7
076	K3.01	Knowledge of the effect that a loss of SW will have on closed cooling water.	3.4/3.6

## JOB PERFORMANCE WORKSHEET

### 7.0 Setting:

NOTE: this JPM is designed to be run in parallel with JPM Pair A2, Isolate Open PORV E-0.

Reset the simulator to IC 211, LEN Pair A1 A2, or any 100% IC that contains the following.

Activate Scenario Len/Len SW. This sets the component malfunctions for the SW valves and sets up the trip of SW-P-41A and the failure of SW-P-41C to start.

Place simulator in RUN. Acknowledge all alarms.

### 8.0 Safety Considerations:

None

### 9.0 Approximate Completion Time:

20 minutes

### 10.0 Directions to the Student(s):

Evaluator gives Tear-Off sheet to the student

Evaluator reads the following to the student (Optional for multiple JPMs)

Student:

1. Ensures task is done correctly.
2. May be asked follow-up questions to confirm knowledge of task.

A. You are the Secondary Operator.

B. The following information is provided to you:

1. Respond to any events on the Service Water System.

C. We will begin after the Initiating Cue is read.

D. I will provide the cues and communications for this JPM. Do you have any questions?

### 11.0 Initiating Cue:

US to Secondary Operator, **“Secondary Operator (or student’s name), perform a Secondary side MCB walkdown and inform me when you are ready to begin.**

**When an event occurs, respond to the event appropriately. There are Time critical aspects of this evolution which you will be graded on.”**



**PERFORMANCE CHECKLIST**

D=Discuss	ELEMENT/STEP	STANDARD	EVALUATION		INITIALS/DATE
P=Perform	*denotes a	*denotes critical			
S=Simulate	critical step	standard	SAT	UNSAT	

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1.5*	Place Control Switch for SW-P-41C in PTL	1.5*	Places SW-P-41C control Switch in PTL	_____	_____	_____
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**NOTE** When Student Enters Abnormal Operating Procedure OS1216.01, Degraded Ultimate Heat Sink

4	P	Determine Appropriate Response, If affected SW train aligned to the ocean, then Go to Step 2.	Determines that affected SW train was aligned to the ocean, and transitions to Step 2.	_____	_____	_____
---	---	---	--	-------	-------	-------

5.	P	Step 2, Check for cause of SW Failure. Ocean service water pumps running – One Pump Running Per Train with Associated Discharge Valve Open.	No => Goes to RNO. Step 2.	_____	_____	_____
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NOTE	Time critical action is from TA actuation until isolation and/or reposition of Cooling Tower Boundary Valve	TA Actuation time	_____			
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4.	P	Step 2 RNO. START the standby ocean service water pump. If the standby pump cannot be started, then actuate TA for the affected train.	Attempts start of SW-P-41C.	_____	_____	_____
			When pump will not start, ACTUATES TA Train A	_____	_____	_____

Go to Step 4

## PERFORMANCE CHECKLIST

D=Discuss	ELEMENT/STEP	STANDARD	EVALUATION	INITIALS/DATE
P=Perform	*denotes a	*denotes critical		
S=Simulate	critical step	standard	SAT    UNSAT	

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*5.	P	Step 4 Verify Tower Actuation Sequence.  4 A. Verify proper TA alignment by status panel indication. A Train UL-16	Align Equipment per status panel. OPENS SW-V34, SW Train A Return to Cooling Tower, after verifying that valve should be OPEN.	_____	_____	_____
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NOTE Student may recognize that SW-V-74 did not re-align when checking UL-16 indication in step 4A or during check of boundary valves in step 4B. Either case is acceptable provided that repositioning occurs within Time Critical Action acceptance criteria.

*6.		4 B. Check cooling tower boundary valves CLOSED.		_____	_____	_____
	●*	SW-V4	●* Verifies SW-V-4 Closed	_____	_____	_____
	●*	SW-V20	●* Verifies SW-V-20 Closed	_____	_____	_____
	●*	SW-V74	●* *From Status Panel notes that SW-V74 is open. Manually closes SW-V74.	_____	_____	_____

NOTE		Time critical action is from TA actuation until isolation and/or reposition of Cooling Tower Boundary Valve	SW-V-74 reposition time  (Standard is less than 10 minutes for TA initiation)	_____	_____	_____
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*7.	P	4 C IF the TA was in response to a high strainer D/P then open the Bypass valve for the affected strainer. Train A SW-V69	● No Action as it was pump failure. Goes to Step 5.	_____	_____	_____
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## PERFORMANCE CHECKLIST

D=Discuss P=Perform S=Simulate	ELEMENT/STEP *denotes a critical step	STANDARD *denotes critical standard	EVALUATION  SAT    UNSAT	INITIALS/DATE
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*9	Step 5. Check Both Trains- Aligned to Cooling Tower. <b>NO =&gt;Performs Step 5 RNO.</b>	Perform the following for the one train aligned to the cooling tower. a. Place the ocean SW pump control switches for train aligned to the cooling tower in Pull To Lock. b. Place the running cooling tower pump control switch in Normal After Start.	          _____	_____
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**CUE: "The JPM is complete."**

9.	Stop time _____  Evaluator calculates the time to complete the task.	Time to complete the task ≤ 20 minutes.		
10.	Obtain from student: Tear Off Sheets and any other training materials used in the performance of the JPM		_____	



TEAR-OFF SHEET FOR JPM Pair A2

**Directions to the Student:**

- A. You are the Secondary Operator.
- B. The following information is provided to you:
  - 1. The plant is operating at 100%
  - 2. Respond to any events on the Service Water System.
- C. We will begin after the Initiating Cue is read.
- D. The evaluator will provide the cues and communications for this JPM. Do you have any questions?

**Initiating Cue:**

US to Secondary Operator, **“Secondary Operator (or student’s name), perform a Secondary side MCB walkdown and inform me when you are ready to begin. When an event occurs, respond to the event appropriately. There are Time critical aspects of this evolution which you will be graded on.”**



## JOB PERFORMANCE WORKSHEET

### 1.0 Task Number and Description:

Position: RO

0030401501 Monitor RCP Trip Criteria

0030400401 Perform An Emergency RCP Shutdown

### 2.0 Conditions:

- A. An Automatic Reactor trip and safety injection occurred from 100% power.
- B. All required actions of E-0, Reactor Trip Or Safety Injection, are complete.
- C. The crew determined that SI is not required and has transitioned to ES-1.1, step 7.

### 3.0 Standards:

Manually operate ECCS and reactor coolant pumps per EOPs.

### 4.0 Student Materials:

Copy of the Tear-Off Sheet.

Copy of ES-1.1, SI Termination, Rev. 34.

Copy of E-1, Loss Of Reactor Or Secondary Coolant, Rev. 37.

### 5.0 Limitations On Performance:

Simulate/Perform all steps. Verbalize all actions to the evaluator.  
Even if requested, no Peer Checks will be provided for this JPM.

### 6.0 References:

Procedures:

- E-0, Reactor Trip Or Safety Injection
- ES-1.1, SI Termination
- E-1, Loss Of Reactor Or Secondary Coolant

Sys	KA	Description	Value RO/SRO
006	A4.01	Ability to manually operate ECCS pumps.	4.1/3.9
003	A2.02	Conditions which exist for an abnormal shutdown of an RCP in comparison to a normal shutdown.	3.7/3.9

## JOB PERFORMANCE WORKSHEET

### 7.0 Setting:

NOTE: This JPM is designed to be performed in parallel with JPM Pair B2, Start Hydrogen Recombiners.

A. Reset the simulator to IC #212 (LEN pair B1 B2)

### 8.0 Safety Considerations:

None

### 9.0 Approximate Completion Time:

10 minutes

### 10.0 Directions To The Student(s):

1. Ensure task is done correctly.
2. You may be asked follow-up questions to confirm knowledge of the task.

Evaluator gives Tear-Off sheet to the student.

Evaluator reads the following to student (Optional for multiple JPMs):

A. You are the Primary Operator. You are going to terminate Safety Injection per ES-1.1, SI Termination.

B. The following information is provided to you:

1. The plant sustained an automatic Reactor Trip and Safety Injection from 100% power.
2. All required actions of E-0, Reactor Trip or Safety Injection, are complete.
3. The crew has transitioned to ES-1.1, step 7.

C. We will begin after the Initiating Cue is read.

D. I will provide the cues and communications for this JPM. Do you have any questions?

### 11.0 Initiating Cue:

US to Primary Operator, ""Primary Operator (or student's name), we are at step 7 of ES-1.1, SI Termination, "Check if SI pumps should be Stopped. Continue with step 7.""

**PERFORMANCE CHECKLIST**

D=Discuss	ELEMENT/STEP	STANDARD	EVALUATION	INITIALS/DATE
P=Perform				
S=Simulate	* denotes a critical step	* denotes a critical step	SAT    UNSAT	

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1.     P     Start time \_\_\_\_\_     Initiating cue read.

**CUE:** When student locates a copy of ES-1.1 SI termination provide student with a copy.

\*2.    P     Checks If SI Pumps Should Be Stopped:

a. Check RCS pressure:

GREATER THAN 1700  
PSIG

AND

Pressure – STABLE OR  
INCREASING BY  
PRESSURE RECORDER

\*a. Checks:

\* Checks and reports RCS pressure > 1700 psig;

AND

\* Checks and reports: RCS pressure stable or increasing by pressure recorders:


b. Stop SI Pumps and place in standby

b. Positions SI pump switches:

\* SI Pump A stopped and placed in standby

\* SI Pump B stopped and placed in Standby.


\*3.    P     Checks If RHR Pumps Should Be Stopped:

a. RHR Pumps –Any running with suction aligned to RWST

a. Determines that RHR pumps are running with suction aligned to RWST.

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b. Stop RHR Pumps And Place In Standby.

b. Positions RHR pump switches:

**PERFORMANCE CHECKLIST**

D=Discuss P=Perform S=Simulate	ELEMENT/STEP  * denotes a critical step	STANDARD  * denotes a critical step	EVALUATION		INITIALS/DATE
			SAT	UNSAT	

* RHR pump A stopped and placed in standby.	_____	_____	_____
* RHR pump B stopped and placed in standby.	_____	_____	_____

**NOTE:** Simulator Operator Insert the following malfunction:  
 Select MF List  
 Select Reactor Coolant Malfunctions  
 Select mfRC0014 PZR Safety Vlv Seat Leakage  
 Set Final Value = 1  
 Select INSERT

**NOTE:** Subcooling may initially be > 40°F but the trend should be lowering. Time should be allowed for subcooling to decrease less than 40°F. Student should manually start ECCS pumps as required based on subcooling either from ES-1.1 OAS page or step 9a RNO.

*4. P	Verify ECCS flow not required:			
a.	RCS Subcooling – Greater than 40 degrees	*a. Verifies and reports that RCS subcooling is NOT > 40°F.	_____	_____
b.	Manually start ECCS pumps as required. Go to E-1 Loss of Reactor or Secondary Coolant step 1.	*b. Manually starts ECCS pumps as required	_____	_____

**NOTE:** LOIT Students are expected to be their own procedure reader, however RO candidates would not normally make procedure transitions without an SRO licensed individual. If required the Evaluator can prompt RO candidates to recommend the procedure transition to E-1. **CUE: I understand you are recommending we make a procedure transition to E-1, “Loss of Reactor or Secondary Coolant”. We will make the transition. Continue in E-1, step 1.**

**PERFORMANCE CHECKLIST**

D=Discuss P=Perform S=Simulate	ELEMENT/STEP * denotes a critical step	STANDARD * denotes a critical step	EVALUATION SAT    UNSAT	INITIALS/DATE
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**CUE:** If required US provide the following cue, “**Transitioning to E-1 Loss of Reactor or Secondary Coolant step 1.**”

**NOTE:** RCPs can be stopped using E-1, step 1 or the OAS page of E-1

*5.	P	Check If RCPs Should Be Stopped:			
		a. ECCS pumps - AT LEAST ONE RUNNING CCP or SI pump	*a. Verifies AT LEAST ONE RUNNING CCP or SI pump	_____	_____
		b. RCS subcooling - LESS THAN 40°F.	*b. Verifies and reports RCS subcooling is less than 40°F.	_____	_____
		c. Stop all RCPs.	*c. Stops all RCPs.	_____	_____

**CUE:** “**The JPM is complete.**”

7.	Stop time _____	Time to complete the task ≤ 20 minutes.			
	Evaluator calculates the time to complete the task.				
8.	Obtain from student: Tear Off Sheets and any other training materials used in the performance of the JPM				_____



## TEAR-OFF SHEET FOR JPM Pair B1

### Directions to the Student:

- A. You are the Primary Operator. You are going to terminate Safety Injection per ES-1.1, SI Termination.
- B. The following information is provided to you:
  - 1. The plant sustained an automatic Reactor Trip and Safety Injection from 100% power.
  - 2. All required actions of E-0, Reactor Trip or Safety Injection, are complete.
  - 3. The crew has transitioned to ES-1.1, step 7.
- C. We will begin after the Initiating Cue is read.
- D. I will provide the cues and communications for this JPM. Do you have any questions?

### Initiating Cue:

US to Primary Operator, **“Primary Operator (or student’s name), we are at step 7 of ES-1.1, SI Termination, “Check if SI pumps should be Stopped. Continue with step 7.”**



## JOB PERFORMANCE WORKSHEET

### 1.0 Task Number and Description:

Position: RO

0280500201 Start 'B' H<sub>2</sub> Recombiner From The Main Control Room.

### 2.0 Conditions:

- A. A reactor trip with SI occurred from 100% power due to a large break LOCA.
- B. The US transitioned through E-0, E-1, ES-1.3, and back to E-1 and is now at step 17.
- C. Hydrogen concentration in containment is 3.4%

### 3.0 Standards:

Place a hydrogen recombinder in service.

### 4.0 Student Materials:

Copy of the Tear-Off Sheet.

Copy of OS1023.40, Hydrogen Recombiner Operation, Rev. 7, Chg. 2.  
Calculator.

### 5.0 Limitations On Performance:

Simulate/Perform all steps. Verbalize all actions to the evaluator.  
Even if requested, no Peer Checks will be provided during the JPM.

### 6.0 References:

Procedures:

- E-1, Loss of Reactor or Secondary Coolant
- OS1023.40, Hydrogen Recombiner Operation.

Sys	KA	Description	Value RO/SRO
028	A2.02	LOCA condition and concern over hydrogen.	3.5/3.9
028	A2.03	The hydrogen/air concentration in excess of limit flame propagation or detonation with resulting equipment damage in containment.	3.4/4.0
2.1	2.1.23	Ability to perform specific system and integrated plant procedures during all modes of operation.	4.3/4.4
2.1	2.1.8	Ability to coordinate personnel activities outside the control room.	3.4/4.1
2.1	2.1.31	Ability to locate control room switches, controls, and indications, and determine that they are correctly reflecting the desired plant lineup.	4.6/4.3

## JOB PERFORMANCE WORKSHEET

### 7.0 Setting:

NOTE: This JPM is designed to be performed in parallel with JPM Pair B1, Trip All RCPs. Reset the simulator to IC #212 (LEN Pair B1 B2) or any 100% IC which contains the following:

- A. Using panel graphics display sections PGR06A and PGR06B insert overrides on Hydrogen Analyzer A meter AND Hydrogen Analyzer B meter. Override to 3.4 for both meters.
- B. Place the simulator in FREEZE.

The **simulator must be in RUN** to allow the PWR OUT meter to respond to the potentiometer.

**Verify the "PWR OUT" potentiometer is at MINIMUM prior to beginning the JPM.**

### 8.0 Safety Considerations:

None

### 9.0 Approximate Completion Time:

20 minutes

## JOB PERFORMANCE WORKSHEET

### 10.0 Directions To The Student(s):

1. Ensure task is done correctly.
2. You may be asked follow-up questions to confirm knowledge of the task.

Evaluator gives Tear-Off sheet to the student.

Evaluator reads the following to student (Optional for multiple JPMs):

- A. You are the Secondary Operator. You are going to place Hydrogen Recombiner 'B' in service.
- B. The following information is provided to you:
1. A reactor trip with SI occurred from 100% power due to a large break LOCA.
  2. The US transitioned through E-0, E-1, ES-1.3, and back to E-1.
  3. The crew is presently at step 17 of E-1 Loss of Reactor or Secondary Coolant and they have checked containment H<sub>2</sub> concentration, which is 3.4 %.
- C. We will begin after the Initiating Cue is read.
- D. I will act as the US and provide the cues and communications for this JPM. Do you have any questions?

### 11.0 Initiating Cue:

US to Secondary Operator, **"Secondary Operator (or student's name), we are in E-1, and containment hydrogen concentration is presently 3.4%. Place Hydrogen Recombiner 'B' in service per OS1023.40, Hydrogen Recombiner Operation. Report to me when the recombinder is in service."**

## PERFORMANCE CHECKLIST

D=Discuss P=Perform S=Simulate	ELEMENT/STEP	STANDARD	EVALUATION	INITIALS/DATE
	* denotes a critical step	* denotes a critical step	SAT    UNSAT	

**NOTE:** When the student is ready to begin place the simulator in run.

1.     P     Start time \_\_\_\_\_     Initiating cue read.

**CUE:** If the student request a Peer Check at any time during the JPM, respond: **“No one is available to peer check your actions. Please continue with the task”**.

