

Facility: <u>Fort Calhoun</u>		Date of Examination: <u>6/25/01</u>
Examination Level (circle one): <b>RO</b> / SRO		Operating Test Number: _____
Administrative Topic/Subject Description		Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	Plant Parameter Verification	JPM: Calculate Shutdown Margin
	Interpret station reference materials : graphs	JPM: Determine maximum generator loading with low hydrogen pressure
A.2	Maintenance	JPM: Logging inoperability of structures, systems and components covered by the Maintenance Rule.
		Why are you required to log non-Tech Spec equipment? What Fire Protection Equipment is covered under Maintenance Rule?
A.3	Radiation Control	JPM: RCA entry and exit (Ensure valve position in High Rad Area)
		(Empty cell for additional questions)
A.4	Emergency Plan	How far does EPZ extend?
		How do members of the public get information when sirens sound?

Fort Calhoun Station – Operations Training  
**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

JPM No: RO ADM JPM A.1.1

JPM Title: Calculate Shutdown Margin

Approximate Time: 15 minutes      Actual Time: \_\_\_\_\_

Reference(s):    Technical Data Book, TDB-V.9, "Shutdown Margin Worksheet"  
                          Technical Data Book, Section II, "Reactivity Curves"

JPM Prepared by:     Jerry Koske          Date:     4/15/2001    

JPM Reviewed by: \_\_\_\_\_      Date: \_\_\_\_\_

JPM Approved by: \_\_\_\_\_      Date: \_\_\_\_\_

Fort Calhoun Station – Operations Training  
**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

JPM No: RO ADM JPM A.1.1

JPM Title: Calculate Shutdown Margin

Operators' Name: \_\_\_\_\_ Employee # \_\_\_\_\_

All Critical Steps (\*) must be performed or simulated in accordance with the standards contained in this JPM

The Operator's performance was evaluated as (circle one):

**SATISFACTORY**

**UNSATISFACTORY**

Evaluator's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Reason, if unsatisfactory:

Tools & Equipment:       None

Safety Considerations:   None

Comments:

Fort Calhoun Station – Operations Training  
**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

JPM No: RO ADM JPM A.1.1

JPM Title: Calculate Shutdown Margin

**INITIATING CUE:** The following plant conditions exist:  
 The plant burnup is 6.00 GWD/MTU. The plant has been shutdown for 18 hours following a trip from full power. All rods, including group N are fully inserted. The boron concentration prior to the trip was 785 ppm and is currently 995 ppm. The RCS temperature is 412°F.

The CRS has directed you, the RO, to perform a shutdown margin calculation for xenon free conditions to determine if the shutdown margin is adequate.

CRITICAL STEP*	ELEMENT	STANDARD
1. ____	Obtain a copy of TDB-V.9	Provide a copy of TDB-V-9 after examinee locates procedure in TDB
2. ____	Obtain a copy of TDB section II, Reactivity curves	Obtains copy of reactivity curves
3. ____	Determines PART II of TDB procedure should be used	Performs calculation using part II
4*. ____	Performs calculation of required boron concentration	Required boron concentration between 950 and 970 ppm. (see example calculation)
5*. ____	Determines if shutdown margin is adequate	Shutdown margin is adequate

**CUE:STOP**

**Termination Criteria:** Shutdown Margin Calculation complete

Fort Calhoun Station – Operations Training  
**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

JPM No: RO ADM JPM A.1.1

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**INITIATING CUE:** The following plant conditions exist:  
The plant burnup is 6.00 GWD/MTU. The plant has been shutdown for 18 hours following a trip from full power. All rods, including group N are fully inserted. The boron concentration prior to the trip was 785 ppm and is currently 995 ppm. The RCS temperature is 412°F.

The CRS has directed you, the RO, to perform a shutdown margin calculation for xenon free conditions to determine if the shutdown margin is adequate.

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Fort Calhoun Station – Operations Training  
**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

JPM No: RO ADM JPM A-1-2

JPM Title: Determine reactive power limits with reduced hydrogen pressure

Approximate Time: 10 minutes

Actual Time: \_\_\_\_\_

Reference(s): OI-ST-1, Figure 1

JPM Prepared by: Jerry Koske Date: 4/18/2001

JPM Reviewed by: \_\_\_\_\_ Date: \_\_\_\_\_

JPM Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Fort Calhoun Station – Operations Training  
**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

JPM No: RO ADM JPM A-1-2

JPM Title: Determine reactive power limits with reduced hydrogen pressure

Operators' Name: \_\_\_\_\_ Employee # \_\_\_\_\_

All Critical Steps (\*) must be performed or simulated in accordance with the standards contained in this JPM

The Operator's performance was evaluated as (circle one):

**SATISFACTORY**

**UNSATISFACTORY**

Evaluator's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Reason, if unsatisfactory:

Tools & Equipment:       None

Safety Considerations:   None

Comments:

Fort Calhoun Station – Operations Training  
**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

JPM No: RO ADM JPM A-1-2

JPM Title: Determine reactive power limits with reduced hydrogen pressure

**INITIATING CUE:** Due to a generic problem with some fittings used in the Fort Calhoun Main Generator, the vendor issued a service bulletin stating that hydrogen pressure should be lowered to 30 psig until the problem can be resolved. This was done two days ago.

The FCS generator is operating with an output of 500 Mw(e). Energy Marketing has just called requesting that Fort Calhoun raise its reactive load to 200 Mvars lagging.

The CRS has directed you, the RO, to determine if the FCS generator can provide 200 Mvars lagging without reducing load. If not, he would like you to determine the maximum lagging reactive load FCS can produce at 500 Mw(e).

CRITICAL STEP	ELEMENT	STANDARD
1. ____	Obtain a copy of OI-ST-1, Figure 1, "Generator Capability Curve"	Obtains Generator Capability Curve from procedure or refers to curve posted on CB-20
2*. ____	Determines if 200 Mvars lagging is within the 30 psig limits	Report that 200 Mvars lagging will exceed the generator capability at full power
3*. ____	Determines reactive load limit at 500 MW(e)	The limit is between 130 and 150 Mvars lagging

**CUE: STOP**

Fort Calhoun Station – Operations Training  
**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

JPM No: RO ADM JPM A-1-2

JPM Title: Determine reactive power limits with reduced hydrogen pressure

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**Termination Criteria: Candidate has determined maximum reactive load**

Fort Calhoun Station – Operations Training  
**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

JPM No: RO ADM JPM A-1-2

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**INITIATING CUE:** Due to a generic problem with some fittings used in the Fort Calhoun Main Generator, the vendor issued a service bulletin stating that hydrogen pressure should be lowered to 30 psig until the problem can be resolved. This was done two days ago.

The FCS generator is operating with an output of 500 Mw(e). Energy Marketing has just called requesting that Fort Calhoun raise its reactive load to 200 Mvars lagging.

The CRS has directed you, the RO, to determine if the FCS generator can provide 200 Mvars lagging without reducing load. If not, he would like you to determine the maximum reactive load FCS can produce at 500 Mw(e).

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Fort Calhoun Station – Operations Training  
**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

JPM No: RO ADM JPM A.2

JPM Title: Out of service logging of component covered under Maintenance Rule

Approximate Time: 10 minutes      Actual Time: \_\_\_\_\_

Reference(s): Standing Order G-96

JPM Prepared by: Jerry Koske      Date: 4/16/2001

JPM Reviewed by: \_\_\_\_\_      Date: \_\_\_\_\_

JPM Approved by: \_\_\_\_\_      Date: \_\_\_\_\_

Fort Calhoun Station – Operations Training  
**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

JPM No: RO ADM JPM A.2

JPM Title: Out of service logging of component covered under Maintenance Rule

Operators' Name: \_\_\_\_\_ Employee # \_\_\_\_\_

All Critical Steps (\*) must be performed or simulated in accordance with the standards contained in this JPM

The Operator's performance was evaluated as (circle one):

**SATISFACTORY**

**UNSATISFACTORY**

Evaluator's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Reason, if unsatisfactory:

Tools & Equipment: CR Log Book

Safety Considerations: None

Comments:

Fort Calhoun Station – Operations Training  
**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

JPM No: RO ADM JPM A.2

JPM Title: Out of service logging of component covered under Maintenance Rule

**INITIATING CUE:** It is 1330 on June 25, 2001. AC-9A has just been taken out of service due to a bearing failure. The CRS has directed you, the RO, to make any required CR log entries.

CRITICAL STEP	ELEMENT	STANDARD
1. ____	Obtain the CR log	Gets log book
2.* ____	Makes required log entry	Must include: Component: AC-9A OOS Reason: Bearing Failure Date: 6/25/2001 Time: 1330  <b>CUE: It is now 0900 on June 27, 2001. Repair and testing are now complete on AC-9A. The CRS directs you to make the proper log entry.</b>
3.* ____	Makes required log entry	Must Include: Component: AC-9A returned to service Date: 6/27/2001 Time: 0900  <b>Question: Why is logging of AC-9A inoperability required even though it is not a Tech Spec required Component?</b>

Fort Calhoun Station – Operations Training  
**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

JPM No: RO ADM JPM A.2

JPM Title: Out of service logging of component covered under Maintenance Rule

CRITICAL STEP	ELEMENT	STANDARD
4*. _____	Answer Question	AC-9A is covered under the Maintenance Rule  <b>Question: What Fire Protection Components are covered under the Maintenance Rule?</b>
5*. _____	Answer Question	The Electric and Diesel Driven Fire Pumps (FP-1A and FP-1B)  <b>CUE: STOP</b>

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**Termination Criteria: Log entries complete and questions answered**

Fort Calhoun Station – Operations Training  
**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

JPM No: RO ADM JPM A.2

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**INITIATING CUE:** It is 1330 on June 25, 2001. AC-9A has just been taken out of service due to a bearing failure. The CRS has directed you, the RO, to make any required CR log entries.

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Fort Calhoun Station – Operations Training  
**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

JPM No: RO ADM JPM A.2

**CUE: It is now 0900 on June 27, 2001. Repair and testing are now complete on AC-9A. The CRS directs you to make the proper log entry.**

Fort Calhoun Station – Operations Training  
**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

JPM No: RO ADM JPM A.2

**Question: Why is logging of AC-9A inoperability required even though it is not a Tech Spec required Component?**

Fort Calhoun Station – Operations Training  
**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

JPM No: RO ADM JPM A.2

**Question: What Fire Protection Components are covered under the Maintenance Rule?**

Fort Calhoun Station – Operations Training  
**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

JPM No: RO ADM JPM A.3

JPM Title: RCA Entry and Exit

Approximate Time: 10 minutes      Actual Time: \_\_\_\_\_

Reference(s): GET-Radiation Worker Training  
Standing Order G-101

JPM Prepared by: Jerry Koske      Date: 4/19/2001

JPM Reviewed by: \_\_\_\_\_      Date: \_\_\_\_\_

JPM Approved by: \_\_\_\_\_      Date: \_\_\_\_\_

Fort Calhoun Station – Operations Training  
**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

JPM No: RO ADM JPM A.3

JPM Title: RCA Entry and Exit

Operators' Name: \_\_\_\_\_ Employee # \_\_\_\_\_

All Critical Steps (\*) must be performed or simulated in accordance with the standards contained in this JPM

The Operator's performance was evaluated as (circle one):

**SATISFACTORY**

**UNSATISFACTORY**

Evaluator's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Reason, if unsatisfactory:

Tools & Equipment:       None

Safety Considerations:   None

Comments:                 This JPM will be performed in the Training Center.  
Entry into Room 29 (VCT Room) will be simulated.