**NOTE:** If asked by the student, **“The electrical lineup has been completed”**.

2.	S	Verify the white PWR. IN AVAIL. light is energized.	Verifies the PWR. IN AVAIL. light is energized.	_____	_____	_____
3.	P	Set the PWR. ADJ. potentiometer to zero.	Turns PWR ADJ pot to 000.	_____	_____	_____
*4.	P	Place the PWR. OUT SW. switch to the ON position and VERIFY that the red light on the switch plate comes on.	<ul style="list-style-type: none"> <li>* • Moves switch to ON position.</li>   <li>• Verifies the red light is on.</li> </ul>	_____	_____	_____

**CUE:** **AT EACH POWER LEVEL, INFORM THE OPERATOR THE STATED TIME HAS ELAPSED.**

*5.		Energize the Hydrogen Recombiner heater by PERFORMING the following:	Energizes the recombiner:			
	P	a. TURN the PWR. ADJ. Potentiometer clockwise until 5 kW is indicated on the PWR. OUT meter. MAINTAIN the 5 kW value for at least 10 minutes.	*a. Turns the PWR ADJ pot clockwise until 5 kW is indicated. Maintain 5 kW for 10 minutes.	_____	_____	_____
	P	b. TURN the PWR. ADJ. Potentiometer clockwise until 10 kW is indicated on the PWR. OUT meter. MAINTAIN the 10 kW value for at least 10 minutes.	*b. Turns the PWR ADJ pot clockwise until 10 kW is indicated. Maintain 10 kW for 10 minutes.	_____	_____	_____

**PERFORMANCE CHECKLIST**

D=Discuss P=Perform S=Simulate	ELEMENT/STEP * denotes a critical step	STANDARD * denotes a critical step	EVALUATION		INITIALS/DATE
			SAT	UNSAT	

P	c. TURN the PWR. ADJ. Potentiometer clockwise until 20 kW is indicated on the PWR. OUT meter. MAINTAIN the 20 kW value for at least 5 minutes.	*c. Turns the PWR ADJ pot clockwise until 20 kW is indicated. Maintain 20 kW for 5 minutes.	_____	_____	_____
---	--	---	-------	-------	-------

P	d. DETERMINE the recombiner power setting per Form A, Power Out Setpoint Calculation.	d. Refers to Form A.	_____	_____	_____
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P	e. Calculate the H <sub>2</sub> recombiner power setpoint by performing the following:				
---	--	--	--	--	--

**CUE:** JPM will be performed in parallel with a Primary Side BOARD JPM. Because Containment pressure instruments are un-accessible because of the other JPM location THEN:  
 When the student locates/requests containment pressure instruments, cue the student: **“Containment pressure is 8.0 psig.”**  
 When the student requests pre-accident containment temperature, cue the student: **“Containment pre-LOCA temperature was 120 degrees.**

DETERMINE the current containment pressure from SI-PI-934 or SI-PI-935, MCB containment pressure indicators.	• Determines the current cntmnt pressure is 8 PSIG.	_____	_____	_____
--	---	-------	-------	-------

Current Containment Pressure + 14.7 psi = psia	* • Converts cntmnt pressure to psia and records on data sheet (= 22.7 psia).	_____	_____	_____
--	---	-------	-------	-------

Pre-accident Containment Average Temperature is 120°F.	• No action required.	_____	_____	_____
--	-----------------------	-------	-------	-------

## PERFORMANCE CHECKLIST

D=Discuss P=Perform S=Simulate	ELEMENT/STEP	STANDARD	EVALUATION		INITIALS/DATE
	* denotes a critical step	* denotes a critical step	SAT	UNSAT	

	<ul style="list-style-type: none"> <li>Using containment absolute pressure, pre-accident containment average temperature and Figure 2, Recombiner Power Correction Factor Curve determine the Pressure Factor (<math>C_p</math>).</li> </ul>	<ul style="list-style-type: none"> <li>Determines <math>C_p</math> and Records on data sheet - (<math>C_p = 1.33</math> to <math>1.37</math>).</li> </ul> <p>Enter student <math>C_p</math> value: <math>C_p =</math> _____</p>	_____	_____	_____
	<ul style="list-style-type: none"> <li>MULTIPLY the Pressure Factor (<math>C_p</math>) by Reference Power (45.24 kW).</li> </ul> <p style="margin-left: 40px;"><math>(C_p) \times 45.24 =</math> Power Setting kW</p>	<ul style="list-style-type: none"> <li>Multiplies <math>C_p</math> by the reference power. Records on data sheet - (60.2 – 62.0 kW).</li> </ul> <p>Enter student KW value: KW = _____</p>	_____	_____	_____

**CUE:** If the student requests a second person verification, respond: **“For the purpose of this evaluation, a second verification will not be performed. Please continue with the procedure.”**

	<ul style="list-style-type: none"> <li>Have a second person VERIFY the power setting calculation.</li> </ul>	<ul style="list-style-type: none"> <li>Requests second person verification.</li> </ul>	_____	_____	_____
P	f. Turn the PWR. ADJ. potentiometer clockwise until the power setpoint, as calculated in Step 4.2.4.4, is indicated on the PWR OUT meter.	*f. Turns the PWR ADJ pot clockwise until the power setpoint is indicated on the PWR OUT meter.	_____	_____	_____

**CUE:** When student mentions that conference with the TSC is necessary to determine recombiner effectiveness, inform the student, **“The STED is aware of this and in contact with the TSC on this matter.”**

	g. CONFER with the TSC to determine recombiner effectiveness and the need to make adjustments to recombiner power.	g. Attempts to confer with the TSC.	_____	_____	_____
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PERFORMANCE CHECKLIST

D=Discuss P=Perform S=Simulate	ELEMENT/STEP * denotes a critical step	STANDARD * denotes a critical step	EVALUATION SAT    UNSAT	INITIALS/DATE
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**CUE: "The JPM is complete."**

- |    |   |  |  |       |
|----|---|--|--|-------|
| 6. | Stop time _____<br>Evaluator calculates the time to complete the task.                                      | Time to complete the task $\leq$ 20 minutes. |  |       |
| 7. | Obtain from student:<br>Tear Off Sheets and any other training materials used in the performance of the JPM |  |  | _____ |



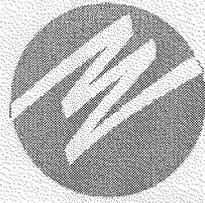
## TEAR-OFF SHEET FOR JPM Pair B2

### Directions to the Student:

- A. You are the Secondary Operator. You are going to simulate placing Hydrogen Recombiner A in service.
- B. The following information is provided to you:
  - 1. A reactor trip with SI occurred from 100% power due to a large break LOCA.
  - 2. The US transitioned through E-0, E-1, ES-1.3, and back to E-1.
  - 3. The crew is presently at step 17 of E-1 Loss of Reactor or Secondary Coolant and they have checked containment H<sub>2</sub> concentration, which is 3.4%.
- C. We will begin after the Initiating Cue is read.
- D. I will provide the cues and communications for this JPM. Do you have any questions?

### Initiating Cue:

**US to Secondary Operator, "Secondary Operator (or student's name), we are in E-1, and containment hydrogen concentration is presently 3.4%. Place Hydrogen Recombiner 'B' in service per OS1023.40, Hydrogen Recombiner Operation. Report to me when the recombiner is in service."**



# FPL Energy

## Seabrook Station

JOB PERFORMANCE MEASURE  
Pair C1 - NEW

OFFSITE POWER RESTORATION

Student Name: \_\_\_\_\_ LMS #: \_\_\_\_\_  
Evaluator Name: \_\_\_\_\_ LMS #: \_\_\_\_\_  
Student Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
(optional)  
Evaluator Signature: \_\_\_\_\_ Date: \_\_\_\_\_

SAT      UNSAT

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PREPARED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
INSTRUCTOR

REVIEWED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
SUBJECT MATTER EXPERT (OPTIONAL)

APPROVED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
Signature/Date on file  
TRAINING SUPERVISOR

## JOB PERFORMANCE WORKSHEET

### 1.0 Task Number and Description:

Position: RO

0620402001 Respond To A Low Voltage On Safeguard Bus (LOP).

### 2.0 Conditions:

- A. The plant is at 100% power.
- B. The Bus E6 PT fuse cabinet door was momentarily opened which caused Bus E6 to shift from the UAT to DG "B".
- C. The US is using OS1246.02, "Degraded Vital AC Power (Plant Operating),RNO for step 21, Attachment L to restore Bus E6 to off site power via the UAT.
- D. RMO was previously reset using step 7.
- E. DUE TO SIMULATOR SETUP requirements for the corresponding paired JPM (Pair C2, Pressurizer Pressure instrument Failure) components and alarms have been reset on the Primary side of the board. This includes CBA, CAH, and Steam Blowdown.

### 3.0 Standards:

Restore offsite power to Bus E6 using Attachment L of OS1246.02.

### 4.0 Student Materials:

Copy of the Tear-Off Sheet.

Copy of Attachment L of OS1246.02, Degraded Vital AC Power (Plant Operating).

### 5.0 Limitations On Performance:

Simulate/Perform all steps. Verbalize all actions to the evaluator.  
Even if requested, no Peer Checks will be provided during the JPM.

### 6.0 References:

Procedures:

OS1246.02, Degraded Vital AC Power (Plant Operating).

Sys	KA	Description	Value RO/SRO
062	K1.04	Knowledge of offsite power sources.	3.7/4.2
062	A4.01	Ability to manually operate and/or monitor breakers.	3.3/3.1
062	A4.07	Synchronizing and paralleling of different AC supplies.	3.1/3.1

## JOB PERFORMANCE WORKSHEET

### 7.0 Setting:

NOTE : JPM is designed to be performed in parallel with JPM Pair C-2, Pressurizer Pressure Channel Failure.

Reset the simulator to IC #213 (LEN Pair C1 C2) or any 100% IC which contains the following:

- A. Initialize the simulator to a 100% power IC:
- B. Bus E-6 RAT breaker in PTL, and power transferred to EDG by OPENING UAT breaker.
- C. Place the simulator in run.
- D. Perform the actions of OS1246.02, Degraded Vital AC Power (Plant Operating).
- E. Restore plant conditions and reset alarms on primary side as required to support parallel JPM performance.

Place simulator in run to ensure all alarms are acknowledged prior to start of JPM then place simulator in FREEZE.

### 8.0 Safety Considerations:

None

### 9.0 Approximate Completion Time:

20 minutes

### 10.0 Directions To The Student(s):

1. Ensure task is done correctly.
2. You may be asked follow-up questions to confirm knowledge of the task.

Evaluator gives Tear-Off sheet to the student.

Evaluator reads the following to student (Optional for multiple JPMs):

A. You are the Secondary Operator.

B. The following information is provided to you:

1. The plant is at 100% power.
2. The Bus E6 PT fuse cabinet door was momentarily opened which caused Bus E6 to shift from the UAT to DG "B".
3. The US is using OS1246.02, "Degraded Vital AC Power (Plant Operating),RNO for step 21, Attachment L to restore Bus E6 to off site power via the UAT.
4. RMO was previously reset using step 7.
5. The system dispatcher reports grid conditions are stable.
6. The UAT and RAT breaker cubicles for Bus E6 have been walked down and are ready for use.

## JOB PERFORMANCE WORKSHEET

- C. We will begin after the Initiating Cue is read.
- D. I will act as the US and provide the cues and communications for this JPM. Do you have any questions?

### **11.0 Initiating Cue:**

US to Secondary Operator, **“Secondary Operator (or student’s name), restore offsite power to Bus E6 using Attachment L of OS1246.02, Degraded Vital AC Power (Plant Operating).”**

**PERFORMANCE CHECKLIST**

D=Discuss	ELEMENT/STEP	STANDARD	EVALUATION	INITIALS/DATE
P=Perform			SAT	UNSAT
S=Simulate	* denotes a critical step	* denotes a critical step		

**NOTE:** Ensure that student is ready to begin the JPM before placing simulator in run.

1. P Start time \_\_\_\_\_ Initiating cue read.

**CUE:** If the student requests a Peer Check at any time during the JPM, respond: **“No one is available to peer check your actions. Please continue with the task”.**

**ATTACHMENT L**  
**OFFSITE POWER RESTORATION TO BUS E6**

**CUE:** US to student: **“The System Dispatcher reports grid conditions are now stable, and are expected to remain stable”.**

2.	P	Raises DG frequency to 60.2 to 60.4 Hz.	Raises DG frequency to required band.	_____	_____	_____
*3.	P	Place DG synch. selector switch in the UAT or RAT position.	Places synch selector switch to UAT position.	_____	_____	_____
*4.	P	Reset RMO	Resets RMO.	_____	_____	_____
5.	P	Adjust DG voltage to match INCOMING VOLTS with RUNNING VOLTS	Matches Voltage	_____	_____	_____
*6.	P	Adjust DG frequency so that the sync. meter is going slowly in the fast direction.	* Adjusts speed as required	_____	_____	_____
*7.	P	Close the RAT or UAT breaker when synchronized.	* Closes the UAT breaker.	_____	_____	_____
8.	P	Place the sync. selector switch in OFF.	Turns the synch switch off.	_____	_____	_____

## PERFORMANCE CHECKLIST

D=Discuss P=Perform S=Simulate	ELEMENT/STEP	STANDARD	EVALUATION	INITIALS/DATE
	* denotes a critical step	* denotes a critical step	SAT    UNSAT	

**NOTE:** The evaluator should observe that the operator maintains control over the generator VARs while unloading. Due to simulator bus voltage settings, it is expected that leading VAR loading will initially be observed. Until this issue can be corrected, the following cue must be stated to the student:

**CUE:** **Leading VARs are expected on the simulator after paralleling the DG. Adjust KVARs to 1000 lagging at this time.**

**CUE:** Inform the student: **“For the purposes of this JPM, the 10 minute unloading period can be compressed.”**

*9.	P	Shutdown DG by performing the following:	Shutdowns DG by performing the following:			
		a. Over a 10 minute time period: Lower KVARs to less than 200 lagging	a. Over a 10 minute time period: * Lowers KVARs to less than 200 lagging	_____	_____	_____
		and	and			
		Lower load to 75 to 125 KW.	* Lowers load to 75 to 125 KW.	_____	_____	_____
		*b. Open DG breaker.	*b. Opens DG breaker.	_____	_____	_____
		c. Adjust DG voltage to 4160 volts.	c. Adjusts DG voltage to 4160 volts.	_____	_____	_____

**CUE:** When the above step is completed, inform the student: **“For the purpose of this JPM, the ten minute engine cooldown is complete.**

After running DG unloaded for 10 minutes to cool the engine:

		*d. Shut down the diesel by depressing both emergency stop buttons simultaneously.	*d. Shuts down the diesel by depressing both emergency stop buttons simultaneously.	_____	_____	_____
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**PERFORMANCE CHECKLIST**

D=Discuss P=Perform S=Simulate	ELEMENT/STEP * denotes a critical step	STANDARD * denotes a critical step	EVALUATION SAT    UNSAT	INITIALS/DATE
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**CUE:** When the above step is completed, inform the student: **“For the purpose of this JPM, two minutes have elapsed and the DG has stopped rolling.”**

After waiting two minutes to allow time for diesel to stop:

*e. Reset the DG.	*e. Resets the DG.	_____	_____	_____
*f. Close SW-V16 for DG A, or SW-V18 for DG B.	*f. Closes SW-V18.	_____	_____	_____

**CUE:** **“The JPM is complete.”**

13. Stop time \_\_\_\_\_ Time to complete the task ≤ 20 minutes.

Evaluator calculates the time to complete the task.

14. Obtain from student:  
Tear Off Sheets and any other training materials used in the performance of the JPM

\_\_\_\_\_



**TEAR-OFF SHEET FOR JPM**

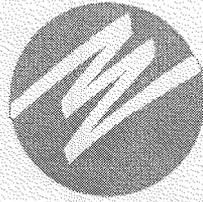
**Pair C1**

**Directions to the Student:**

- A. You are the Secondary Operator.
- B. The following information is provided to you:
  - 1. The plant is at 100% power.
  - 2. The Bus E6 PT fuse cabinet door was momentarily opened which cause Bus E6 to shift from the UAT to DG "B".
  - 3. The US is using OS1246.02, "Degraded Vital AC Power (Plant Operating), RNO for step 21, Attachment L to restore Bus E6 to off site power via the UAT.
  - 4. RMO was previously reset using step 7.
  - 5. The system dispatcher reports grid conditions are stable.
  - 6. The UAT and RAT breaker cubicles for Bus E6 have been walked down and are ready for use.
- C. We will begin after the Initiating Cue is read.
- D. I will provide the cues and communications for this JPM. Do you have any questions?

**Initiating Cue:**

US to Secondary Operator, **"Secondary Operator (or student's name), restore offsite power to Bus E6 using Attachment L of OS1246.02, Degraded Vital AC Power (Plant Operating)."**



# FPL Energy

## Seabrook Station

### JOB PERFORMANCE MEASURE

Pair C2 - PRESSURIZER PRESSURE CHANNEL FAILURE - NEW

Student Name: \_\_\_\_\_ LMS #: \_\_\_\_\_

Evaluator Name: \_\_\_\_\_ LMS #: \_\_\_\_\_

Student Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
(optional)

Evaluator Signature: \_\_\_\_\_ Date: \_\_\_\_\_

SAT      UNSAT

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PREPARED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
INSTRUCTOR

REVIEWED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
SUBJECT MATTER EXPERT (OPTIONAL)

APPROVED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
Signature/Date on file  
TRAINING SUPERVISOR

## JOB PERFORMANCE WORKSHEET

### 1.0 Task Number and Description:

Position: RO

0110400101 Identify A Pressurizer Instrument Failure

### 2.0 Conditions:

The plant is at 100% power and all systems are normal.

### 3.0 Standards:

Identify a failed pressurizer pressure instrument channel and restore the system per OS1201.06, PZR Pressure Instrument Failure.

### 4.0 Student Materials:

Copy of the Tear-Off Sheet.

Copy of OS1201.06, PZR Pressure Instrument Failure, Rev. 13.

### 5.0 Limitations On Performance:

Simulate/Perform all steps. Verbalize all actions to the evaluator. Even if requested, no Peer Checks will be provided during the JPM.

### 6.0 References:

Procedures:

- OS1201.06, PZR Pressure Instrument Failure.

Technical Specifications:

- 3.3.1, Rx Trip System Instrumentation.
- 3.3.3.6, Accident Monitoring Instrumentation.

Loops and Logics:

- 1-NHY-509027
- 1-NHY-509046

Sys	KA	Description	Value RO/SRO
010	A4.01	Ability to manually operate and/or monitor in the control room: PZR Spray Valves	3.7/3.5
010	A4.02	Ability to manually operate and/or monitor in the control room: PZR Heaters	3.6/3.4
010	A4.03	Ability to manually operate and/or monitor in the control room: PORV and Block Valves	4.0/3.8

## JOB PERFORMANCE WORKSHEET

### 7.0 Setting:

Simulator:

NOTE: JPM is designed to perform in parallel with JPM C1, Offsite Power Restoration.

- A. Initialize the simulator to IC 213 (LEN Pair C1 C2) of any 100% power IC. Place the simulator in RUN.
- B. Ensure that PT-455 is selected for master pressure control and for the Pressurizer pressure recorder.

### 8.0 Safety Considerations:

None

### 9.0 Approximate Completion Time:

20 minutes

### 10.0 Directions To The Student(s):

1. Ensure task is done correctly.
2. You may be asked follow-up questions to confirm knowledge of the task.

Evaluator gives Tear-Off sheet to the student.

Evaluator reads the following to student (Optional for multiple JPMs):

- A. You are the Primary Operator. When an event occurs respond accordingly per the appropriate procedure.
- B. The following information is provided to you:
  1. The plant is at 100% power and all systems are normal.
  2. Respond to any events on the Primary side of the Main Control Board.
- C. We will begin after the Initiating Cue is read.
- D. I will provide the cues and communications for this JPM. Do you have any questions?

### 11.0 Initiating Cue:

US to Primary Operator, **“Primary Operator (or student’s name), perform a Primary side MCB walk down and inform me when you are ready to begin. When an event occurs, respond to the event using the appropriate abnormal procedure.”**

## PERFORMANCE CHECKLIST

	D=Discuss P=Perform S=Simulate	ELEMENT/STEP  * denotes a critical step	STANDARD  * denotes a critical step	EVALUATION  SAT    UNSAT	INITIALS/ DATE
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1.     P     Start time \_\_\_\_\_     Initiating cue read.

**CUE:**     If the student requests a Peer Check at any time during the JPM, respond: **“No one is available to peer check your actions. Please continue with the task”.**

**NOTE: Simulator Operator:**

After the simulator is placed in run, input the following malfunction which causes PZR pressure instrument PT-455 to fail high:

- SELECT: MF List
- SELECT: Reactor Coolant (component)
- Select ptRCPT455
- Double Click
- SELECT: Fail to Specified Value
- SELECT: 2500
- SELECT: INSERT.

\*2.     P     Recognize and report that PT-455 is failing high.     Recognizes and reports that PT- \_\_\_\_\_ 455 is failing high.     \_\_\_\_\_

**NOTE:** Student may initially respond using Abnormal operating procedure or use “SKILL OF THE OPERATOR” to take master pressure controller to manual and increase RCS pressure back to program before entering the abnormal. Either Response is acceptable.

**NOTE:** Because this is a LOIT initial license class JPM the student will act both as procedure reader and performer using OS1201.06, PZR PRESSURE INSTRUMENT FAILURE.

IF Student responds using skill of the operator:

	P*     Recognize that Master Pressure Controller output is increasing and causing RCS pressure to decrease off program.	*     Student places Master Pressure Controller to Manual and begins lowering output to close spray valves and energize Pzr heaters			
--	---	---	--	--	--

Student enters OS1201.06, Abnormal Operating Procedure:

b. OS1201.06 entered.     \_\_\_\_\_

**NOTE:** The remaining steps are performed using OS1201.06.

**PERFORMANCE CHECKLIST**

	D=Discuss P=Perform S=Simulate	ELEMENT/STEP  * denotes a critical step	STANDARD  * denotes a critical step	EVALUATION		INITIALS/ DATE
				SAT	UNSAT	

*3.	P	<ul style="list-style-type: none"> <li>• Check PORVs - CLOSED</li> </ul>	Verifies PORVs CLOSED	_____	_____	_____
*4.	P	* Check Normal PZR Spray Valves - CLOSED	Verifies Spray Valves CLOSED	_____	_____	_____

**NOTE: Channel P-455/P-456 is normally selected for pressure control because a failed LOW RC-PT-458 (selected for backup) or RC-PT-457 (selected for control), will Prevent automatic operation of both pressurizer PORVs.**

5	P	Check Pressurizer Pressure Channels: <ul style="list-style-type: none"> <li>• Controlling Channel FAILED</li> <li>- OR -</li> <li>• Backup Channel FAILED</li> <li>- OR -</li> <li>• Recorder channel FAILED</li> </ul>	Verifies controlling Channel PT-455 FAILED High.	_____	_____	_____
---	---	---	--	-------	-------	-------

6	P	Realign Pressurizer Pressure Instruments	* Manually restores Pressurizer Pressure to Program and Selects alternate pressure channels which do <b>not</b> include PT-455.	_____	_____	_____
---	---	--	---	-------	-------	-------

**NOTE: Student may return RCS pressure to normal (green) band before continuing in abnormal**

a.	Manually control pressurizer pressure AT PROGRAM.	<ul style="list-style-type: none"> <li>• Master pressurizer pressure controller</li> <li>-OR-</li> <li>• Heaters and sprays</li> </ul>	a. Manually controls pressurizer pressure AT PROGRAM.	_____	_____	_____
b.	Select an alternate pressure channel for CONTROL/BACKUP as necessary		b. Select an alternate pressure channel for CONTROL/BACKUP as necessary (457/456)	_____	_____	_____
c.	Select an alternate pressure channel for RECORDER as necessary		c. Select an alternate pressure channel for RECORDER as necessary	_____	_____	_____

**PERFORMANCE CHECKLIST**

	D=Discuss P=Perform S=Simulate	ELEMENT/STEP  * denotes a critical step	STANDARD  * denotes a critical step	EVALUATION		INITIALS/ DATE
				SAT	UNSAT	
		d. Select an alternate deltaT, OT, OP channel for RECORDER as necessary	d. Select an alternate deltaT, OT, OP channel for RECORDER as necessary	_____	_____	_____
*7.	P	5. Align Pressurizer Pressure Control				
		a. RCS Pressure - Trending to 2235 psig.	a* Manually controls pressurizer pressure using heaters and sprays to restore program pressure.	_____	_____	_____
		b. Verify proper controller setpoint and place controllers in auto, as necessary:	Verify proper controller setpoint and place controllers in auto, as necessary			_____
		Master pressure controller- RC-PK-455A	<ul style="list-style-type: none"> <li>Master pressure controller- RC-PK-455A</li> </ul>	_____	_____	_____
		Loop A spray valve control – RC-PK-455C	<ul style="list-style-type: none"> <li>Loop A spray valve control – RC-PK-455C (only if taken to manual)</li> </ul>	_____	_____	_____
		Loop C spray valve control – RC-PK-455B	<ul style="list-style-type: none"> <li>Loop C spray valve control – RC-PK-455B (only if taken to manual)</li> </ul>	_____	_____	_____
		c. . Check Heaters AUTO/ON	c. Check Heaters AUTO/ON	_____	_____	_____

**PERFORMANCE CHECKLIST**

D=Discuss P=Perform S=Simulate	ELEMENT/STEP * denotes a critical step	STANDARD * denotes a critical step	EVALUATION		INITIALS/ DATE
			SAT	UNSAT	

*8.	P	6. Verify Redundant Channel Bistables-NOT TRIPPED UL-1 <ul style="list-style-type: none"> <li>• PZR/MS SI AVAILABLE</li> <li>• PZR PRESS LO SI</li> </ul> UL-6 <ul style="list-style-type: none"> <li>• RCS LOOP OTdeltaT</li> <li>• PRESSURIZER PRESS LO</li> <li>• PRESSURIZER PRESS HI</li> </ul>	Verifies Redundant Channels NOT failed	_____	_____	_____
-----	---	---	--	-------	-------	-------

**CUE: "The JPM is complete."**

9.	Stop time _____	Evaluator calculates the time to complete the task.	Time to complete the task ≤ 20 minutes.			
10.	Obtain from student: Tear Off Sheets and any other training materials used in the performance of the JPM					_____



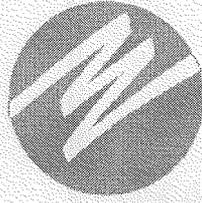
## TEAR-OFF SHEET FOR JPM Pair C2

### **Directions to the Student:**

- A. You are the Primary Operator. When an event occurs respond accordingly per the appropriate procedure.
- B. The following information is provided to you:
  - 1. The plant is at 100% power and all systems are normal.
  - 2. Respond to any events on the Primary side of the Main Control Board.
- C. We will begin after the Initiating Cue is read.
- D. I will act as the US and provide the cues and communications for this JPM. Do you have any questions?

### **Initiating Cue:**

US to Primary Operator, **“Primary Operator (or student’s name), perform a Primary side MCB walk down and inform me when you are ready to begin. When an event occurs, respond to the event using the appropriate abnormal procedure.”**



# FPL Energy

## Seabrook Station

JOB PERFORMANCE MEASURE  
Pair D1- L0035J Rev. 05 – Modified - AP

### BLENDED MAKEUP PERFORMANCE

Student Name: \_\_\_\_\_ Badge #: \_\_\_\_\_

Evaluator Name: \_\_\_\_\_ Badge #: \_\_\_\_\_

Student Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
(optional)

SAT UNSAT

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PREPARED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
INSTRUCTOR

REVIEWED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
SUBJECT MATTER EXPERT (OPTIONAL)

APPROVED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
Signature/Date on File  
TRAINING SUPERVISOR

## JOB PERFORMANCE WORKSHEET

### 1.0 Task Number and Description:

Position: RO

0040100601 Perform A Boron Change Calculation.

### 2.0 Conditions:

- A. A manual blended makeup to the VCT is required due to normal system losses.
- B. After the makeup is initiated CS-FCV -110A, Boric Acid Flow to the Blender, will fail closed, stopping boric acid flow while the RMW flow continues.

### 3.0 Standards:

- A. Perform a 500 gallon manual blended makeup to the VCT.

### 4.0 Student Materials:

Copy of the Tear-Off Sheet  
Copy of completed RS1735, Reactivity Calculations, Rev. 3 Change 03.  
Copy of OS1008.01, CVCS Makeup Operations, Rev. 08, Change 40.

### 5.0 Limitations on performance:

Simulate/Perform all steps. Verbalize all actions to the evaluator.  
Even if requested, no Peer Checks will be provided during the JPM.

### 6.0 References:

Procedures:

- RS1735, Reactivity Calculations.
- OS1008.01, CVCS Makeup Operations.
- OGP-1, Control Switch Operation.

Sys	KA	Description	Value RO/SRO
004	A4.07	Ability to manually operate and/or monitor boration/dilution in the control room.	3.9/3.7

## JOB PERFORMANCE WORKSHEET

### 7.0 Setting:

Simulator:

NOTE: This JPM is designed to be performed in parallel with JPM Pair D2, AS LONG AS the JPM D2 student is controlled to the back of the Main Control Board.

- A. Initialize the simulator to IC 214, LEN Pair D1 D2, or any 100% IC. The student should not refer to the Chemistry Placard for current RCS and BAST concentrations. These values are provided in the body of the JPM and in the key.
- B. Verify or Adjust the VCT level to approximately 40%. Click "External Parameters" then "Tanks". Double Click "VCT" and enter a value of 40%.

### 8.0 Safety Considerations:

None

### 9.0 Approximate Completion Time:

15 Minutes

### 10.0 Directions to the Student(s):

Evaluator gives Tear-Off sheet to the student  
Evaluator reads the following to the student (Optional for multiple JPMs)

Student:

1. Ensures task is done correctly.
  2. May be asked follow-up questions to confirm knowledge of task.
- A. You are the Primary Operator.
- A. The following information is provided to you:
1. A manual makeup to the VCT is required due to normal system losses.
  2. You are going to perform a 500 gallon Manual blended makeup to the Charging Pump Suction.
  3. The makeup will be done at 100 gpm.
  4. STEP BACK will be used.
  5. No Flush is required.
- C. We will begin after the Initiating Cue is read.
-

## JOB PERFORMANCE WORKSHEET

D. I will provide the cues and communications for this JPM. Do you have any questions?

### **11.0 Initiating Cue:**

US to Primary Operator, **“Primary Operator (or student's name), perform a 500 gallon Manual blended makeup to the Charging Pump suction through CS-FCV-110B at 100 gpm.**

**Use of STEP BACK is desired.**

**No FLUSH is required. ”**

## PERFORMANCE CHECKLIST

D=Discuss	ELEMENT/STEP	STANDARD	EVALUATION	INITIALS/DATE
P=Perform	*denotes a	*denotes critical		
S=Simulate	critical step	standard	SAT    UNSAT	

---

1.     P     Start time \_\_\_\_\_                    Initiating cue read.

**CUE:**     If the student requests a Peer Check at any time during the JPM, respond: **“No one is available to peer check your actions. Please continue with the task”.**

**CUE:**     **Give the student the completed RS1735 for the 500 gallon blended makeup.**

**NOTE:** Operators commonly perform this process during BOL and MOL operation until the amount of dilution exceeds normal system losses. This precludes Automatic Makeup operation.

- \*2.     P     Refers to completed RS1735  
Blended Makeup Calculation  
(Form E, Blended Makeup  
Worksheet)
- |   |                 |
|---|-----------------|
| a. Item 1: Desired makeup boron concentration ( $C_{MU}$ )              | a. 1087 PPM     |
| b. Item 2: Desired total makeup flow rate, FK-111, ( $F_{TOT}$ ).       | b. 100 gpm      |
| c. Item 3: Actual Boric Acid Storage Tank concentration ( $C_{BAST}$ ). | c. 7100 ppm     |
| d. Item 4: Desired total makeup, FK-111 ( $G_{TOT}$ )                   | d. 500 gallons  |
| e. Item 5: CALCULATED the boric acid flow rate, FK-110 ( $F_{BA}$ )     | *e. 15.31 gpm   |
| f. Item 6: Calculated total boric acid, FK-110 ( $G_{BA}$ )             | f. 76.5 gallons |

\*3.     P     Refers to OS1008.01 section 4.6 for Aligning Manual Blended Makeup To The VCT                    Performs the following:

## PERFORMANCE CHECKLIST

D=Discuss P=Perform S=Simulate	ELEMENT/STEP *denotes a critical step	STANDARD *denotes critical standard	EVALUATION		INITIALS/DATE
			SAT	UNSAT	
4.6.1	a. DETERMINE the reactor coolant system boron concentration by referring to a recent chemical sample	a. Given with Dilution calculation. (1087 ppm)	_____	_____	
4.6.2	b. DETERMINE the desired flows and quantities of boric acid and total makeup from RS1735, Reactivity Calculations.	b. Given with Dilution calculation	_____	_____	
<p><b>NOTE:</b> Step 4.6.3 "Have an NSO read the local CS-F-5 Boric Acid Filter DP at least once daily during makeup. If the DP is approaching the MAX value initiate a Work Request.</p> <p><b>CUE:</b> If questioned about CS-F-5 DP: <b>CS-F-5 DP was monitored on the previous shift and is ~4 PSIG. Proceed with the Makeup.</b></p>					
4.6.4	c. TURN the BLENDER MODE START SWITCH to STOP.	*c. Turns Blender Mode Start Switch to STOP.	_____	_____	
4.6.5	d. PLACE the BORIC ACID BLENDER MODE SELECTOR SWITCH to MANUAL	*d. Places Boric Acid Blender Mode Selector Switch to MANUAL.	_____	_____	
4.6.6	e. SET CS-FIQ-111, RCS makeup flow controller, to the desired MAKEUP quantity.	*e. Sets CS-FIQ-111 (500 gallons).	_____	_____	
4.6.7	f. SET CS-FIQ-111, RCS makeup flow controller to the desired BORIC ACID quantity.	*f. Sets boric acid supply counter to the desired quantity (76.5 gallons).	_____	_____	

**NOTE** Prior to Step 4.6.8 "The AUTO CAL Function allows the controller to calculate the optimal flow rate setpoint for total makeup and boric acid, based on the batch target volumes selected. Figure 5, AUTO CAL Flowrate Setpoints, contains a table showing flow rate vs target Volume."

**CUE:** If questioned about use of AUTO CAL: **AUTO CAL will not be used for this makeup.**

## PERFORMANCE CHECKLIST

D=Discuss P=Perform S=Simulate	ELEMENT/STEP *denotes a critical step	STANDARD *denotes critical standard	EVALUATION  SAT    UNSAT	INITIALS/DATE
--------------------------------------	---	---	--------------------------------	---------------

**Proceed with the Makeup.**

4.6.9    g. SET CS-FIQ-111, RCS makeup flow controller to the desired MAKEUP FLOWRATE                      \*g. Sets Makeup flowrate to the desired quantity 100 gpm.                      \_\_\_\_\_

4.6.10    h. SET CS- FIQ-111, RCS makeup flow controller to the desired BORIC ACID FLOWRATE.                      \*h. Sets Boric Acid flowrate 15.3 gpm.                      \_\_\_\_\_

**CUE: Step 4.6.11 Turns OFF Step Back. Per directions Step Back is being used so step 4.6.11 is N/A.**

4.6.12    i. SET CS- FIQ-111, RCS makeup flow controller FLOWRATE SETPOINT SCREEN to FLUSH, 0 gallons                      \*i. Sets FLUSH volume to desired volume (0 gallons).                      \_\_\_\_\_

4.6.13    j. If it is desired to align the boric acid blender to the Charging Pumps, OPEN FCV-110B, BORIC ACID BLENDER TO CHG PUMPS.                      \*j. Opens CS-FCV-110B.                      \_\_\_\_\_

**NOTE: Insure the student remains "at the makeup controls" during the remainder of the JPM (per the CAUTION in Section 4.6 of OS1008.01). Since this is not a procedurally defined area, it cannot be evaluated as a critical step.**

k. TURN the BLENDER MODE START SWITCH to START                      \*k. Turns Blender Mode Start Switch to START.                      \_\_\_\_\_

l. VERIFY that the boric acid and total makeup flow rates match the preset values and that each flow controller stops flow when its preset quantity has been added.                      l. Checks that boric acid and total MU flow rates match their preset values.                      \_\_\_\_\_

## PERFORMANCE CHECKLIST

D=Discuss	ELEMENT/STEP	STANDARD	EVALUATION	INITIALS/DATE
P=Perform	*denotes a	*denotes critical	SAT	UNSAT
S=Simulate	critical step	standard		

**CUE:** JPM is faulted so that, after flow rates stabilize, CS-V-110A will fail closed causing a loss of Boric Acid flow, with only RMW dilution flow continuing. Students should report to US that blended makeup flow rate is erroneous and stop makeup.