Fort Calhoun Station – Operations Training  
**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

JPM No: RO ADM JPM A.3

JPM Title: RCA Entry and Exit

**INITIATING CUE:** You have been directed to enter Room 29 to ensure that CH-216, VCT to gas analyzer, is OPEN.

**START**

CRITICAL STEP	ELEMENT	STANDARD
1*. ____	Review RWP	Reads RWP
2. ____	Determine Radiological Conditions in Room 29.	Checks survey maps and/or discusses radiological conditions with RP personnel.
3*. ____	Obtains Dosimetry	Verify TLD attached to security badge. Obtain EAD.
4*. ____	Sign in on appropriate RWP	Insert EAD in reader. Scan PID and RWP number
5. ____	Enter RCA	RCA entered
6. ____	Enter Room 29	Enters simulated Room 29  <b>CUE: EAD is Alarming on high dose rate</b>
7*. ____	Exits Room and Contacts RP	Leaves Room Immediately and Contacts RP  <b>CUE: RP will provide coverage for Room 29 entry.</b>

Fort Calhoun Station – Operations Training  
**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

JPM No: RO ADM JPM A.3

JPM Title: RCA Entry and Exit

CRITICAL STEP	ELEMENT	STANDARD
8. ____	Enter Room 29 with RP Tech	Enters room  <b>CUE: CH-216 is OPEN</b>
9. ____	Exits Room 29 with RP Tech	Exits room
10*. ____	Monitor for personnel contamination prior to exiting RCA	Monitor for contamination using PCM
11*. ____	Sign out of RCA	Insert EAD in reader, enter PID number and confirm dose

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**Termination Criteria: RCA has been exited**

Fort Calhoun Station – Operations Training  
**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

JPM No: RO ADM JPM A.3

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**INITIATING CUE:** You have been directed to enter Room 29 to ensure that CH-216, VCT to gas analyzer, is OPEN.

**START**

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Fort Calhoun Station – Operations Training  
**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

JPM No: RO ADM JPM A.4

JPM Title: EP Questions

Approximate Time: 5 minutes

Actual Time: \_\_\_\_\_

Reference(s): GET Training  
EIPs

JPM Prepared by: Jerry Koske Date: 4/19/2001

JPM Reviewed by: \_\_\_\_\_ Date: \_\_\_\_\_

JPM Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Fort Calhoun Station – Operations Training  
**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

JPM No: RO ADM JPM A.4

JPM Title: EP Questions

Operators' Name: \_\_\_\_\_ Employee # \_\_\_\_\_

All Critical Steps (\*) must be performed or simulated in accordance with the standards contained in this JPM

The Operator's performance was evaluated as (circle one):

**SATISFACTORY**

**UNSATISFACTORY**

Evaluator's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Reason, if unsatisfactory:

Tools & Equipment:       None

Safety Considerations:   None

Comments:                 This Administrative JPM consists of two questions

Fort Calhoun Station – Operations Training  
**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

JPM No: RO ADM JPM A.4

JPM Title: EP Questions

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Question One:           What is the distance from Fort Calhoun Station to the outer boundary of the Emergency Planning Zone (EPZ)?

Answer:                   The EPZ extends 10 miles from the plant,

Question Two:           What should a member of the public do if he hears the EP sirens go off and there was no announcement of a test?

Answer:                   Listen to the radio for instructions (KFAB – 1110 AM) or contact the Media Relations Department.

Note: Candidate only needs to provide one method of obtaining information. Candidate is not required to specify the radio station.

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Fort Calhoun Station – Operations Training  
**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

JPM No: RO ADM JPM A.4

Question One

What is the distance from Fort Calhoun Station to the outer boundary of the Emergency Planning Zone (EPZ)?

Fort Calhoun Station – Operations Training  
**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

JPM No: RO ADM JPM A.4

Question Two:

What should a member of the public do if he hears the EP sirens go off and there was no announcement of a test?

Facility: <u>Fort Calhoun</u>		Date of Examination: <u>6/25/01</u>
Examination Level (circle one): RO / <b>SRO</b>		Operating Test Number: _____
Administrative Topic/Subject Description		Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	Plant Parameter Verification	JPM: Determination of primary to secondary leakage using plant data.
	Mode Changes	JPM: Determine equipment operability requirements during mode transition.
A.2	Surveillance Testing	JPM: SRO Review of surveillance test results
A.3	Radiation Control	JPM: Authorize Monitor Tank Release
A.4	Emergency Plan	JPM: Classification and Protective Action Recommendations for Scenario Event.