**CUE:** If student recommends to the US that flow should be stopped: **“I Understand that there is a problem with the blended makeup. Stop the blended makeup.”**

m. TURN the BLENDER MODE START SWITCH to STOP.	*m Turns Blender Mode Start Switch to STOP.	_____
--	--	-------

**CUE:** When student has stopped RMW flow : **“The JPM is complete.”**

4.	Stop time	Start - Stop time is $\leq$ 15 minutes.
	Evaluator calculates the time to complete the task.	



TEAR-OFF SHEET FOR JPM Pair D1

**Directions to the Student:**

- A. You are the Primary Operator.
- B. The following information is provided to you:
  - 1. A manual makeup to the VCT is required due to normal system losses.
  - 2. You are going to perform a 500 gallon Manual blended makeup to the Charging Pump Suction.
  - 3. The makeup will be done at 100 gpm.
  - 4. STEP BACK will be used.
  - 5. No Flush is required.
- C. We will begin after the Initiating Cue is read.
- D. I will provide the cues and communications for this JPM. Do you have any questions?

**Initiating Cue:**

US to Primary Operator, **“Primary Operator (or student’s name), perform a 500 gallon Manual blended makeup to the Charging Pump suction through CS-FCV-110B at 100 gpm.**

**Use of STEP BACK is desired.**

**No FLUSH is required.”**

# Form E: Blended Makeup Worksheet

(Sheet 1 of 1)

1. Desired Makeup Boron Concentration ( $C_{MU}$ ) 1087 ppm
2. Desired Makeup Flow Rate SETPOINT: FIQ-111 ( $F_{TOT}$ ) 100 gpm
3. Boric Acid Storage Tank Concentration ( $C_{BAST}$ ) 7100 ppm
4. Desired Makeup Quantity TARGET: FIQ-111 ( $G_{TOT}$ ) 500 gals
5. Boric Acid Flow Rate SETPOINT: FIQ-111 ( $F_{BA}$ )

$$F_{BA} = \frac{(C_{MU})(F_{TOT})}{C_{BAST}} = \frac{(1087)(100)}{(7100)} = 15.31 \text{ gpm}$$

6. Boric Acid Quantity TARGET: FIQ-111 ( $G_{BA}$ )

$$G_{BA} = \frac{(C_{MU})(G_{TOT})}{C_{BAST}} = \frac{(1087)(500)}{(7100)} = 76.5 \text{ gal}$$

Calculated By:

Edmund Wilton

Date:

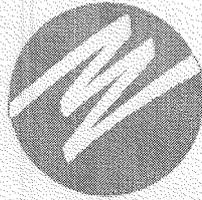
5.13.09

Independently Verified By:

Tony Norgay

Date:

5.13.09



# FPL Energy

## Seabrook Station

JOB PERFORMANCE MEASURE  
Pair D2- AP - NEW

INITIATE A CRFRM ACTUATION

Student Name: \_\_\_\_\_ LMS #: \_\_\_\_\_  
Evaluator Name: \_\_\_\_\_ LMS #: \_\_\_\_\_  
Student Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
(optional)  
Evaluator Signature: \_\_\_\_\_ Date: \_\_\_\_\_

SAT      UNSAT

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PREPARED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
INSTRUCTOR

REVIEWED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
SUBJECT MATTER EXPERT (OPTIONAL)

APPROVED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
Signature/Date on file  
TRAINING SUPERVISOR

## JOB PERFORMANCE WORKSHEET

### 1.0 Task Number and Description:

Position: RO

1050400301 Remove the control room ventilation system from the filter recirculation mode.

### 2.0 Conditions:

- A. The plant is at 100% power.
- B. A fire near the East Air Intake of the CBA system will require shifting Control Room Ventilation to the Filter Recirculation Mode.
- C. A component malfunction will prevent CBA-DP-28, "Train 'A' Control Room Exhaust Damper" and CBA-DP-1058, "Train 'B' Control Room Exhaust Damper" from automatically closing when the CRFRM is actuated. The dampers will need to be closed manually.
- D. The student will use VAS procedure "D7040 : EAST AIR INTAKE SMOKE CONC HI" and/or OS1223.01, "LOSS OF CONTROL ROOM VENTILATION OR AIR CONDITIONING" to re-align CBA to filter recirculation alignment, and manually close CBA-DP 28/1058 ("ganged switch for both dampers") to provide positive pressure control of the Control Room space.
- E. This JPM is designed to be given in parallel with Pair D1, Blended makeup to the VCT. Only 4 of the students will be required to perform both of these JPMs. Those 4 students will perform this JPM (Pair D2) first which will keep them behind the Main Control Panel, and unable to see any performance of, or alarms resulting from JPM Pair D1.

### 3.0 Standards:

- A. Align control room ventilation to the Filter Recirculation makeup mode per VAS alarm response for D7040, EAST AIR INTAKE SMOKE CONC HI and OS1223.01, LOSS OF CONTROL ROOM VENTILATION OR AIR CONDITIONING.

### 4.0 Student Materials:

Copy of the Tear-Off Sheet.

VAS alarm response for D7040, EAST AIR INTAKE SMOKE CONC HI  
OS1223.01, LOSS OF CONTROL ROOM VENTILATION OR AIR CONDITIONING

### 5.0 Limitations on performance:

Simulate/Perform all steps. Verbalize all actions to the evaluator.

## JOB PERFORMANCE WORKSHEET

### 6.0 References:

#### Procedures

VAS alarm response for D7040, EAST AIR INTAKE SMOKE CONC HI  
OS1223.01, Loss of Control Room Ventilation or Air Conditioning.

#### Technical Specifications

3.7.6, CR AREA VENTILATION.

Sys	KA	Description	Value RO/SRO
013	K1.13	HVAC.	2.8/3.1
013	K1.18	Premature Reset of ESF actuation.	3.7/4.1
013	K4.10	Safeguards equip control reset.	3.3/3.7
013	A3.02	Operation and actuated equipment.	4.1/4.2
2.1	2.1.30	Ability to locate and operate components.	4.3/4.4
2.1	2.1.23	Ability to perform integrated and specific plant procedures all modes.	4.4/4.0
072	K1.04	Control Room Ventilation.	3.3/3.5

### 7.0 Setting:

NOTE: This JPM is designed to be performed in parallel with JPM pair D1, Blended OT Makeup Performance. Students should be controlled to preclude seeing the details of the other JPM.

Reset the simulator to IC #214, LEN Pair D1 D2, or any 100% IC which contains the following:

1. Initialize to the 100% IC
2. Train A of normal CBA running and Train B of normal CBA in standby per OS1023.51, CR VENTILATION AND AIR CONDITIONING SYSTEM Operation.
3. Set an EVENT TRIGGER which will cause CBA-DP-28, "Train 'A' Control Room Exhaust Damper", and CBA-DP-10598, "Train 'B' Control Room Exhaust Damper" to stay OPEN when a CRFRM signal is actuated.
4. Place the simulator in FREEZE.

Place the simulator in RUN. Acknowledge all alarms.

## JOB PERFORMANCE WORKSHEET

### 8.0 Safety Considerations:

None

### 9.0 Approximate Completion Time:

25 minutes

### 10.0 Directions to the Student(s):

Evaluator gives Tear-Off sheet to the student  
Evaluator reads the following to the student (Optional for multiple JPMs)

Student:

1. Ensures task is done correctly.
2. May be asked follow-up questions to confirm knowledge of task.
  - A. You are the Primary Operator.
  - B. The following information is provided to you:
    1. The plant is at 100% power.
    2. All equipment is in a normal alignment.
    3. There is a report of a fire in the Sherwin Building.
    4. VAS alarm "D7040 : EAST AIR INTAKE SMOKE CONC HI" is in alarm.
    5. You are required to respond appropriately.
    6. (If JPM is given in parallel with Pair D1: "The BOP operator will attend the Main Control Board while you respond to this situation.")
  - C. We will begin after the Initiating Cue is read.
  - D. I will provide the cues and communications for this JPM. Do you have any questions?

### 11.0 Initiating Cue:

**"Primary Operator (or student's name), There is a report of a fire in the Sherwin Building. VAS alarm "D7040: EAST AIR INTAKE SMOKE CONC HI" is in alarm. The Unit Supervisor and the BOP will respond to the fire. You are required to respond to the VAS alarm.**

**(If JPM is given in parallel with Pair D1: "The BOP operator will attend the Main Control Board while you respond to this situation.")**

**PERFORMANCE CHECKLIST**

D=Discuss	ELEMENT/STEP	STANDARD	EVALUATION		INITIALS/DATE
P=Perform	*denotes a	*denotes critical			
S=Simulate	critical step	standard	SAT	UNSAT	

1. P Start time \_\_\_\_\_ Initiating cue read.

**NOTE:** Student may use the direction in VAS procedure D7040 ; EAST AIR INTK SMOKE CONC HI, to initiate filter recirculation actuation, or they may enter Abnormal operating procedure OS1223.01 and actuate Filter Recirculation using the procedure guidance. Either method is suitable.

**CUE:** Provide candidate with a printed copy of D7040 VPRO.

**IF** using guidance in **VAS procedure** first:

**NOTE:** VAS procedure D7040 ; EAST AIR INTK SMOKE CONC HI, contains a note stating: “ B Train in filter Recirc Mode is preferred because CBA-F-8038 Charcoal Sampling Canisters can be removed without affecting OPERABILITY.”

Actuating either train of CBA into Filter Recirculation is acceptable performance for this JPM.

<p>2. P PLACE CBA ventilation in FILTER RECIRC MODE utilizing one of the following:</p> <ul style="list-style-type: none"> <li>• CR MAKE-UP AIR TRAIN A FILTER RECIRC MODE</li> <li>• CR MAKE-UP AIR TRAIN B FILTER RECIRC MODE</li> </ul>	<p>PLACE either of the following control switches to FILTER RECIRC MODE:</p> <ul style="list-style-type: none"> <li>• * CR MAKE-UP AIR TRAIN :A to “FILTER RECIRC MODE”.</li> <li style="text-align: center;">or</li> <li>• * CR MAKE-UP AIR TRAIN B to “FILTER RECIRC MODE”.</li> </ul>	<p>_____</p> <p>_____</p> <p>_____</p>
--	--	--

**NOTE:** Dispatch a Shift Fire Fighter or NSO to the EAST AIR INTAKE to verify the intake smoke high concentration. Evaluator cue: **A NSO/Firefighter has been dispatched to the east air intake.**

**NOTE** If Control Room Habitability is challenged, don SCBA. Evaluator cue: **Control room habitability is NOT challenged at this time**

3 P Go to OS1223.01, “Loss of Control Room Ventilation or Air Conditioning.” Student enters OS1223.01, “Loss of Control Room Ventilation or Air Conditioning.” \_\_\_\_\_

**Upon Entry into OS1223.01, Loss or Control Room Ventilation or Air Conditioning.**

**NOTE:** Checking Control Room Temperature GREATER THAN 75 degrees (Installed Thermometer is not simulated in Simulator). Evaluator cue: **Control Room Temperature is 70 degrees.**

### PERFORMANCE CHECKLIST

	D=Discuss P=Perform S=Simulate	ELEMENT/STEP *denotes a critical step	STANDARD *denotes critical standard	EVALUATION  SAT    UNSAT	INITIALS/DATE
--	--------------------------------------	---	---	--------------------------------	---------------

4	P	Step 1 Check Control Room Air Conditioning Status:			
Step 1	a	Control Room temperature GREATER THAN 75 degs.	a Temperature is NOT greater than 75 degrees (70 degrees). RNO transitions to step 3.	_____	_____

3	P	3 Determine if an Air Intake Must be isolated due to Smoke.			
Step 3	A	Check the following: D7040 EAST AIR INTAKE SMOKE CONC HI – IN ALARM	A* Student recognizes that D7040 is in ALARM	_____	_____
a		or			

**CUE:** When asked if D8426 is in alarm, tell candidate the D-Point is NOT in alarm

		D8426 WEST AIR INTAKE SMOKE CONC HI – IN ALARM	Student recognizes that D8426 in NOT in ALARM		
		or			
		Notification that smoke or potentially harmful material is being introduced into air intake	Student recognizes that smoke is not being introduced into the control room at this time.	_____	_____

**NOTE** Student may have already initiated CRFRM using the direction in the VAS procedure if they processed the VAS before entering the AOP

**NOTE:** Note in procedure ; “ B Train in filter Recirc Mode is preferred because CBA-F-8038 Charcoal Sampling Canisters can be removed without affecting OPERABILITY.”  
Actuating either train of CBA into Filter Recirculation is acceptable performance for this JPM.

4	P	PLACE CBA ventilation in FILTER RECIRC MODE utilizing one of the following:	PLACE either of the following control switches to FILTER RECIRC MODE:		
Step 4	•	CR MAKE-UP AIR TRAIN A FILTER RECIRC MODE	• * CR MAKE-UP AIR TRAIN :A to “FILTER RECIRC MODE”.	_____	_____
a			or		
Step 4	•	CR MAKE-UP AIR	• * CR MAKE-UP AIR	_____	_____

**PERFORMANCE CHECKLIST**

D=Discuss	ELEMENT/STEP	STANDARD	EVALUATION		INITIALS/DATE
P=Perform	*denotes a	*denotes critical			
S=Simulate	critical step	standard	SAT	UNSAT	

---

a	TRAIN B FILTER RECIRC MODE	TRAIN B to "FILTER RECIRC MODE".			
---	----------------------------	----------------------------------	--	--	--

Step 4 P	B	Verify Air Intake Isolation Valves - OPEN			
b		1-CBA-V-9 East Air Intake	* Verifies 1-CBA-V-9 Open by light indication on MCB	_____	_____
		2-CBA-V-9 West Air Intake	* Verifies that 2-CBA-V-9 West Air Intake is OPEN by light indication on MCB	_____	_____

Step 4 P	c	CLOSE affected Air Intake Isolation Valve.			
c		1-CBA-V-9 East Air Intake	* Directs NSO to CLOSE 1-CBA-V-9, verifies valve is CLOSED by light indication on MCB	_____	_____

**CUE:** As NSO report that you will take action to close 1-CBA-V-9. Direct the candidate to continue with procedure while valve is being closed.

**CUE:** **Simulator operator:** Select Remote Functions, Control Building Air Handling, SELECT rFCBA001, 1-CBA-V9, East Air Intake Isolation, SELECT: CLOSE, SELECT INSERT; to close the valve.

**NOTE** Components on ACTUATED train will reposition upon CRFRM actuation. Components for train not actuated are repositioned by the operator as lineup is verified.

\*5. Verify Normal Makeup Air Isolated

Step 5 P	a	Makeup Air Fan - OFF			
a		• CBA-FN-27A EMER MU FAN	*• STOPS/VERIFIES STOPPED CBA-FN-27A.	_____	_____
		• CBA-FN-27B EMER MU FAN	*• STOPS/VERIFIES STOPPED CBA-FN-27B.	_____	_____

Step 5 b	B	Makeup Air Fan Discharge Damper CLOSED			
		• CBA-DP-53A	• CHECKS CLOSED/	_____	_____

---

### PERFORMANCE CHECKLIST

D=Discuss	ELEMENT/STEP	STANDARD	EVALUATION	INITIALS/DATE
P=Perform	*denotes a	*denotes critical		
S=Simulate	critical step	standard	SAT    UNSAT	

---

		CLOSE CBS-DP-53A, CR MU AIR DAMPER		
6.	Verify CBA Exhaust and Filter Recirc Fan Alignment	<ul style="list-style-type: none"> <li>● CBA-DP-53B</li> </ul>	<ul style="list-style-type: none"> <li>● CHECKS CLOSED/ CLOSE CBS-DP-53B, CR MU AIR DAMPER</li> </ul>	<hr style="width: 100%;"/>
Step 6 a	P a Filter Fan outlet damper for the train on recirculation - OPEN	<ul style="list-style-type: none"> <li>● CBA-DP-27A</li> </ul>	<ul style="list-style-type: none"> <li>●* OPENS/ VERIFY OPEN CBA-DP-27A</li> </ul>	<hr style="width: 100%;"/>
		<ul style="list-style-type: none"> <li>● CBA-DP-27B</li> </ul>	<ul style="list-style-type: none"> <li>●* OPENS/ VERIFY OPEN CBA-DP-27B</li> </ul>	<hr style="width: 100%;"/>
Step 6 b	P b Filter Fan for the train on recirculation - RUNNING	<ul style="list-style-type: none"> <li>● CBA-FN-16A</li> </ul>	<ul style="list-style-type: none"> <li>●* STARTS/ VERIFIES RUNNING CBA-FN-16A</li> </ul>	<hr style="width: 100%;"/>
		<ul style="list-style-type: none"> <li>● CBA-FN-16B</li> </ul>	<ul style="list-style-type: none"> <li>●* STARTS/ VERIFIES RUNNING CBA-FN-16B</li> </ul>	<hr style="width: 100%;"/>

**NOTE** CBA-DP-28 and DP-1058 were failed open in initial JPM setup. Student should recognize that the dampers are OPEN and close the dampers manually. CBA-DP-28/1058 have a single "ganged" control switch which operates both dampers.

Step 6 c	P c Control Room Exhaust Damper - CLOSED	<ul style="list-style-type: none"> <li>● CBA-DP-28</li> </ul>	<ul style="list-style-type: none"> <li>●* CLOSES CBA-DP-28</li> </ul>	<hr style="width: 100%;"/>
		<ul style="list-style-type: none"> <li>● CBA-DP-1058</li> </ul>	<ul style="list-style-type: none"> <li>●* CLOSES CBA-DP-1058</li> </ul>	<hr style="width: 100%;"/>
Step 6 d	P d CBA-FN-15, Control Room Exhaust Fan - OFF	d	VERIFIES CBA-FN-15 OFF	<hr style="width: 100%;"/>

**CUE:** "The JPM is complete."

14. Stop time \_\_\_\_\_ Time to complete the task ≤ 25 minutes.

**PERFORMANCE CHECKLIST**

D=Discuss  
P=Perform  
S=Simulate

ELEMENT/STEP  
\*denotes a  
critical step

STANDARD  
\*denotes critical  
standard

EVALUATION  
SAT UNSAT

INITIALS/DATE

---

Evaluator calculates the time to complete the task.

15.

Obtain from student:  
Tear Off Sheets and any other  
training materials used in the  
performance of the JPM

\_\_\_\_\_



## TEAR-OFF SHEET FOR JPM Pair D2

### Directions to the Student:

- A. You are the Primary Operator.
- B. The following information is provided to you:
  - 1) The plant is at 100% power.
  - 2) All equipment is in a normal alignment.
  - 3) There is a report of a fire in the Sherwin Building on site.
  - 4) VAS alarm "D7040: EAST AIR INTAKE SMOKE CONC HI" is in alarm.
  - 5) You are required to respond appropriately.
  - 6) (If JPM is given in parallel with Pair D1: "The BOP operator will attend the Main Control Board while you respond to this situation."):
- C. We will begin after the Initiating Cue is read.
- D. I will act provide the cues and communications for this JPM. Do you have any questions?

### 12.0 Initiating Cue:

**"Primary Operator (or student's name), There is a report of a fire in the Sherwin Building. VAS alarm "D7040: EAST AIR INTAKE SMOKE CONC HI" is in alarm. The Unit Supervisor and the BOP will respond to the fire. You are required to respond to the VAS alarm.**

**(If JPM is given in parallel with Pair D1: "The BOP operator will attend the Main Control Board while you respond to this situation.")**

Number <b>OS1223.01</b>	Title <b>LOSS OF CONTROL ROOM VENTILATION OR AIR CONDITIONING</b>	Rev./Date <b>14 06/18/08</b>
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**A. PURPOSE**

The purpose of this procedure is to provide actions for a loss of control room air conditioning or ventilation system.

**B. SYMPTOMS OR ENTRY CONDITIONS**

- Remote air intake high radiation level.
- Smoke contamination of control room makeup air.
- Computer alarms associated with a loss or degraded control room ventilation system or control room filter recirculation actuation.
- High or low control room temperature.

**C. REFERENCES**

1. UFSAR Section 6.4.3.3 (Step 3)

**B. EXPIRATION DATE**

06/18/10

**FOR INFORMATION ONLY**

Number <b>OS1223.01</b>	Title <b>LOSS OF CONTROL ROOM VENTILATION OR AIR CONDITIONING</b>	Rev./Date <b>14 06/18/08</b>
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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
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**NOTE** Both CBA-FN-14 discharge dampers fail closed on a loss of instrument air.

**1 Check Control Room Air Conditioning Status:**

a. Control room temperature -  
GREATER THAN 75°F

b. Check either of the following control room air conditioning units running:

- NNS CBA Chill Water System

- OR -

- One train of safety related control room air conditioning system

a. Go to Step 3.

b. Perform the following:

1) Start standby air conditioning unit as follows:

- Start NNS CBA Chill Water System per OS1023.51, CONTROL ROOM VENTILATION AND AIR CONDITIONING SYSTEM OPERATION.

- OR -

- Start one train of Safety Related Control Room Air Conditioning per OS1023.51, CONTROL ROOM VENTILATION AND AIR CONDITIONING SYSTEM OPERATION

IF CBA-FN-14 discharge damper(s) fail closed, THEN locally open discharge damper (75 foot elevation above AC units) as directed by US:

a) Back off jam nut on discharge damper actuator shaft:

CBA-FN-14A - Damper 26A
-------------------------

CBA-FN-14B - Damper 26B
-------------------------

b) Open discharge damper by turning handwheel in clockwise direction.

**Step continued on the next page.**

Number <b>OS1223.01</b>	Title <b>LOSS OF CONTROL ROOM VENTILATION OR AIR CONDITIONING</b>	Rev./Date <b>14 06/18/08</b>
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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
	<p>c. Maximize cooling for the running CBA unit:</p> <ul style="list-style-type: none"> <li>• IF the NNS CBA Chill Water System is running, THEN reduce CBA-TIC-21006 setpoint to 70°F</li> </ul> <p style="text-align: center;">- OR -</p> <ul style="list-style-type: none"> <li>• IF the Safety Related Control Room Air Conditioning System is running, THEN place the running train's control switch to AUTO (MCB-CR)</li> </ul> <p>d. Place CBA-DP-52, control room recirc damper, control switch to AUTO (MCB-CR)</p>	
<b>2</b>	<p><b>Check Control Room Temperature - DECREASING</b></p> <p><b>NOTE</b> <i>Smoke contamination of a control room air intake will require manual isolation of the affected air intake. (Ref: 1.0)</i></p>	<p>Perform actions to reduce control room temperature using ATTACHMENT A</p>
<b>3</b>	<p><b>Determine If An Air Intake Must Be Isolated Due To Smoke: (Ref: 1.0)</b></p> <p>a. Check the following:</p> <ul style="list-style-type: none"> <li>• D7040 EAST AIR INTAKE SMOKE CONC HI - IN ALARM:</li> </ul> <p style="text-align: center;">- OR -</p> <ul style="list-style-type: none"> <li>• D8426 WEST AIR INTAKE SMOKE CONC HI - IN ALARM</li> </ul> <p style="text-align: center;">- OR -</p> <ul style="list-style-type: none"> <li>• Notification that smoke or potentially harmful material is being introduced into air intake</li> </ul>	<p>a. Go to Step 7.</p>

Number <b>OS1223.01</b>	Title <b>LOSS OF CONTROL ROOM VENTILATION OR AIR CONDITIONING</b>	Rev./Date <b>14 06/18/08</b>
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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
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**NOTE** *B Train in filter recirc mode is preferred because CBA-F-8038 charcoal sampling canisters can be removed without affecting operability.*

**4 Place Control Room Ventilation In Filter Recirc Mode:**

a. Position CBA ventilation system to the - FLTR RECIRC MODE

- Train B mode selector switch

- OR -

- Train A mode selector switch

b. Verify air intake isolation valves - OPEN:

1-CBA-V9 East air intake  
2-CBA-V9 West air intake

b. Locally open unaffected air intake valve:

1-CBA-V9 East air intake  
2-CBA-V9 West air intake

c. Close the affected air intake isolation valve:

1-CBA-V9 East air intake  
2-CBA-V9 West air intake

**5 Verify Normal Makeup Air Isolated:**

a. Makeup air fan - OFF

CBA-FN-27A  
CBA-FN-27B

a. Stop fan

b. Makeup air fan discharge damper - CLOSED

CBA-DP-53A  
CBA-DP-53B

b. Close damper

Number <b>OS1223.01</b>	Title <b>LOSS OF CONTROL ROOM VENTILATION OR AIR CONDITIONING</b>	Rev./Date <b>14 06/18/08</b>
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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
<b>6</b>	<b>Verify CBA Exhaust And Filter Recirc Fan Alignment:</b>	
a.	Filter fan outlet damper for the train on recirc - OPEN  CBA-DP-27A CBA-DP-27B	a. Open the required filter fan outlet damper:  CBA-DP-27A CBA-DP-27B
b.	Filter fan for the train on recirc - RUNNING  CBA-FN-16A CBA-FN-16B	b. Start the required filter fan:  CBA-FN-16A CBA-FN-16B
c.	Control room exhaust damper - CLOSED  CBA-DP-28 CBA-DP-1058	c. Close control room exhaust dampers:  CBA-DP-28 CBA-DP-1058
d.	CBA-FN-15, control room exhaust fan - OFF	d. Stop CBA-FN-15, control room exhaust fan.
<b>7</b>	<b>Check Air Intake Radiation Levels:</b>	
a.	Radiation monitors - NORMAL:  A Train RM-6506A (A1,A2) East air intake RM-6507A (A1,A2) West air intake  B Train RM-6506B (A1,A2) East air intake RM-6507B (A1,A2) West air intake	a. Refer to OS1252.02 AIRBORNE HIGH RADIATION, while continuing with this procedure.

Number <b>OS1223.01</b>	Title <b>LOSS OF CONTROL ROOM VENTILATION OR AIR CONDITIONING</b>	Rev./Date <b>14 06/18/08</b>
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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
<b>8</b>	<b>Verify Control Room Pressure Control - NORMAL:</b>	
a.	F7043, CTL RM/OUTSIDE ATMOS PRESS LOW - RESET	a. Perform the following: 1) Check control room doors - CLOSED: <div style="border: 1px solid black; padding: 5px; margin: 5px 0;">C325 Control room front door C312 Control room back door</div>
b.	F7009, CTL RM MAKEUP AIR FLTR RECIRC MODE - RESET	b. Go to Step 8e
c.	CBA-FN-15, control room exhaust fan - RUNNING	c. Perform the following: 1) Open control room exhaust dampers: <div style="border: 1px solid black; padding: 5px; margin: 5px 0;">CBA-DP-28 CBA-DP-1058</div> 2) Start CBA-FN-15
d.	Control room static pressure controller - CONTROLLING IN AUTO	d. Establish 0.20 to 0.30 inches water column pressure using manual control.
e.	Verify technical specification compliance: <ul style="list-style-type: none"><li>• T.S. 3.7.6.1, Control Room Subsystems Emergency Makeup Air And Filtration</li><li>• T.S. 3.7.6.2, Control Room Subsystems Air Conditioning</li><li>• T.S. 3.3.3.1, Radiation Monitoring For Plant Operations</li><li>• TR24-3.7.10, Area Temperature Monitoring</li></ul>	

Number <b>OS1223.01</b>	Title <b>LOSS OF CONTROL ROOM VENTILATION OR AIR CONDITIONING</b>	Rev./Date <b>14 06/18/08</b>
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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
9	<b>Check If CBA Can Be Restored To Normal Alignment:</b>  a. SI - RESET  b. East and west air intakes - RADIATION NORMAL  c. East and west air intakes - NO SMOKE PRESENT  d. No T.S. action statements requiring filter recirculation are in effect	<u>WHEN</u> conditions are normal, <u>THEN</u> go to Step 10.
10	<b>Check Air Intake Isolation Valves - OPEN</b>  <div data-bbox="284 961 751 1072" style="border: 1px solid black; padding: 5px;">           1-CBA-V9 East air intake            2-CBA-V9 West air intake         </div>	Locally open air intake isolation valves:  <div data-bbox="994 961 1424 1072" style="border: 1px solid black; padding: 5px;">           1-CBA-V9 East air intake            2-CBA-V9 West air intake         </div>
11	<b>Align Control Room To Normal Makeup Mode:</b>  a. Go to OS1023.51 CONTROL ROOM VENTILATION and AIR CONDITIONING SYSTEM OPERATION	
- END -		

Number <b>OS1223.01</b>	Title <b>LOSS OF CONTROL ROOM VENTILATION OR AIR CONDITIONING</b>	Rev./Date <b>14 06/18/08</b>
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## ATTACHMENT A

### ACTIONS TO REDUCE CONTROL ROOM TEMPERATURE

- 1 Open front and back doors on the following cabinets:**
  - CP-1 Cabinet 1
  - CP-2 Cabinet 2
  - CP-3 Cabinet 3
  - CP-4 Cabinet 4
  - CP-297A BOP cabinet (behind MCB next to TSC wall)
  - CP-297B BOP cabinet (behind MCB next to TSC wall)
- 2 Open all main control board doors.**
- 3 Shutdown non-essential office equipment in control room complex:**
  - Computers
  - Printers
  - Copier Machines
- 4 Turn off lighting in non-essential areas of control room complex using wall mounted light switches.**
- 5 Shutdown kitchen appliances.**
- 6 At CBA-CP-247, on west wall of the CBA mechanical room, place the following electric unit heater control switches to OFF:**
  - CBA-UH-120
  - CBA-UH-121
  - CBA-UH-122
  - CBA-UH-123
  - CBA-UH-124
  - CBA-UH-125
- 7 Evacuate non essential personnel from the control room complex.**

**ATTACHMENT A CONTINUED ON THE NEXT PAGE**

Number <b>OS1223.01</b>	Title <b>LOSS OF CONTROL ROOM VENTILATION OR AIR CONDITIONING</b>	Rev./Date <b>14 06/18/08</b>
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### ATTACHMENT A

#### ACTIONS TO REDUCE CONTROL ROOM TEMPERATURE

- 8 Perform the following to provide supplemental cooling from computer room:**
- a. Verify computer room AC unit 78 is operating.
  - b. Adjust computer room AC unit 78 temperature control setpoint to minimum setting.
  - c. Notify Fire Protection personnel to disable the computer room halon fire suppression system by placing the Agent Release CKT to the DISC position, inside FP-CP-386. The ensuing alarm can be silenced by momentarily depressing the Trouble Silence switch.  
  
IF Fire Protection personnel are unavailable, THEN FP-CP-386 can be opened with key #39 from the Ops Uncontrolled Key Locker.
  - d. Establish fire watches as required by T.R. 11-3.7.9.5 and block open the following doors:
    - C302 Computer room front door
    - C303 Computer room back door
    - C316 I&C calibration shop door
    - C304 TSC library door
    - C305 CBA mechanical room door
- 9 Verify control room ventilation is in normal makeup mode per OS1023.51, CONTROL ROOM VENTILATION AND AIR CONDITIONING SYSTEM OPERATION.**
- 10 Continue attempts to restart either the NNS CBA Chill Water System OR a train of Safety Related Control Room Air Conditioning per OS1023.51, CONTROL ROOM VENTILATION AND AIR CONDITIONING SYSTEM OPERATION.**

**ATTACHMENT A CONTINUED ON THE NEXT PAGE**

Number <b>OS1223.01</b>	Title <b>LOSS OF CONTROL ROOM VENTILATION OR AIR CONDITIONING</b>	Rev./Date <b>14 06/18/08</b>
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## ATTACHMENT A

### ACTIONS TO REDUCE CONTROL ROOM TEMPERATURE

**NOTE** All lighting panels are located on the north wall of the computer room.

**11 Deenergize non essential control room lighting as follows:**

- Open circuit 2 at EL22
- Open circuits 1, 2, 3, 5, 6 and 8 at EL23
- Open circuits 1, 2, 3, 4 and 6 at XL8
- Open circuits 3, 5, 6, 13, 14, 15, 24 and 26 at L31
- Open circuits 2, 3, 6, 9, 13, 15 and 16 at L42

**12 Maintain all doors to offices open to maximize the cooling effect of the concrete walls.**

**13 Remove the following ceiling tiles to maximize cooling effect of concrete in the overhead:**

- 3 ceiling tiles in the walkway area in front of the SSPS and NI cabinets.
- 7 ceiling tiles in the area directly behind the main control board.

**ATTACHMENT A CONTINUED ON THE NEXT PAGE**

Number <b>OS1223.01</b>	Title <b>LOSS OF CONTROL ROOM VENTILATION OR AIR CONDITIONING</b>	Rev./Date <b>14 06/18/08</b>
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## ATTACHMENT A

### ACTIONS TO REDUCE CONTROL ROOM TEMPERATURE

- 14 **WHEN** a control room cooling system is restored **AND** control room temperature is below 75°F, **THEN** perform the following to return the CBA system to normal configuration:
- a. Close the following computer room doors:
    - C302 Computer room front door
    - C303 Computer room back door
    - C316 I&C calibration shop door
    - C304 TSC library door
    - C305 CBA mechanical room door
  - b. Exit T.R. 11-3.7.9.5 and release fire watches.
  - c. Notify Fire Protection personnel to enable computer room halon fire suppression system by placing Agent Release CKT to the NORMAL position, inside FP-CP-386.
  - d. Close front and back doors on the following cabinets:
    - CP-1 Cabinet 1
    - CP-2 Cabinet 2
    - CP-3 Cabinet 3
    - CP-4 Cabinet 4
    - CP-297A BOP Cabinet
    - CP-297B BOP Cabinet
  - e. At CBA-CP-427, on the west wall of the CBA Mechanical Room, PLACE the following electric unit heater control switches to AUTO:
    - CBA-UH-120
    - CBA-UH-121
    - CBA-UH-122
    - CBA-UH-123
    - CBA-UH-124
    - CBA-UH-125
  - f. Adjust computer room AC unit 78 temperature control setpoint to 68°F.

**ATTACHMENT A CONTINUED ON THE NEXT PAGE**

Number <b>OS1223.01</b>	Title <b>LOSS OF CONTROL ROOM VENTILATION OR AIR CONDITIONING</b>	Rev./Date <b>14 06/18/08</b>
----------------------------	--	-------------------------------------

### ATTACHMENT A

#### ACTIONS TO REDUCE CONTROL ROOM TEMPERATURE

g. Energize non essential control room lighting as follows:

- Close circuit 2 at EL22
- Close circuits 1, 2, 3, 5, 6 and 8 at EL23
- Close circuits 1, 2, 3, 4 and 6 at XL8
- Close circuits 3, 5, 6, 13, 14, 15, 24 and 26 at L31
- Close circuits 2, 3, 6, 9, 13, 15 and 16 at L42

h. Install ceiling tiles as required in the following areas:

- 3 ceiling tiles in the walkway area in front of the SSPS and NI cabinets.
- 7 ceiling tiles in the area directly behind the main control board.

- END -

D7040 EAST AIR INTAKE SMOKE CONC HI

SETPOINT: 0.625% OBSCURATION/FT

INITIATING DEVICE: CBA-AM-5351

ASSOCIATED AUTO ACTIONS: NONE

REVISION: 01

1.0 RECOMMENDED ACTIONS:

NOTE

B TRAIN IN FILTER RECIRC MODE IS PREFERED BECAUSE CBA-F-8038 CHARCOAL SAMPLING CANISTERS CAN BE REMOVED WITHOUT AFFECTING OPERABILITY.

1.1 PLACE CBA VENTILATION SYSTEM TO THE FILTER RECIRC MODE UTILIZING ONE OF THE FOLLOWING:

TRAIN B MODE SELECTOR SWITCH  
OR  
TRAIN A MODE SELECTOR SWITCH  
(PROTECTED REF: 2.2)

1.2 DISPATCH A SHIFT FIRE FIGHTER OR NSO TO THE EAST AIR INTAKE TO VERIFY THE INTAKE SMOKE HIGH CONDITION.

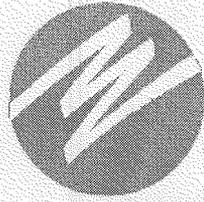
1.3 IF CONTROL ROOM HABITABILITY IS CHALLENGED, DON SCBA.