Fort Calhoun Station – Operations Training  
**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

JPM No: SRO Administrative JPM (A.1.1)

JPM Title: Determine primary to secondary leak rate

Approximate Time: 10 Minutes

Actual Time: \_\_\_\_\_

Reference(s): Standing Order G-105  
Standing Order O-43

JPM Prepared by: Jerry Koske Date: 4/15/2001

JPM Reviewed by: \_\_\_\_\_ Date: \_\_\_\_\_

JPM Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Fort Calhoun Station – Operations Training  
**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

JPM No: SRO Administrative JPM (A.1.1)

JPM Title: Determine primary to secondary leak rate

Operators' Name: \_\_\_\_\_ Employee # \_\_\_\_\_

All Critical Steps (\*) must be performed or simulated in accordance with the standards contained in this JPM

The Operator's performance was evaluated as (circle one):

**SATISFACTORY**

**UNSATISFACTORY**

Evaluator's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Reason, if unsatisfactory:

Tools & Equipment:       None

Safety Considerations:   None

Comments:

Fort Calhoun Station – Operations Training  
**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

JPM No: SRO Administrative JPM (A.1.1)

JPM Title: Determine primary to secondary leak rate

**INITIATING CUE:** The plant is operating at 100% power. The RCS chemistry is:

- Total RCS Activity = 9.5mCi/g
- Xe-133 Activity = 8.6 mCi/g Xe-133
- DEI-131 Activity = 0.05
- Boron Concentration = 875 ppm
- RM-057 is reading 13000 cpm

All these values have been steady for the past hour. The Condenser Evacuation pumps are in recirc mode.

The Shift Manager directs you, the CRS, to estimate the primary to secondary leakrate and determine what actions, if any, are required.

CRITICAL STEP	ELEMENT	STANDARD
1. _____	Obtain copy of Standing Order G-105	Obtains copy of Standing Order G-105
2.* _____	Use S.O. G-105 to estimate primary to secondary leakage	Estimates leakage between 80 and 85 gpd
3. _____	Determine Action level	Action level 3
4* _____	Determine required actions	Commence controlled plant shutdown using OP-4, Align condenser evacuation discharge to aux building stack.
5. _____	Obtain copy of Standing Order O-43	Obtains S.O. O-43
6. _____	Determine fuel action level	Action level 3

Fort Calhoun Station – Operations Training  
**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

JPM No: SRO Administrative JPM (A.1.1)

JPM Title: Determine primary to secondary leak rate

CRITICAL STEP	ELEMENT	STANDARD
7*. _____	Determine desired blowdown operation	Blowdown should be isolated

**CUE: STOP**

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**Termination Criteria: A determination of primary to secondary leakrate  
and required actions has been performed.**

Fort Calhoun Station – Operations Training  
**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

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**INITIATING CUE:** The plant is operating at 100% power. The RCS chemistry is:

- Total RCS Activity = 9.5mCi/g
- Xe-133 Activity = 8.6 mCi/g Xe-133
- DEI-131 Activity = 0.05
- Boron Concentration = 875 ppm
- RM-057 is reading 13000 cpm

All these values have been steady for the past hour.  
The Condenser Evacuation pumps are in recirc mode.

The Shift Manager directs you, the CRS, to estimate the primary to secondary leakrate and determine what actions, if any, are required.

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Fort Calhoun Station – Operations Training  
**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

JPM No: SRO ADM JPM A.1.2

JPM Title: Equipment Operability Determination during Transition Modes

Approximate Time: 10 minutes      Actual Time: \_\_\_\_\_

Reference(s): Technical Specifications  
TDB-III.42

JPM Prepared by: Jerry Koske      Date: 4/22/2001

JPM Reviewed by: \_\_\_\_\_      Date: \_\_\_\_\_

JPM Approved by: \_\_\_\_\_      Date: \_\_\_\_\_

Fort Calhoun Station – Operations Training  
**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

JPM No: SRO ADM JPM A.1.2

JPM Title: Equipment Operability Determination during Transition Modes

Operators' Name: \_\_\_\_\_ Employee # \_\_\_\_\_

All Critical Steps (\*) must be performed or simulated in accordance with the standards contained in this JPM

The Operator's performance was evaluated as (circle one):

**SATISFACTORY**

**UNSATISFACTORY**

Evaluator's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Reason, if unsatisfactory:

Tools & Equipment:       None

Safety Considerations:   None

Comments:

Fort Calhoun Station – Operations Training  
**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

JPM No: SRO ADM JPM A.1.2

JPM Title: Equipment Operability Determination during Transition Modes

**INITIATING CUE:** You are an SRO assigned to the OSS during a refueling outage. The reactor has been shutdown for 24 hours and RCS cooldown is in progress. The RCS temperature is 450°F and the pressure is 1250 psia. To allow for some emergent maintenance, outage management has asked you to determine if a temporary procedure change could be made and Safety Injection Tank Isolation Valves HCV-2956 and HCV-2976 closed and deenergized at this time. **START**

CRITICAL STEP	ELEMENT	STANDARD
1. ____	Checks Technical Specifications	Determines that condition is allowable by Technical Specifications.
2*. ____	Refers to TDB-III.42 , Table 1	Determines that these valves must remain locked open until RCS pressure is below 400 psia

**CUE: STOP**

**Termination Criteria:** Candidate determines if condition is allowable or not.

Fort Calhoun Station – Operations Training  
**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

JPM No: SRO ADM JPM A.1.2

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**INITIATING CUE:** You are an SRO assigned to the OSS during a refueling outage. The reactor has been shutdown for 24 hours and RCS cooldown is in progress. The RCS temperature is 450°F and the pressure is 1250 psia. To allow for some emergent maintenance, outage management has asked you to determine if a temporary procedure change could be made and Safety Injection Tank Isolation Valves HCV-2956 and HCV-2976 closed and deenergized at this time. **START**

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Fort Calhoun Station – Operations Training  
**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

JPM No: SRO ADM JPM A.2

JPM Title: Shift Manager Review of Surveillance Test Results

Approximate Time: 10 minutes

Actual Time: \_\_\_\_\_

Reference(s): OP-ST-MS-3002

JPM Prepared by: Jerry Koske Date: 4/21/2001

JPM Reviewed by: \_\_\_\_\_ Date: \_\_\_\_\_

JPM Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Fort Calhoun Station – Operations Training  
**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

JPM No: SRO ADM JPM A.2

JPM Title: Shift Manager Review of Surveillance Test Results

Operators' Name: \_\_\_\_\_ Employee # \_\_\_\_\_

All Critical Steps (\*) must be performed or simulated in accordance with the standards contained in this JPM

The Operator's performance was evaluated as (circle one):

**SATISFACTORY**

**UNSATISFACTORY**

Evaluator's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Reason, if unsatisfactory:

Tools & Equipment:       None

Safety Considerations:   None

Comments:

Fort Calhoun Station – Operations Training  
**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

JPM No: SRO ADM JPM A.2

JPM Title: Shift Manager Review of Surveillance Test Results

**INITIATING CUE:** You are acting as the Shift Manager. OP-ST-MS-3002 has been completed today, 6/10/2001. The STA has completed his evaluation of the test data and forwarded the test procedure to you for approval. Review the test documentation and approve, if warranted. **START**

CRITICAL STEP	ELEMENT	STANDARD
		<b>CUE: Provide candidate with a copy of surveillance test procedure.</b>
1. ____	Reviews procedure for completion.	Procedure filled in up to point of Shift Manager approval
2*. ____	Reviews results in Table One	Determines that test stroke time for HCV-1042C was outside of the Alert Range and that the verification stroke time was not performed as required
		<b>CUE: STOP</b>

**Termination Criteria:** Test results reviewed

Fort Calhoun Station – Operations Training  
**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

JPM No: SRO ADM JPM A.2

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**INITIATING CUE:** You are acting as the Shift Manager. OP-ST-MS-3002 has been completed today, 6/10/2001. The STA has completed his evaluation of the test data and forwarded the test procedure to you for approval. Review the test documentation and approve, if warranted. **START**

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Fort Calhoun Station – Operations Training  
**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

JPM No: SRO ADM JPM A.3

JPM Title: Authorize Release of Monitor Tank WD-22B

Approximate Time: 10 minutes

Actual Time: \_\_\_\_\_

Reference(s): OI-WD-3  
FC-211

JPM Prepared by: Jerry Koske Date: 4/19/2001

JPM Reviewed by: \_\_\_\_\_ Date: \_\_\_\_\_

JPM Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Fort Calhoun Station – Operations Training  
**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

JPM No: SRO ADM JPM A.3

JPM Title: Authorize Release of Monitor Tank WD-22B

Operators' Name: \_\_\_\_\_ Employee # \_\_\_\_\_

All Critical Steps (\*) must be performed or simulated in accordance with the standards contained in this JPM

The Operator's performance was evaluated as (circle one):

**SATISFACTORY**

**UNSATISFACTORY**

Evaluator's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Reason, if unsatisfactory:

Tools & Equipment:       None

Safety Considerations:   None

Comments:

Fort Calhoun Station – Operations Training  
**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

JPM No: SRO ADM JPM A.3

JPM Title: Authorize Release of Monitor Tank WD-22B

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**INITIATING CUE:** You are the Shift Manager. A release of Monitor Tank WD-22B is planned. The EONA has brought OI-WDL-3 and a Release Permit to you and asked that you authorize the release.

**START**

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CRITICAL STEP	ELEMENT	STANDARD
1.____	Reviews partially filled out OI-WDL-3 and associated FC-211 Release Permit	Examines procedure and Release Permit
2*. ____	Determines that the maximum release rate and administrative release rate recorded on the procedure do not agree with the Release Permit.	Maximum release rate should be 50 gpm. Administrative release rate should be 45 gpm.
3*.____	Release Authorization	Does not authorize release OR Corrects maximum (50 gpm) and administrative (45 gpm) release rates prior to authorizing release

---

**Termination Criteria:** Candidate has authorized or decided not to authorize release

Fort Calhoun Station – Operations Training  
**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

JPM No: SRO ADM JPM A.3

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**INITIATING CUE:** You are the Shift Manager. A release of Monitor Tank WD-22B is planned. The EONA has brought OI-WDL-3 and a Release Permit to you and asked that you authorize the release.

**START**

---

Fort Calhoun Station – Operations Training  
**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

JPM No: SRO ADM JPM A.4

JPM Title: Emergency Event Classification

Approximate Time: 10 minutes

Actual Time: \_\_\_\_\_

Reference(s): EPIP-OSC-1

JPM Prepared by: Jerry Koske Date: 4/19/2001

JPM Reviewed by: \_\_\_\_\_ Date: \_\_\_\_\_

JPM Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Fort Calhoun Station – Operations Training  
**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

JPM No: SRO ADM JPM A.4

JPM Title: Emergency Event Classification

Operators' Name: \_\_\_\_\_ Employee # \_\_\_\_\_

All Critical Steps (\*) must be performed or simulated in accordance with the standards contained in this JPM

The Operator's performance was evaluated as (circle one):

**SATISFACTORY**

**UNSATISFACTORY**

Evaluator's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Reason, if unsatisfactory:

Tools & Equipment:       None

Safety Considerations:   None

Comments:                 Conducted after Simulator Scenario 2

Fort Calhoun Station – Operations Training  
**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

JPM No: SRO ADM JPM A.4

JPM Title: Emergency Event Classification

**INITIATING CUE:** A Plant event has just occurred involving a 50 gpm interfacing LOCA from the RCS to the CCW system through a ruptured RCP Seal Cooler. The CCW surge tank has ruptured. Total RCS Activity is 12 mCi/gm. E-bar is 0.70 Mev. DEI-131 is 24.5 mCi/gm.