1.4 GO TO OS1223.01, LOSS OF CONTROL ROOM VENTILATION OR AIR CONDITIONING.

2.0 SOURCES OF ADDITIONAL INFORMATION:

2.1 P&ID 1-CBA-B20303

2.2 UFSAR CHAPTER 6, SECTION 6.4.3.3 (STEP 1.1)



# FPL Energy

## Seabrook Station

JOB PERFORMANCE MEASURE  
Pair E1 RO - L0139J Rev. 01

TRANSFER TO COLD LEG RECIRCULATION (CBS-V2 FAILS) AP

Student Name: \_\_\_\_\_ LMS #: \_\_\_\_\_  
Evaluator Name: \_\_\_\_\_ LMS #: \_\_\_\_\_  
Student Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
(optional)  
Evaluator Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Training Specialist Signature \_\_\_\_\_ Date: \_\_\_\_\_  
Completion Entry Into Database \_\_\_\_\_ Date: \_\_\_\_\_

SAT      UNSAT

This JPM was administered for qualification:    YES    NO

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PREPARED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
INSTRUCTOR

REVIEWED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
SUBJECT MATTER EXPERT (OPTIONAL)

APPROVED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
Signature/Date on file  
TRAINING SUPERVISOR

## JOB PERFORMANCE WORKSHEET

### 1.0 Task Number and Description:

Position: RO

0050500601 Align RH For SI Recirculation, Cold Leg  
0060500301 Transfer SI To Cold Leg Recirculation

### 2.0 Conditions:

- A. A reactor trip with SI occurred from 100% power.
- B. The US has transitioned through E-0 to E-1, and is ready to transition to ES-1.3.
- C. RWST level is decreasing toward the RWST LEVEL LO-LO setpoint.

### 3.0 Standards:

- A. Align ECCS equipment to the Cold Leg Recirculation Mode within the time limits specified in the body of this JPM. The time limits were determined in DCR 00-0013, "Manual Transfer to Cold Leg Recirculation Timing".

### 4.0 Student Materials:

Copy of the Tear-Off Sheet.  
Copy of ES-1.3, Transfer To Cold Leg Recirculation Rev. 25

### 5.0 Limitations On Performance:

Simulate/Perform all steps. Verbalize all actions to the evaluator.  
Even if requested, no Peer Checks will be provided during the JPM.

### 6.0 References:

CR 01-07468-01 [DCR 00-0013, Manual Transfer to Cold Leg Recirculation Timing (Entire JPM)]

#### Procedures:

- ES-1.3, Transfer To Cold Leg Recirculation

Sys	KA	Description	Value RO/SRO
013	A1.06	Predict/monitor changes in RWST levels.	3.6/3.9
013	A1.08	Predict/monitor changes in Ctmt sump level.	3.7/3.8
013	A3.02	Monitor operation of actuated equipment.	4.1/4.2
013	A4.03	Manually operate ESFAS initiation.	4.5/4.7

## JOB PERFORMANCE WORKSHEET

### 7.0 Setting:

Reset the simulator to IC 210, LEN Pair E1RO E1SRO, or any 100% IC which contains the following:

- A. Initialize to any 100% IC.
- B. Using Panel Graphics PBF11, override the control switch for CBS-V2 to the "THR-OPEN" position.
- C. Insert malfunction mfRC024A double-ended RCS Cold Leg Break.
- D. Run the simulator while performing the following per E-0 and E-1:
  1. Trip RCPs.
  2. Reset SI.
  3. Throttle EFW to 150 gpm per SG.
  4. Shutdown EDGs by stopping both, shutting SW-V16, and 18, resetting both diesels.
  5. Place the simulator in freeze when the RWST is at approximately 135,000 gallons to ensure the automatic swapover signal has not actuated.

Place simulator in run (only as long as needed) to ensure all alarms are acknowledged prior to start of JPM. Excessive simulator run time prior to start of JPM may cause RWST LO LO alarm to annunciate.

### 8.0 Safety Considerations:

None

### 9.0 Approximate Completion Time:

20 minutes

### 10.0 Directions To The Student(s):

1. Ensure task is done correctly.
2. You may be asked follow-up questions to confirm knowledge of the task.

Evaluator gives Tear-Off sheet to the student.

Evaluator reads the following to student (Optional for multiple JPMs):

- A. You are the Primary Operator. You are going to transfer ECCS to the cold leg recirculation mode when we receive the RWST lo-lo level alarm.
- B. The following information is provided to you:
  1. A reactor trip with SI occurred from 100% power.
  2. The US has transitioned through E-0 to E-1, and is ready to transition to ES-1.3.
  3. RWST level has decreased to approximately 135,000 gallons.
  4. Any required FRPs have been completed.

## JOB PERFORMANCE WORKSHEET

- C. This JPM contains time critical actions. You will be evaluated based on performance of these tasks within their limits.
- D. We will begin after the Initiating Cue is read.
- E. I will provide the cues and communications for this JPM. Do you have any questions?

### 11.0 Initiating Cue:

US to Primary Operator, **“Primary Operator (or student’s name), let me know when we receive the RWST LEVEL LO-LO alarm, then you will transfer the Emergency Core Cooling System to Cold Leg Recirculation per ES-1.3.”**



## PERFORMANCE CHECKLIST

D=Discuss P=Perform S=Simulate	ELEMENT/STEP	STANDARD	EVALUATION	INITIALS/DATE
	* denotes a critical step	* denotes a critical step	SAT    UNSAT	

**NOTE:** IAW SM 7.20 Figure 5.1 the 3 minute time requirement to close CBS-V2 and CBS-V-5 only applies when there is not a single active failure.

*4.	P. Simultaneously close RWST suction valves.			
	a. TRAIN A – CBS-V2	*a. Attempts to close CBS-V-2. and discovers that CBS-V-2 will not close	_____	_____
	b. TRAIN B – CBS-V5	*b. Closes CBS-V-5.	_____	_____
	c. If a valve cannot be fully closed then place corresponding RHR and CBS pumps in PTL.	*c. Places CBS-P-9A and RH-P-8A in PTL.	_____	_____
	Record time RH- P-8B & CBS-P-9B in PTL	TIME _____		
		* – TIME _____ ≤ 5 Min. 48 sec. after RWST LO LO”	_____	_____

**NOTE:** If the RWST EMPTY alarm occurs prior to opening RH-V35 & 36, the student is expected to stop all pumps taking suction from the RWST (CCPs & SIPs). The student must leave the Train A RHR and CBS pumps running.

If the RWST EMPTY alarm does not actuate, the following two times are not applicable.

Record time of “RWST EMPTY” alarm actuation    TIME \_\_\_\_\_

## PERFORMANCE CHECKLIST

	ELEMENT/STEP	STANDARD	EVALUATION		INITIALS/DATE
D=Discuss P=Perform S=Simulate	* denotes a critical step	* denotes a critical step	SAT	UNSAT	

Record time all CCPs & SIPs stopped      TIME \_\_\_\_\_

\*- TIME \_\_\_\_\_  
 ≤ 11 min. after  
 "RWST EMPTY"

*5.	P	Align ECCS for Cold Leg recirculation:			
		a. Verify RHR Pumps – at least one running.	*a. Verifies RH-P-8B running.	_____	_____
		b. Place running RHR pump switches in NA-START.	b. Places RH-P-8B switch in NA-START.	_____	_____
		c. Close SI pump mini-flow valve SI-V89	*c. Closes SI-V89	_____	_____
		d. Close SI pump mini-flow valve SI-V90	*d. Closes SI-V90	_____	_____
		e. Close SI pump mini-flow valve SI-V93	*e. Closes SI-V93	_____	_____
		f. Energize MCC-E522	*f. Energizes MCC-E522	_____	_____
		g. Energize MCC-E622	*g. Energizes MCC-E 622	_____	_____

## PERFORMANCE CHECKLIST

	D=Discuss P=Perform S=Simulate	ELEMENT/STEP  * denotes a critical step	STANDARD  * denotes a critical step	EVALUATION		INITIALS/DATE
				SAT	UNSAT	
		h. Close RH-V14, RHR discharge to cold legs 1 and 2.	*h. Closes RH-V-14.	_____	_____	_____
		i. Open SI and CCP suction cross-connect CS-V460:	*i. Opens CS-V460	_____	_____	_____
		j. Open SI and CCP suction cross-connect CS-V461	*j. Opens CS-V461	_____	_____	_____
		k. Open SI and CCP suction cross-connect CS-V475	*k. Verifies open CS-V475	_____	_____	_____
		l. Open RHR supply to SI and CCP suction RH-V35	*l. Opens RH-V35	_____	_____	_____
		m. Open RHR supply to SI and CCP suction RH-V36	*m. Opens RH-V36.	_____	_____	_____
		n. Start any pump that was stopped due to RWST empty alarm.	*n. No action required since the empty alarm should not come in.	_____	_____	_____
*6.	P	Isolate RWST feed to CCPs and SI pumps.	Isolates RWST feed to CCPs and SI pumps.			
		a. Close SI pump suction valve CBS-V47	*a. Closes CBS-V47	_____	_____	_____

## PERFORMANCE CHECKLIST

D=Discuss P=Perform S=Simulate	ELEMENT/STEP	STANDARD	EVALUATION		INITIALS/DATE
	* denotes a critical step	* denotes a critical step	SAT	UNSAT	

	b. Close SI pump suction valve CBS-V51	*b. Closes CBS-V51	_____	_____	_____
--	--	--------------------	-------	-------	-------

	c. Close CCP suction valve CS-LVC-112D.	*c. Closes CS-LVC-112D.	_____	_____	_____
--	---	-------------------------	-------	-------	-------

	d. Close CCP suction valve CS-LVC-112E.	*d. Closes CS-LVC-112E.	_____	_____	_____
--	---	-------------------------	-------	-------	-------

CUE: "The JPM is complete."

7.	Stop time _____	Time to complete the task ≤ 20 minutes.
	Evaluator calculates the time to complete the task.	

8.	Obtain from student: Tear Off Sheets and any other training materials used in the performance of the JPM	_____
----	---	-------



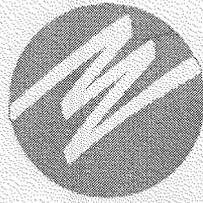
## TEAR-OFF SHEET FOR JPM pair E1 -RO

Directions to the Student:

- A. You are the Primary Operator. You are going to transfer ECCS to the cold leg recirculation mode when we receive the RWST lo-lo level alarm.
- B. The following information is provided to you:
  - a. A reactor trip with SI occurred from 100% power.
  - b. The US has transitioned through E-0 to E-1, and is ready to transition to ES-1.3.
  - c. RWST level has decreased to approximately 135,000 gallons.
  - d. Any required FRPs have been completed.
- C. This JPM contains time critical actions. You will be evaluated based on performance of these tasks within their limits.
- D. We will begin after the Initiating Cue is read.
- E. I will provide the cues and communications for this JPM. Do you have any questions?

Initiating Cue:

US to Primary Operator, **“Primary Operator (or student’s name), let me know when we receive the RWST LEVEL LO-LO alarm, then you will transfer the Emergency Core Cooling System to Cold Leg Recirculation per ES-1.3.”**



# FPL Energy

## Seabrook Station

JOB PERFORMANCE MEASURE  
Pair E1 SRO - L0085J Rev. 03 AP

### ESTABLISH SG FEED FLOW FROM SUFP

Student Name: \_\_\_\_\_ LMS #: \_\_\_\_\_

Evaluator Name: \_\_\_\_\_ LMS #: \_\_\_\_\_

Student Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
(optional)

Evaluator Signature: \_\_\_\_\_ Date: \_\_\_\_\_

SAT      UNSAT

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PREPARED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
INSTRUCTOR

REVIEWED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
SUBJECT MATTER EXPERT (OPTIONAL)

APPROVED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
Signature/Date on file  
TRAINING SUPERVISOR

## JOB PERFORMANCE WORKSHEET

### 1.0 Task Number and Description:

Position: RO

0590102101 Start The Startup Feed Pump  
0610100401 Feed Steam Generators With EFW System

### 2.0 Conditions:

- A. The plant tripped from 100% power due to SG low-low level.
- B. Both feed pumps tripped on low suction pressure, initiated by a loss of 4.16 kV bus 3. Bus 3 has a major fault and is unavailable.
- C. The B condensate pump and motor-driven EFW pump are tagged out for major maintenance and are unavailable.
- D. The US transitioned from E-0 to FR-H.1 due to lack of EFW flow. The steam-driven EFW pump tripped on over speed, and the roving NSO has been unable to reset MS-V129. The SUFP tripped on over current and is being checked by the duty electrician and the Secondary NSO.
- E. RCPs are tripped, and bleed and feed has been established due to 3 SG WR levels <30%.
- F. The US is currently at step 21 in FR-H.1.

### 3.0 Standards:

Establish SUFP flow of greater than 500 gpm to the steam generators.

### 4.0 Student Materials:

Copy of the Tear-Off Sheet.  
Copy of FR-H.1, Response To Loss Of Secondary Heat Sink, Rev. 32.  
Copy of OS1035.02, Startup Feed Pump Operation, Rev. 08, Chg. 7.

### 5.0 Limitations On Performance:

Simulate/Perform all steps. Verbalize all actions to the evaluator.  
Even if requested, no Peer Checks will be provided during the JPM.

### 6.0 References:

Procedures:

- FR-H.1, Response To Loss Of Secondary Heat Sink
- OS0135.02, Startup Feed Pump Operation

## JOB PERFORMANCE WORKSHEET

Sys	KA	Description	Value RO/SRO
061	K4.02	AFW automatic start.	4.5/4.6
061	K4.14	AFW automatic isolation.	3.5/3.7
061	A3.04	Monitor AFW automatic isolation.	4.1/4.2
2.1	2.1.23	Ability to perform specific system and integrated plant procedures during all modes of operation.	4.3/4.4

### 7.0 Setting:

Reset the simulator to IC 210, LEN Pair E1SRO, or any 100% IC which contains the following:

1. Initialize to the 100% IC. Place the simulator in RUN.
2. Place CO-P30C in service and place control switch for CO-P30B in PTL.
3. Insert component remote function bkCOP30B RF: rackout.
4. Place simulator in FREEZE.
5. Place FW-P37B control switch in PTL
6. Insert component remote function bkFWP37B RF: rackout.
7. Insert component remote function mvFWV347 RF: open breaker.
8. Insert malfunction mfFW041 SUFP FW-P113 Bus E5 faulty 86 device
9. Insert component remote function rmvMSV129 Value=0.
10. Insert malfunctions mfRPS001 and mfRPS002 AUTO reactor trip failure Train A & B.
11. Using panel graphics section PGF07A insert override Bus 3 RAT breaker control switch in PTL.
12. Insert malfunction bkED3UAT Fail open
13. Place the simulator in RUN.
14. Manually trip the reactor when SG wide range levels reach approximately 50%
15. When 3 wide range SG levels reach 30% initiate bleed and feed IAW FR-H.1
16. Stop all RCPs
17. Reset S and T signals
18. Open both PZR. Adverse Containment should result.
19. Place simulator in FREEZE when RCS temperature has decreased from bleed and feed and dry SG conditions exist.

Place the simulator in RUN. Acknowledge all alarms. Place danger tags on CO-P30B, FW-P37B and FW-V347. Ensure RCS temperature is decreasing prior to start of JPM

### 8.0 Safety Considerations:

None

### 9.0 Approximate Completion Time:

20 minutes

## JOB PERFORMANCE WORKSHEET

### 10.0 Directions To The Student(s):

1. Ensure task is done correctly.
2. You may be asked follow-up questions to confirm knowledge of the task.

Evaluator gives Tear-Off sheet to the student.

Evaluator reads the following to student (Optional for multiple JPMs):

- A. You are the Secondary Operator, and you are going to establish EFW flow to the steam generators from the SUFP. Another operator is assigned to the Primary Side of watch and will respond to any conditions on that side of the board.
- B. The following information is provided to you:
1. The plant tripped from 100% power due to SG low-low level.
  2. Both MFPs tripped on low suction pressure, initiated by a loss of 4.16 kV Bus 3. Bus 3 has a major fault and is unavailable.
  3. The B condensate pump and the motor-driven EFW pump are tagged out for major maintenance and are unavailable.
  4. The US transitioned from E-0 to FR-H.1 due to lack of EFW flow. The steam-driven EFW pump tripped on over speed, and the Roving NSO has been unable to reset MS-V129.
  5. The SUFP tripped on over-current and is being checked by the duty electrician and the Secondary NSO.
  6. RCPs are tripped, and bleed and feed has been established due to 3 WR SG levels <30%.
  7. The US is currently at step 21 in FR-H.1.
- C. We will begin after the Initiating Cue is read.
- D. I will provide the cues and communications for this JPM. Do you have any questions?

### 11.0 Initiating Cue:

US to Secondary Operator, **“Secondary Operator (or student’s name), step 21 of FR-H.1 refers us back to step 4 in an attempt to establish secondary heat sink in at least one SG using the SUFP. The duty electrician has determined by visual inspection that the Bus 5 SUFP breaker has a faulty “86” relay.**

**An NSO is standing by to switchover the SUFP from bus 5 to bus 4 using OS1035.02, Startup Feed pump Operation. All prerequisites are met in OS1035.02.**

**When power is available to the SUFP continue with step 4 of FR-H.1 to restore feed flow.”**

**PERFORMANCE CHECKLIST**

D=Discuss	ELEMENT/STEP	STANDARD	EVALUATION	INITIALS/DATE
P=Perform			SAT	UNSAT
S=Simulate	* denotes a critical step	* denotes a critical step		

**NOTE:** Ensure that student is ready to begin the JPM before placing simulator in run.

1. P Start time \_\_\_\_\_ Initiating cue read.

**CUE:** If the student requests a Peer Check at any time during the JPM, respond: **“No one is available to peer check your actions. Please continue with the task”**.