**You, as Shift Manager, have Command and Control of the Emergency. Classify the Event and determine if any PARs are in order?**

CRITICAL STEP	ELEMENT	STANDARD
1. ____	Obtain a copy of EPIP-OSC-1 and Form FC-1188	Get copy of EPIP-OSC-1 and Form FC-1188
2*. ____	Classify Event	Classified as a Site Area Emergency on form FC-1188 (loss of two barriers).
3. ____	Obtain Copy of EAGLE output	<b>CUE: Provide EAGLE Output</b>
4*. ____	Determine if any PARs should be made	FC-1188 should indicate NONE under PARs  <b>CUE: STOP</b>

**Termination Criteria:** Event Classification and PARs indicated on form FC-1188

Fort Calhoun Station – Operations Training  
**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

JPM No: SRO ADM JPM A.4

---

**INITIATING CUE:** A Plant event has just occurred involving a 50 gpm interfacing LOCA from the RCS to the CCW system through a ruptured RCP Seal Cooler. The CCW surge tank has ruptured. Total RCS Activity is 12 mCi/gm. E-bar is 0.70 Mev. DEI-131 is 24.5 mCi/gm.

You, as Shift Manager, have Command and Control of the Emergency. Classify the Event and determine if any PARs are in order?

---

Facility: Fort Calhoun  
Exam Level (circle one): **RO** / SRO(I) / SRO(U)

Date of Examination: 6/25/01  
Operating Test No.: \_\_\_\_\_

### B.1 Control Room Systems

System / JPM Title	Type Code*	Safety Function
a.Plant fire onsite / Restore control room ventilation following smoke alarm. (APE067 AA1.05/ Ability to operate control room ventilation following fire/RO 3.0/SRO 3.1)	N, A	8
b.Hydrogen purge control system / 156 - Operate Containment Hydrogen analyzer (028 A1.01/Ability to monitor changes in hydrogen concentration/RO 3.4/SRO 3.8)	E, D, S	5
c.Emergency Core Cooling System/ HPSI pump operability test.(006 A4.01/Ability to operate pumps/RO 4.1/SRO 3.9)	N, A, S	2
d.Pressurizer Pressure Control System/ PORV Operability Test (010 A4.03/ Ability to operate and monitor PORV and Block Valves./ RO 3.8/ SRO 4.0)	N, A, S	3
e.RCPs/ 612 Start a reactor coolant pump (003 A2.01/Ability to mitigate problems with RCP seals/ RO 3.5/ SRO 3.9)	M, A, L, S	4
f.NIS/ 571 Adjust Narrow Range Safety Channel Nuclear Instrumentation( 015 A1.01/Ability to monitor NIS calibration by heat balance/ RO 3.5 /SRO 3.8)	D, S	7
g.ED/G 392 Perform ESF Sequencer surveillance test (064 A3.07/ Ability to monitor automatic load sequencing / RO 3.6 / SRO 3.7)	M, A, S	6

### B.2 Facility Walk-Through

a. D.C. Distribution / 304 - Minimize DC Bus loads (063 A1.01/ Ability to predict battery capacity as affected by discharge rate/ RO 2.5 / SRO 3.3) Note: IPE indicates high importance at FCS.	E, T, M	6
b.Component Cooling /010RW-1 Establish Raw water backup to Containment coolers (008 K1.01/ knowledge of physical connections to RWS/ RO 3.1/ SRO 3.1)	R, E, M	8
c.Auxiliary Feedwater/ 101-Local start of FW-54 for makeup to EFWST.(061 K4.01 Knowledge of design features for water sources / RO 4.1 / SRO 4.2)	M, E	4

\* Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow-Power, (R)CA, (E)mergency, (T)ime Critical

Facility: <u>Fort Calhoun</u>		Date of Examination: <u>6/25/01</u>
Exam Level (circle one): RO / <b>SRO(I)</b> / SRO(U)		Operating Test No.: _____
B.1 Control Room Systems		
System / JPM Title	Type Code*	Safety Function
a.Plant fire onsite / Restore control room ventilation following smoke alarm. (APE067 AA1.05/ Ability to operate control room ventilation following fire/RO 3.0/SRO 3.1)	N, A	8
b. Waste Gas Disposal System/ 027 Waste Gas Incident. (071 A3.03/Ability to monitor radiation alarms/ RO 3.6 SRO 3.8)	E, M, S	9
c. Emergency Core Cooling System/ HPSI pump operability test.(006 A4.01/Ability to operate pumps/RO 4.1/SRO 3.9)	N, A, S	2
d.Pressurizer Pressure Control System/ PORV Operability Test (010 A4.03/ Ability to operate and monitor PORV and Block Valves./ RO 3.8/ SRO 4.0)	N, A, S	3
e.RCPs/ 612 Start a reactor coolant pump (003 A2.01/Ability to mitigate problems with RCP seals/ RO 3.5/ SRO 3.9)	M, A, L, S	4
f.NIS/ 571 Adjust Narrow Range Safety Channel Nuclear Instrumentation( 015 A1.01/Ability to monitor NIS calibration by heat balance/ RO 3.5 /SRO 3.8)	D, S	7
g.ED/G 392 Perform ESF Sequencer surveillance test (064 A3.07/ Ability to monitor automatic load sequencing / RO 3.6 / SRO 3.7)	M, A, S	6
B.2 Facility Walk-Through		
a. D.C. Distribution / 304 - Minimize DC Bus loads (063 A1.01/ Ability to predict battery capacity as affected by discharge rate/ RO 2.5 / SRO 3.3) Note: IPE indicates high importance at FCS.	E,T, M	6
b.Component Cooling /010RW-1 Establish Raw water backup to Containment coolers (008 K1.01/ knowledge of physical connections to RWS/ RO 3.1/ SRO 3.1)	R, E, M	8
c.Auxiliary Feedwater/ 101-Local start of FW-54 for makeup to EFWST.(061 K4.01 Knowledge of design features for water sources / RO 4.1 / SRO 4.2)	M, E	4
* Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow-Power, (R)CA, (E)mergency, (T)ime Critical		