**CUE:** Evaluator provide the following cue, **“IAW step 21 of FR-H.1, refer to step 4 of FR-H.1 to attempt to establish a secondary heat sink. A switchover of SUFP breaker to available bus per OS1035.02 Startup Feed Pump Operation has been initiated. Complete the switchover and re-establish feed flow in accordance with FR-H.1”**

**CUE:** If student has questions pertaining to prerequisites and initial conditions, US to BOP CRO, **“Secondary operator, all prerequisites and initial conditions are met for OS1035.02.”**

2. P Per FR-H.1 step 4a RNO the US directs the secondary operator to initiate switchover of the SUFP from bus 5 to bus 4 per OS1035.02 Sect. 4.4, STARTUP FEED PUMP OPERATION. Obtains OS1035.02 and refers to applicable step. \_\_\_\_\_

3. P Remove SUFP from service per OS1035.02 section 4.2 as follows: Check/PLACE both Bus 4 and 5 SUFP control switches in PULL TO LOCK. Removes SUFP from service per OS1035.02 section 4.2 as follows: Places both SUFP control switches in PTL. \_\_\_\_\_

**CUE:** Provide the following cue when asked about SUFP suction alignment, **“The SUFP is not aligned to condensate cleaning”**

**PERFORMANCE CHECKLIST**

D=Discuss P=Perform S=Simulate	ELEMENT/STEP * denotes a critical step	STANDARD * denotes a critical step	EVALUATION SAT UNSAT	INITIALS/DATE
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**CUE:** (If required) provide the following cue, **“The Secondary NSO is standing by at Bus E5 to assist you.”**

4.	P	Transfer SUFP to bus 4 per OS1035.02, Section 4.3 or 4.4.	Transfers SUFP to bus 4 per OS1035.02, Section 4.4 as follows:		
----	---	---	--	--	--

**NOTE:** Directions to NSO in the following steps may be given one step at a time, as a group, or by direction to perform OS1035.02 steps 4.4.2 through 4.4.8. Steps 4a-4d are not required to be performed due to the way the direction may be given to the NSO.

a.	Verify SUFP Bus 5 breaker open	a.	Verifies SUFP Bus 5 breaker open	_____	_____	_____
b.	Direct NSO to rack out SUFP Bus 5 breaker node A93 and remove Kirk Key	b.	Directs NSO to (perform step 4.4.3 and step 4.4.4) rack out SUFP Bus 5 breaker node A93 and remove Kirk key	_____	_____	_____

**NOTE: Rack out SUFP Bus 5 breaker: - LOCAL PANELS – Feedwater/MVD-SUFP- Bus 5 RACK OUT**

c.	Direct NSO to position power supply selector switch to Bus 4 position using GE-75 local/remote key then remove the key	c.	Directs NSO to (perform step 4.4.5 and step 4.4.6) position power supply selector switch to Bus 4 position using GE-75 local/remote key then remove the key	_____	_____	_____
----	--	----	---	-------	-------	-------

**NOTE: Control Power for SUFP Bus 4 breaker: LOCAL PANELS – Feedwater/MVD – SUFP-Control Power Bus Selector SW to Bus 4.**

d.	Direct NSO to insert Kirk key and rack in SUFP Bus 4 breaker	d.	Direct NSO to (perform step 4.4.7 and step 4.4.8) insert Kirk key and rack in SUFP Bus 4 breaker	_____	_____	_____
----	--	----	--	-------	-------	-------

**NOTE: Rack in SUFP Bus 4 breaker: -LOCAL PANELS – Feedwater/MVD – SUFP-Bus 4 RACK IN**

**CUE:** NSO to Secondary operator, **“ I have completed the swap of the power supply for the SUFP from Bus 5 to Bus 4.”**

**PERFORMANCE CHECKLIST**

D=Discuss P=Perform S=Simulate	ELEMENT/STEP * denotes a critical step	STANDARD * denotes a critical step	EVALUATION SAT    UNSAT	INITIALS/DATE
--------------------------------------	---	---------------------------------------	----------------------------	---------------

**CUE:** When the student informs the US that the SUFP has been shifted to bus 4: **“We will complete Form “B” IV Checklist later. We will continue to refer to FR-H.1 step 4 to establish SUFP flow.”**

5.	P	Check CST level - GREATER THAN 250,000 GALLONS	Verifies and reports CST level - GREATER THAN 250,000 GALLONS	_____	_____	_____
----	---	--	---	-------	-------	-------

**NOTE:** The student may shut the EFW flow control valves, prior to opening FW-V156 or FW-V163, then throttle them open to establish flow after FW-V156 and 163 are open. Direction given in step 21 of FR-H.1 was to refer to step 4 to establish SUFP flow. Dry SG conditions exist requiring feeding only one SG so EFW flow control valves must be repositioned prior to initiating flow. The same direction is given on the OAS page.

*6.	P	Establish feed flow to EFW header:				
		a. RESET RMO , as necessary	a. Resets RMO (not necessary)	_____	_____	_____
		*b. Start the SUFP	*b. Starts the SUFP	_____	_____	_____
		*c. Open FW-V156	*c. Opens FW-V156.	_____	_____	_____

**NOTE** Containment pressure is adverse.

		*d. IF any SG wide range level is less than 14% (30% adverse containment) THEN observe dry SG cautions and notes on OAS page.	*d Determines that ALL levels are below dry SG level criteria. SHUTS EFW flow control valves to control dry SG feed flow.			
		*d. Throttle open FW-V163 to minimize water hammer and establish flow.	*d. Throttles open FW-V163 and one dry SG EFW flow control valve to establish <100 GPM flow to a single intact S/G.	_____	_____	_____

**CUE:** **“The JPM is complete.”**

13.	Stop time _____	Time to complete the task ≤ 20 minutes.
	Evaluator calculates the time to _____	

**PERFORMANCE CHECKLIST**

D=Discuss  
P=Perform  
S=Simulate

ELEMENT/STEP  
\* denotes a critical step

STANDARD  
\* denotes a critical step

EVALUATION  
SAT UNSAT

INITIALS/DATE

14.      complete the task.  
Obtain from student:  
Tear Off Sheets and any other  
training materials used in the  
performance of the JPM

\_\_\_\_\_



## TEAR-OFF SHEET FOR JPM Pair E1 SRO

### Directions to the Student:

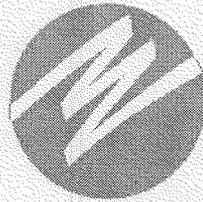
- A. You are the Secondary Operator, and you are going to establish EFW flow to the steam generators from the SUFP.
- B. The following information is provided to you:
1. The plant tripped from 100% power due to SG low-low level.
  2. Both MFPs tripped on low suction pressure, initiated by a loss of 4.16 kV Bus 3. Bus 3 has a major fault and is unavailable.
  3. The B condensate pump and the motor-driven EFW pump are tagged out for major maintenance and are unavailable.
  4. The US transitioned from E-0 to FR-H.1 due to lack of EFW flow. The steam-driven EFW pump tripped on over speed, and the Roving NSO has been unable to reset MS-V129.
  5. The SUFP tripped on over-current and is being checked by the duty electrician and the Secondary NSO.
  6. RCPs are tripped, and bleed and feed has been established due to 3 WR SG levels <30%.
  7. The US is currently at step 21 in FR-H.1.
- C. We will begin after the Initiating Cue is read.
- D. I will act as the US and provide the cues and communications for this JPM. Do you have any questions?

### Initiating Cue:

US to Secondary Operator, **“Secondary Operator (or student’s name), step 21 of FR-H.1 refers us back to step 4 in an attempt to establish secondary heat sink in at least one SG using the SUFP. The duty electrician has determined by visual inspection that the Bus 5 SUFP breaker has a faulty “86” relay.**

**An NSO is standing by to switchover the SUFP from bus 5 to bus 4 using OS1035.02, Startup Feed pump Operation. All prerequisites are met in OS1035.02**

**When power is available to the SUFP continue with step 4 of FR-H.1 to restore feed flow.”**



# FPL Energy

## Seabrook Station

JOB PERFORMANCE MEASURE  
2009 IN PLANT # 1 - L0016J Rev. 06

### RESET STEAM DRIVEN EFW PUMP TRIP VALVE

Student Name: \_\_\_\_\_ LMS #: \_\_\_\_\_  
Evaluator Name: \_\_\_\_\_ LMS #: \_\_\_\_\_  
Student Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
(optional)  
Evaluator Signature: \_\_\_\_\_ Date: \_\_\_\_\_

SAT      UNSAT

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PREPARED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
INSTRUCTOR

REVIEWED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
SUBJECT MATTER EXPERT (OPTIONAL)

APPROVED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
Signature/Date on file  
TRAINING SUPERVISOR

## JOB PERFORMANCE WORKSHEET

### 1.0 Task Number and Description:

Position: NSO

0610401204 Reset The Turbine Driven EFW Pump Trip Valve.

### 2.0 Conditions:

- A. The plant is in Mode 3 following a trip from 100% power.
- B. All station AC electrical power has been lost.
- C. The Turbine Driven EFW Pump started and then tripped.

### 3.0 Standards:

Reset the turbine driven EFW pump trip valve and start FW-P-37A per OS1036.03, Resetting The Steam Driven EFW Pump Trip Valve.

### 4.0 Student Materials:

Copy of the Tear-Off Sheet.

Copy of OS1036.03, Resetting the Steam Driven EFW Pump Trip Valve, Rev. 2, Chg. 8.

Copy of OS1090.01, Manual Operation of Remote Operated Valves, Rev. 6, Chg. 6

### 5.0 Limitations On Performance:

Simulate/Perform all steps. Verbalize all actions to the evaluator.  
Even if requested, no Peer Checks will be provided during the JPM.

### 6.0 References:

Procedures:

- OS1036.03, Resetting The Steam Driven EFW Pump Trip Valve
- OS1090.01, Manual Operation Of Remote Operated Valves

Technical Specifications:

- 3.7.1.2, AFW System
- 3.7.1.3, CST

Sys	KA	Description	Value RO/SRO
061	A2.04	Ability to predict impact and use procedure to correct, control, mitigate AFW pump failure.	3.4/3.8
2.4	2.4.35	Knowledge of local auxiliary operator tasks during emergency operations.	3.8/4.0

## JOB PERFORMANCE WORKSHEET

### 7.0 Setting:

Plant, EFW Pumphouse.

### 8.0 Safety Considerations:

- Possible automatic pump start.

### 9.0 Approximate Completion Time:

10 minutes

### 10.0 Directions To The Student(s):

1. Ensure task is done correctly.
2. You may be asked follow-up questions to confirm knowledge of the task.

Evaluator gives Tear-Off sheet to the student.

Evaluator reads the following to student (Optional for multiple JPMs):

- A. You are the Roving NSO. You are going to reset the Turbine Driven EFW pump trip valve and restart the pump.
- B. The following information is provided to you:
  1. The plant is in Mode 3 following a trip from 100% power.
  2. All station AC electrical power has been lost.
  3. The Turbine Driven EFW Pump started and then tripped.
- C. We will begin after the Initiating Cue is read.
- D. I will act as the US and provide the cues and communications for this JPM. Do you have any questions?

### 11.0 Initiating Cue:

US to Roving NSO, "Roving NSO (or student's name), simulate resetting MS-V-129 using OS1036.03, Resetting The Steam Driven EFW Pump Trip Valve, then restart the steam driven EFW pump."

**PERFORMANCE CHECKLIST**

D=Discuss	ELEMENT/STEP	STANDARD	EVALUATION	INITIALS/DATE
P=Perform				
S=Simulate	* denotes a critical step	* denotes a critical step	SAT    UNSAT	

---

1.     P     Start time \_\_\_\_\_     Initiating cue read.

**CUE:** If the student requests a Peer Check at any time during the JPM, respond: **“No one is available to peer check your actions. Please continue with the task”.**

**NOTE:** Student should review note prior to step 4.1.1.

\*2.     S     Reset MS-V-129, EFW pump turbine trip valve:

\*a. Simulates pulling and holding the trip rod toward MS-V-129.     \_\_\_\_\_

**CUE:** When student simulates pulling and holding trip rod toward MS-V-129, cue, evaluator to student, **“The trip is being held towards MS-V-129.”**

\*b. Simulates checking / placing the flat of the washer against the trip rod.     \_\_\_\_\_

**CUE:** When student simulates placing the flat of the washer against the trip rod, cue, evaluator to student, **“The flat of the washer is against the trip rod.”**

c. Simulates verifying the trip plunger is in place.     \_\_\_\_\_

**CUE:** When student simulates verifying that trip plunger has dropped into place, cue evaluator to student, **“The trip plunger is in place.”**

d. Simulates releasing the tripping rod.     \_\_\_\_\_

**CUE:** When student simulates releasing the tripping rod, cue evaluator to student, **“The tripping rod is released.”**

## PERFORMANCE CHECKLIST

D=Discuss P=Perform S=Simulate	ELEMENT/STEP	STANDARD	EVALUATION	INITIALS/DATE
	* denotes a critical step	* denotes a critical step	SAT    UNSAT	

e. Refers to Figure 2 and verifies the flat side of washer is engaged with the flat side of the head lever and is not tilted or bound

**CUE:** When student refers to figure 2 cue evaluator to student, **“The flat side of washer is engaged with the flat side of the head lever and is not tilted or bound.”**

\*f. Resets MS-V-129 -  
simulates turning the  
handwheel CW until  
the latch snaps into  
place.

**CUE:** When student simulates turning MS-V-129 handwheel CW, cue evaluator to student, **“MS-V-129 is reset.”**

**CUE:** If the control room is contacted, acknowledge, then US to NSO, **“Restart the steam driven EFW pump locally.”**

\*3.    S        Verify MS-V-129 is reset.        Verifies MS-V-129 is reset.

**CUE:** Evaluator to student, **“MS-V-129 is reset.”**

\*4.    S        Check open/open FW-V-346,  
EFW pump A mini-flow.        Checks open/opens  
FW-V-346, EFW pump A  
mini-flow.

**CUE:** If the student checks the position of FW-V-346 locally, evaluator to student, **“The valve is shut.”**

**CUE:** If the control room is contacted regarding status of FW-V-346, US to NSO, **“No power is available to remotely open FW-V-346. Open FW-V-346 locally.”**

## PERFORMANCE CHECKLIST

D=Discuss P=Perform S=Simulate	ELEMENT/STEP * denotes a critical step	STANDARD * denotes a critical step	EVALUATION SAT    UNSAT	INITIALS/DATE
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**NOTE:** Provide student required portion of OS1090.01 if requested.

**CUE:** If required, cue evaluator to student, **"FW-V-346 is deenergized at MCC-515 node C3S."**

**CUE:** If the control room is contacted regarding step 3.2.4 of OS1090.01 in reference to the de-clutch lever limitations on FW-V-346, US to NSO, **"This is an emergency. Locally open FW-V-346."**

\*5.    S        Open FW-V-346 locally.

\*a. Simulates pressing the \_\_\_\_\_  
declutch lever down to  
engage manual  
handwheel

**CUE:** When student simulates pressing the declutch lever, cue, evaluator to student, **"The declutch level has been pressed. The manual handwheel is engaged."**

\*b. Simulates locally \_\_\_\_\_  
opening FW-V-346

**CUE:** When student simulates turning the handwheel CCW, cue, evaluator to student, **"The valve is open."**

\*6.    S        Slowly open MS-V-129 to  
increase speed to 3600 rpm. as  
read on FW-ST-TM-1        Simulates slowly opening  
MS-V-129 to increase  
speed to 3600 rpm.        \_\_\_\_\_

**CUE:** When student checks local rpm indicator FW-ST-TM-1 after simulating turning MS-V-129 handwheel CCW, evaluator to student, **"Speed is increasing to 3600 rpm."**

\*7.    S        Verify that speed remains  
below 3750 rpm while slowly  
opening MS-V-129 to full open        Slowly opens MS-V-129 to  
full open while verifying  
speed remains below 3750  
rpm.        \_\_\_\_\_

**CUE:** When the student verifies EFW pump speed remains below 3750 rpm as MS-V-129 is simulated being fully opened, evaluator to student, **"Speed is steady at 3675 rpm."**

\*8.    S        Close MS-V-129 ¼ turn from  
backseat.        Close MS-V-129 ¼ turn  
from backseat.        \_\_\_\_\_

## PERFORMANCE CHECKLIST

D=Discuss P=Perform S=Simulate	ELEMENT/STEP  * denotes a critical step	STANDARD  * denotes a critical step	EVALUATION  SAT   UNSAT	INITIALS/DATE
--------------------------------------	---	---	-------------------------------	---------------

---

**CUE:** When student simulates turning MS-V-129 handwheel ¼ turn, cue, evaluator to student, **“The valve is closed ¼ turn.”**

**CUE:** **“The JPM is complete.”**

9. Stop time \_\_\_\_\_ Time to complete the task  
≤ 10 minutes.

Evaluator calculates time to complete task.

10. Obtain from student:  
Tear Off Sheets and any other training materials used in the performance of the JPM

---



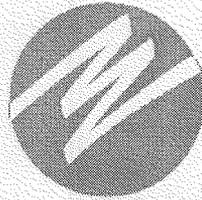
**TEAR-OFF SHEET FOR JPM**  
**2009 INPLANT #1**

**Directions to the Student:**

- A. You are the Roving NSO. You are going to reset the Turbine Driven EFW pump trip valve and restart the pump.
- B. The following information is provided to you:
  - 1. The plant is in Mode 3 following a trip from 100% power.
  - 2. All station AC electrical power has been lost.
  - 3. The Turbine Driven EFW Pump started and then tripped.
- C. We will begin after the Initiating Cue is read.
- D. I will act as the US and provide the cues and communications for this JPM. Do you have any questions?

**Initiating Cue:**

US to Roving NSO, **“Roving NSO (or student’s name), simulate resetting MS-V-129 using OS1036.03, Resetting The Steam Driven EFW Pump Trip Valve, then restart the steam driven EFW pump.”**



# FPL Energy

## Seabrook Station

JOB PERFORMANCE MEASURE  
2009 IN PLANT #2 – NEW

ASDV LOCAL OPERATION

Student Name: \_\_\_\_\_ LMS #: \_\_\_\_\_  
Evaluator Name: \_\_\_\_\_ LMS #: \_\_\_\_\_  
Student Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
(optional)  
Evaluator Signature: \_\_\_\_\_ Date: \_\_\_\_\_

SAT      UNSAT

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PREPARED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
INSTRUCTOR

REVIEWED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
SUBJECT MATTER EXPERT (OPTIONAL)

APPROVED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
Signature/Date on file  
TRAINING SUPERVISOR

## JOB PERFORMANCE WORKSHEET

### **1.0 Task Number and Description:**

Position: NSO

0410150104 Locally Operate The ASDVs To Cooldown The RCS

### **2.0 Conditions:**

- A. The reactor tripped due to a loss of offsite power.
- B. All SGs pressures are being controlled using POSITION MAINTAINED on the ASDVs. SG pressures are now decreasing to less than 250 psig. The "D" ASDV did not respond when the valve demand was changed from POSITION MAINTAINED to CLOSE. Local control of the "D" ASDV is required to CLOSE the ASDV and restore control of the SG pressure boundary.

### **3.0 Standards:**

Simulate local operation of partially failed OPEN ASDV per ECA-0.0, Attachment J.

### **4.0 Student Materials:**

Copy of the Tear-Off Sheet.  
Copy of ECA-0.0, Attachment J

### **5.0 Limitations On Performance:**

Simulate/Perform all steps. Verbalize all actions to the evaluator.  
Even if requested, no Peer Checks will be provided during the JPM.

### **6.0 References:**

Procedures:

- ECA-0.0, Loss Of All AC Power, Attachment J.

## JOB PERFORMANCE WORKSHEET

Sys	KA	Description	Value RO/SRO
2.4	2.4.35	Knowledge of local auxiliary operator tasks during emergency operations.	3.8/4.0
035	K6.02	Knowledge of the effect of a loss or malfunction of an ASDV on S/Gs.	3.1/3.5

### **7.0 Setting:**

Plant, east or west pipe chase.

### **8.0 Safety Considerations:**

Pipe chase posted entry instructions.  
Do not climb on handrails or piping during simulation.

### **9.0 Approximate Completion Time:**

15 minutes

### **10.0 Directions To The Student(s):**

1. Ensure task is done correctly.
2. You may be asked follow-up questions to confirm knowledge of the task.

Evaluator gives Tear-Off sheet to the student.

Evaluator reads the following to student (Optional for multiple JPMs):

- A. You are the Roving NSO. You are going to simulate local operation of an ASDV.
- B. The following information is provided to you:
1. The reactor tripped due to a loss of offsite power.
  2. The US has been using ECA-0.0 at step 17, Manually Control SG ASDV to maintain SG pressures at 250 psig using POSITION MAINTAINED.
  3. SG pressures are now decreasing to less than 250 psig. When the BOP operator took "D" ASDV from POSITION MAINTAINED to CLOSE the valve did not respond.
  4. You will be required to take local control of the "D" ASDV and CLOSE the ASDV.
- C. We will begin after the Initiating Cue is read.
- D. I will act as the US and provide the cues and communications for this JPM. Do you have any questions?

## JOB PERFORMANCE WORKSHEET

### **11.0 Initiating Cue:**

US to Roving NSO, "Rover (or student's name), get a copy of ECA-0.0 Attachment J, and take local manual control of MS-PV-3004, the 'D' ASDV and close the valve."

**PERFORMANCE CHECKLIST**

D=Discuss	ELEMENT/STEP	STANDARD	EVALUATION	INITIALS/DATE
P=Perform				
S=Simulate	* denotes a critical step	* denotes a critical step	SAT    UNSAT	

---

1.     P     Start time \_\_\_\_\_     Initiating cue read.

**CUE:** If the student requests a Peer Check at any time during the JPM, “respond, **“No one is available to peer check your actions. Please continue with the task”**”.

**NOTE:** Do not permit climbing on railings or plant equipment for safety concerns.

2.     S     Use ladder staged in pipe chase stairwell for ASDV operation.     Uses ladder staged in pipe chase stairwell for ASDV operation.     \_\_\_\_\_

**NOTE:** When the student indicates he will obtain the staged ladder locked to the hand rail next to the D ASDV, the evaluator may allow student to SIMULATE using the ladder.

**NOTE** The ASDV is an AIR to OPEN, SPRING PRESSURE to CLOSE valve. For this JPM the ASDV is partially OPEN with the Instrument Air not bleeding off the valve actuator correctly, preventing the spring pressure from fully closing the valve. When the student looks at the valve the Actuator Shaft is partially exposed above the manual override shaft, but the clevis notch in the actuator shaft is not exposed. Evaluator cue **“The ASDV is ~20 % OPEN. The Actuator Shaft is partially exposed, but the clevis notch is not visible.**”

\*3.    S     Unscrew clevis from manual override shaft.     Unscrews clevis from manual override shaft.     \_\_\_\_\_

**CUE:** When student simulates turning clevis CCW at the top of the actuator, cue, evaluator to student, **“The clevis has been unscrewed.”**

\*4.    S     Turn handwheel in the engaged direction to expose actuator shaft above manual override shaft.     Exposes actuator shaft by turning handwheel in the engaged direction.     \_\_\_\_\_

**CUE:** When student simulates turning handwheel in the engaged direction, cue, evaluator to student, **“The actuator shaft is exposed above the manual shaft override.”**

\*5.    S     Slide clevis onto actuator shaft notch.     Engages actuator by inserting clevis onto notch.     \_\_\_\_\_

**CUE:** When student simulates engaging actuator by sliding clevis onto actuator shaft notch, cue, evaluator to student, **“The clevis is on the actuator shaft notch.”**

**PERFORMANCE CHECKLIST**

D=Discuss P=Perform S=Simulate	ELEMENT/STEP  * denotes a critical step	STANDARD  * denotes a critical step	EVALUATION		INITIALS/DATE
			SAT	UNSAT	

*6.	S	Request that the control room places the selector switch for the ASDV in the MODULATE position.	Simulates contacting the Control Room to request ASDV control switch in MODULATE position	_____	_____	_____
-----	---	---	---	-------	-------	-------

**CUE:** When the student calls control, respond: **“The selector switch for “D” ASDV is in the MODULATE position”.**

*7.	S	Place bypass valve on the Bailey positioner in MAN.	Places bypass valve on the Bailey positioner in MAN.	_____	_____	_____
-----	---	---	--	-------	-------	-------

**CUE** When student simulates pressing and turning the bypass valve to MAN, cue, evaluator to student, **“The Bailey Positioner is in manual.”**

**NOTE:** When the bypass valve is taken to MAN, Air pressure should begin to bleed off the valve but, in this JPM, the air does not bleed off. Evaluator to student, **“No change in valve status occurs.”**

8.	S	Inform control room that the “D” ASDV is in local manual control.	Informs control room that the, “D” ASDV is in local manual control.	_____	_____	_____
----	---	---	---	-------	-------	-------

**CUE:** When student calls control, respond, **“I copy, you have manual control of the “D” ASDV. Close the “D” ASDV.”**

IF the student reports that air pressure does not bleed off: **“I copy the air pressure did not bleed off as expected. Continue attempts to close the “D” ASDV.”**

*9.	S	Throttle the ASDV to desired position using the handwheel.	Turns handwheel in the CLOSE direction until ASDV is full closed.	_____	_____	_____
-----	---	--	---	-------	-------	-------

**CUE:** When student simulates turning handwheel in the CLOSED direction, cue, evaluator to student, **“The ASDV remains at ~20% OPEN.”**

*10.	S	Inform control room that the “D” ASDV remains 20% open.	Informs control room that the “D” ASDV is ~20% OPEN.	_____	_____	_____
------	---	---	--	-------	-------	-------

**CUE:** When student calls control, respond, **“I copy, the “D” ASDV is 20% open.”,**

**PERFORMANCE CHECKLIST**

D=Discuss	ELEMENT/STEP	STANDARD	EVALUATION	INITIALS/DATE
P=Perform				
S=Simulate	* denotes a critical step	* denotes a critical step	SAT    UNSAT	

---

**CUE:** Direct the student to Isolate the "D" ASDV by closing it's upstream manual isolation valve. Evaluator to Student: **"Isolate the "D" ASDV by closing MS-V-47."**,

*11.*	S	Close MS-V-47	Locates MS-V-47, and simulates closing the valve.	_____	_____	_____
-------	---	---------------	---	-------	-------	-------

**CUE:** "The JPM is complete."

12.	Stop time _____	Time to complete the task ≤ 15 minutes.			
	Evaluator calculates time to complete task.				

13.	Obtain from student: Tear Off Sheets and any other training materials used in the performance of the JPM				_____
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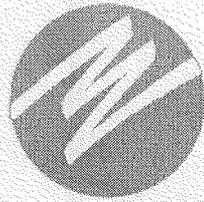
**TEAR-OFF SHEET FOR JPM**  
**2009 INPLANT #2**

**Directions to the Student:**

- A. You are the Roving NSO. You are going to simulate local operation of an ASDV.
- B. The following information is provided to you:
  - 1. The reactor tripped due to a loss of offsite power.
  - 2. The US has been using ECA-0.0 at step 17, Manually Control SG ASDV to maintain SG pressures at 250 psig using POSITION MAINTAINED.
  - 3. SG pressures are now decreasing to less than 250 psig. When the BOP operator took "D" ASDV from POSITION MAINTAINED to CLOSE the valve did not respond.
  - 4. You will be required to take local control of the "D" ASDV and CLOSE the ASDV. .
- C. We will begin after the Initiating Cue is read.
- D. I will provide the cues and communications for this JPM. Do you have any questions?

**Initiating Cue:**

US to Roving NSO, **"Rover (or student's name), get a copy of ECA-0.0 Attachment J, and take local manual control of MS-PV-3004, the 'D' ASDV and close the valve."**



# FPL Energy

## Seabrook Station

JOB PERFORMANCE MEASURE  
2009 INPLANT -3- L0162J RSS

DEENERGIZE BUS 5 DUE TO FIRE DURING RSS

Student Name:	_____	LMS #:	_____
Evaluator Name:	_____	LMS #:	_____
Student Signature:	_____	Date:	_____
	(optional)		
Evaluator Signature:	_____	Date:	_____

SAT      UNSAT

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PREPARED BY:	_____	DATE:	_____
	INSTRUCTOR		
REVIEWED BY:	_____	DATE:	_____
	SUBJECT MATTER EXPERT (OPTIONAL)		
APPROVED BY:	_____	DATE:	_____
	TRAINING SUPERVISOR		

## JOB PERFORMANCE WORKSHEET

### 1.0 Task Number and Description:

SBK 1180400904 DEENERGIZE BUS 5 DUE TO FIRE DURING RSS

### 2.0 Conditions:

- A. Plant is in Mode 1.
- B. A valid fire condition exists in the Cable Spreading Room.
- C. OS1200.00 has been entered
- D. RSS-CRO has been directed to go to B Essential Switchgear Room IAW OS1200.00 step 2 RNO.
- E. RSS-NSO has been directed to DG 1B local control panel IAW OS1200.00 step 2 RNO.
- F. Train A Essential Switchgear is not habitable due to smoke

### 3.0 Standards:

During Remote Safe Shutdown Event deenergize Bus E5 in accordance with OS1200.02B Remote Safe Shutdown Control – Train B.

### 4.0 Student Materials:

Copy of the Tear-Off sheet.  
OS1200.02B Rev 12 Chg 01  
Student should have a flashlight.

### 5.0 Limitations on performance:

Simulate all steps. Verbalize all actions to the evaluator.  
Even if requested, no Peer Checks will be provided during the JPM.

Times recorded are at the completion of the referenced step.

### 6.0 References:

Procedures:

- OS1200.00 Response to Fire or Fire Alarm Actuation
- OS1200.02B Remote Safe Shutdown Control – Train B.
- SM 7.20, Time Critical Action policy

Sys	KA	Description	Value RO/SRO
2.4	2.4.35	Knowledge of local auxiliary operator tasks during emergency operations.	3.8/4.0
068	K1.01	Knowledge of the physical connections and/or cause effect relationships between the ED/G system and the AC distribution system.	4.1/4.4
2.1	2.1.30	Ability to locate and operate components, including local controls.	4.4/4.0

### 7.0 Setting:

---

## JOB PERFORMANCE WORKSHEET

B DG room

### **8.0 Safety Considerations:**

Potential high noise from automatic DG start (Potential for inadvertent ESFA exists). DO NOT climb on top of the DG or any sensitive structure such as instrument lines. DO NOT operate any equipment.

### **9.0 Approximate Completion Time:**

10 minutes

**Performance of this task is time critical**

### **10.0 Directions to the Student:**

Evaluator gives Tear-Off sheet to the student

Evaluator reads the following to the student (Optional for multiple JPMs)

Student

1. Ensures task is done correctly.
  2. You may be asked follow-up questions to confirm knowledge of task.
- A. You are the RSS - NSO. You will be simulating deenergizing Bus E5 following the identification of a fire in the Cable Spreading Room.
- B. The following information is provided to you:
1. Plant is in Mode 1
  2. A valid fire condition exists in the Cable Spreading Room.
  3. OS1200.00 Response to Fire or Fire Alarm Actuation has been entered.
  4. RSS-CRO has been directed to go to "B" Essential Switchgear Room and RSS-NSO has been directed to DG 1B local control panel IAW OS1200.00 step 2 RNO.
  5. You have been dispatched per OS1200.00 step 2 to perform the following:
    - Obtain OS1200.02B, Remote Safe Shutdown Control Train B from DG1B procedure satellite.
  6. You have the necessary keys on your key ring.
  7. RSS-CRO is presently at step 25b of OS1200.02B
  8. Train "A" Essential Switchgear is not habitable due to smoke
-

## JOB PERFORMANCE WORKSHEET

- C. We will begin after the "Initiating Cue" is read.
- D. Portions of this JPM contain time critical actions. You will be evaluated on performance of the task within the required time limit.
- E. I am the RSS-CRO. I will provide the cues and communications for this JPM. Do you have any questions?

### **11.0 Initiating Cue:**

**RSS-CRO, "RSS-NSO (or student's name) Simulate deenergizing Bus E5 per OS1200.02B Attachment C, beginning at Step 1.b."**

## PERFORMANCE CHECKLIST

D=Discuss P=Perform S=Simulate	ELEMENT/STEP * denotes a critical step	STANDARD * denotes a critical step	EVALUATION  SAT UNSAT
--------------------------------------	---	---------------------------------------	-----------------------------

**NOTE:** When student demonstrates the ability to obtain a controlled copy of OS1200.02B Remote Safe Shutdown Control – Train B provide the student with a copy of OS1200.02B Remote Safe Shutdown Control – Train B.

**CUE:** If the student requests a Peer Check at any time during the JPM, respond: **“No one is available to peer check your actions. Please continue with the task”.**

**NOTE:** **This JPM is time critical.** Start timing when student begins simulating performance of Attachment C step 1.b.

1.	P	Start Time _____	RSS-NSO commences the performance of Attachment C step 1.b.
----	---	------------------	---

**NOTE:** Student should move to DG 1A control panel for the subsequent steps

*2.	S	Place the following breaker selector switches to local: *     • Generator Breaker	Simulates placing the following selector switches to local: *     • Generator Breaker	_____	_____
-----	---	--	--	-------	-------

**CUE:** When student correctly simulates placing selector switch in local, evaluator to NSO, **“ Generator breaker selector switch is in local.”**

*	• UAT breaker		*     • UAT breaker	_____	_____
---	---------------	--	---------------------	-------	-------

**CUE:** When student correctly simulates placing selector switch in local, evaluator to NSO, **“ UAT breaker selector switch is in local.”**

*	• RAT breaker		*     • RAT breaker	_____	_____
---	---------------	--	---------------------	-------	-------

**CUE:** When student correctly simulates placing selector switch in local, evaluator to NSO, **“ RAT breaker selector switch is in local.”**

**PERFORMANCE CHECKLIST**

D=Discuss	ELEMENT/STEP	STANDARD	EVALUATION
P=Perform			
S=Simulate	* denotes a critical step	* denotes a critical step	SAT UNSAT

---

*3.	S	Open DG 1A generator breaker	Simulates opening DG 1A generator breaker	_____	_____
-----	---	------------------------------	---	-------	-------

**CUE:** When student correctly simulates opening DG 1A breaker evaluator to NSO, “ **Diesel Generator 1A breaker is open.**”

*4.	S	Open UAT-X-2A breaker	Simulates opening UAT-X-2A breaker	_____	_____
-----	---	-----------------------	------------------------------------	-------	-------

**CUE:** When student correctly simulates opening UAT-X-2A breaker, evaluator to NSO, “ **UAT breaker is open.**”

*5.	S	Open RAT-X-3A breaker	Simulates opening RAT-X-3A breaker	_____	_____
-----	---	-----------------------	------------------------------------	-------	-------

**CUE:** When student correctly simulates opening RAT-X-3B breaker evaluator to NSO, “ **RAT breaker is open.**”

**CUE:** Provide the following cue, evaluator to NSO,” **DG 1A is running.**”

*6.	S	Depress <b>BOTH</b> DG 1A emergency stop buttons	Simulates depressing <b>BOTH</b> DG 1A emergency stop buttons	_____	_____
-----	---	--	---	-------	-------

**CUE:** When student correctly simulates depressing **BOTH** DG 1A emergency stop buttons and checks for diesel shutdown, evaluator to NSO, “**DG 1A is not running.**”

7.	P	Record time that <b>BOTH</b> emergency stop push buttons were depressed	Time _____
----	---	---	------------

8.	P	Calculate time required to complete task (step 7 - step1)	Δ Time _____ < 7 minutes	_____	_____
----	---	---	-----------------------------	-------	-------

**NOTE:** Student should report to RSS-CRO that Bus E5 has been deenergized and DG1A has been stopped.

**CUE:** When NSO informs RSS-CRO that Bus E5 has been deenergized and DG1A has been stopped, RSS-CRO to NSO,” **Understand, Bus E5 has been deenergized and DG1A has been stopped.**”

**PERFORMANCE CHECKLIST**

D=Discuss	ELEMENT/STEP	STANDARD	EVALUATION
P=Perform			
S=Simulate	* denotes a critical step	* denotes a critical step	SAT UNSAT

---

**CUE: "The JPM is complete."**

Obtain from student:  
Tear Off Sheets and any other training  
materials used in the performance of  
the JPM

\_\_\_\_\_



**TEAR-OFF SHEET FOR JPM**  
**2009 INPLANT #3**

**Directions to the Student:**

- A. You are the RSS - NSO. You will be simulating deenergizing Bus E5 following the identification of a fire in the Cable Spreading Room.
- B. The following information is provided to you:
1. Plant is in Mode 1
  2. A valid fire condition exists in the Cable Spreading Room.
  3. OS1200.00 Response to Fire or Fire Alarm Actuation has been entered.
  4. RSS-CRO has been directed to go to "B" Essential Switchgear Room and RSS-NSO has been directed to DG 1B local control panel IAW OS1200.00 step 2 RNO.
  5. You have been dispatched per OS1200.00 step 2 to perform the following:
    - Obtain OS1200.02B, Remote Safe Shutdown Control Train B from DG1B procedure satellite.
  6. You have the necessary keys on your key ring.
  7. RSS-CRO is presently at step 25b of OS1200.02B
  8. Train "A" Essential Switchgear is not habitable due to smoke
- C. We will begin after the "Initiating Cue" is read.
- D. Portions of this JPM contain time critical actions. You will be evaluated on performance of the task within the required time limit.
- E. I am the RSS-CRO. I will provide the cues and communications for this JPM. Do you have any questions?

**11.0 Initiating Cue:**

**RSS-CRO, "RSS-NSO (or student's name) Simulate deenergizing Bus E5 per OS1200.02B Attachment C, beginning at Step 1.b."**