Facility: <u>Fort Calhoun</u> Exam Level (circle one): RO / SRO(I) / <b>SRO(U)</b>		Date of Examination: <u>6/25/01</u> Operating Test No.: _____
<b>B.1 Control Room Systems</b>		
System / JPM Title	Type Code*	Safety Function
a.		
b. Waste Gas Disposal System/ 027 Waste Gas Incident. (071 A3.03/Ability to monitor radiation alarms/ RO 3.6 SRO 3.8)	E, M, S	9
c. Emergency Core Cooling System/ HPSI pump operability test. (006 A4.01/Ability to operate pumps/RO 4.1/SRO 3.9)	N, A, S	2
d.		
e. RCPs/ 612 Start a reactor coolant pump (003 A2.01/Ability to mitigate problems with RCP seals/ RO 3.5/ SRO 3.9)	M, A, L, S	4
f.		
g.		
<b>B.2 Facility Walk-Through</b>		
a. D.C. Distribution / 304 - Minimize DC Bus loads (063 A1.01/ Ability to predict battery capacity as affected by discharge rate/ RO 2.5 / SRO 3.3) Note: IPE indicates high importance at FCS.	E, T, M	6
b. Component Cooling / 010RW-1 Establish Raw water backup to Containment coolers (008 K1.01/ knowledge of physical connections to RWS/ RO 3.1/ SRO 3.1)	R, E, M	8
c.		
* Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow-Power, (R)CA, (E)mergency, (T)ime Critical		

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: New CR Vent (rev 1)

JPM Title: Restore Control Room Ventilation following Smoke Detector Trip

Location: Control Room

Approximate Time: 15 minutes Actual Time: \_\_\_\_\_

Reference(s): OI-VA-3 Attachments 1 and 9  
K/A APE 067 AA1.05 (RO 3.0 / SRO 3.1)

JPM Prepared by: Jerry Koske Date: 4/20/2001

JPM Reviewed by: \_\_\_\_\_ Date: \_\_\_\_\_

JPM Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: New CR Vent (rev 1)

JPM Title: Restore Control Room Ventilation following Smoke Detector Trip

Operators' Name: \_\_\_\_\_ Employee # \_\_\_\_\_

All Critical Steps (\*) must be performed or simulated in accordance with the standards contained in this JPM

The Operator's performance was evaluated as (circle one):

**SATISFACTORY**

**UNSATISFACTORY**

Evaluator's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Reason, if unsatisfactory:

Tools & Equipment:       None

Safety Considerations:   None

Comments:                 This is a static alternate path JPM

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: New CR Vent (rev 1)

JPM Title: Restore Control Room Ventilation following Smoke Detector Trip

**INITIATING CUE:** A smoke detector has tripped the Control Room ventilation system following a fire in the kitchen area. The fire has been extinguished and smoke has been cleared from the area.

**You are directed to restore the Control Room ventilation system to the normal mode of operation, with VA-46A as the running unit. START**

CRITICAL STEP	ELEMENT	STANDARD
1. ____	Obtain copy of OI-VA-3	Locates OI-VA 3  <b>Provide candidate with a copy of OI-VA-3</b>
2. ____	Ensure the following: <ul style="list-style-type: none"> <li>All ventilation dampers closed</li> <li>Operating ventilation units tripped (VA-46A/B)</li> </ul>	(AI-106A/B) GREEN lights  Control switch RED flag with GREEN light (may place CS in AFTER-STOP)
3*, ____	Place Smoke Detector Override switches in override	(AI-106A/B) HC-VA46A-3 and HC-VA46B-3 in OVERRIDE
4. ____	Turns to OI-VA-3, attachment 1	<b>CUE: All prerequisites are met</b>
5. ____	Verify VA-46A/B are in stop	(AI-106A/B) HC-VA46-A-2 and HC-VA-46-B-2 in AFTER STOP with GREEN lights lit
6. ____	Verify filter fan control switch position	HC-VA63A and HC-VA63B in AUTO with GREEN light lit

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: New CR Vent (rev 1)

JPM Title: Restore Control Room Ventilation following Smoke Detector Trip

CRITICAL STEP	ELEMENT	STANDARD
7. ____	Cycle disconnect switch for desired air unit	VA-46A-DS to OFF then to ON
8*. ____	Start VA-46A	(AI-106A) HC-VA 46A-2 to START. RED light lit
9. ____	Verify valve alignment	<p>All of the following are OPEN</p> <ul style="list-style-type: none"> <li>• PCV 840B (RED Light lit)</li> <li>• PCV-840A-1(RED Light lit)</li> <li>• PCV-840A-2 (RED Light lit)</li> <li>• HCV-2898A (RED Light lit)</li> <li>• HCV-2898B (RED Light lit)</li> </ul> <p><b>CUE : GREEN lights are ON for HCV-2898A and HCV-2898B. They are closed and will not open.</b></p> <p><b>When reported, candidate is directed to restore CR cooling using available equipment.</b></p>
10*. ____	Shut Down VA-46A	(AI-106A) HC-VA 46A-2 to STOP and GREEN light lit
11. ____	Cycle disconnect switch for desired air unit	VA-46B-DS to OFF then to ON
12*. ____	Start VA-46B	(AI-106B) HC-VA 46B-2 to START. RED light lit
13. ____	Verify valve alignment	All of the following are OPEN

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: New CR Vent (rev 1)

JPM Title: Restore Control Room Ventilation following Smoke Detector Trip

CRITICAL STEP	ELEMENT	STANDARD
		<ul style="list-style-type: none"> <li>• PCV 841B (RED Light lit)</li> <li>• PCV-841A-1 (RED Light lit)</li> <li>• PCV-841A-2 (RED Light lit)</li> <li>• HCV-2899A (RED Light lit)</li> <li>• HCV-2899B (RED Light lit)</li> </ul> <p><b>CUE : The ductwork is clear of smoke</b></p>

14*. _____	Place smoke detector override switches in normal	HC-VA-46A-3 and HC-VA-46B-3 in NORMAL
<b>CUE: STOP</b>		

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**Termination Criteria: CR Ventilation in normal operation**

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: New CR Vent (rev 1)

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**INITIATING CUE:** A smoke detector has tripped the Control Room ventilation system following a fire in the kitchen area. The fire has been extinguished and smoke has been cleared from the area.

You are directed to restore the Control Room ventilation system to the normal mode of operation, with VA-46A as the running unit. **START**

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Fort Calhoun Station - Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No.: JPM-0156

JPM Title: **Operate the Containment Hydrogen Analyzer**

System(s): Ventilation Systems

Location(s): Control Room

Approximate Time: 15 minutes

- Reference(s): (1) EOP Attachment 16  
(2) NRC K/A 000028,K5.01 (RO3.4/SRO3.9)  
(3) NRC K/A 000028,A1.01 (RO3.4/SRO3.8)

REVISION/REPERMUNICATION
MASTER REVISION No. ___
SIGNATURE
DATE _____

JPM Prepared by: C.L. Rennerfeldt Date: 07/10/97

JPM Approved by: \_\_\_\_\_ Date:

Fort Calhoun Station - Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No.: JPM-0156

JPM Title: **Operate the Containment Hydrogen Analyzer**

System(s): Ventilation Systems

Location(s): Control Room

Approximate Time: 15 minutes

Actual Time:

Reference(s): (1) EOP Attachment 16 (R-5)  
(2) NRC K/A 000028,K5.01 (RO3.4/SRO3.9)  
(3) NRC K/A 000028,A1.01 (RO3.4/SRO3.8)

**Verify current reference revisions match those listed above**

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Operator's Name: \_\_\_\_\_ Employee ID #:

All Critical Steps (\*) must be performed or simulated in accordance with the standards contained in this JPM.

The operator's performance was evaluated as:

**SATISFACTORY      UNSATISFACTORY**

Evaluator's Signature: \_\_\_\_\_ Date:

Reason, if unsatisfactory:

Operator's reviewed: \_\_\_\_\_ Date:

Fort Calhoun Station - Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No.: JPM-0156

JPM Title: **Operate the Containment Hydrogen Analyzer**

Tools & Equipment: None.

Safety Considerations: None.

Comments: Task associated with Containment Hydrogen Purge.  
All steps performed at AI-65A/B unless otherwise noted.

**THIS JPM WILL BE CONDUCTED AS A DYNAMIC JPM ON THE SIMULATOR.**

Fort Calhoun Station - Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No.: JPM-0156

JPM Title: **Operate the Containment Hydrogen Analyzer**

* CRITICAL STEP	ELEMENT	STANDARD
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**Initiating Cue :**

**A LOCA has occurred and an analysis for Hydrogen concentration is required. You are directed to place the Hydrogen analyzers in service per the EOP attachments and sample the upper level of containment via HCV-820C and HCV-883C.**

**START**

<p>___ 1. Start Hydrogen analyzers:</p> <p style="padding-left: 20px;">* a. Open HCV-820C.</p> <p style="padding-left: 20px;">* b. Open HCV-883C</p> <p style="padding-left: 40px;">* c. Open H<sub>2</sub> analyzer isolation valves.</p> <p style="padding-left: 20px;">___ d. Place HR-81A/B in service.</p> <p style="padding-left: 20px;">___ e. Ensure H<sub>2</sub> Analyzer Dual Range Selector Switches in 0-10%.</p> <p style="padding-left: 20px;">* f. Place Hydrogen analyzer power to on.</p> <p style="padding-left: 20px;">* g. Turn on Hydrogen analyzers function to SAMPLE.</p> <p style="padding-left: 20px;">* h. Push REMOTE selector push buttons.</p> <p style="padding-left: 20px;">___ i. Check the following indications:</p> <ul style="list-style-type: none"> <li>· ANN. A65A or B window 32 IN ALARM</li> <li>· Sample indicating light is ON</li> </ul> <p style="padding-left: 20px;">___ j. Press ALARM RESET push buttons.</p> <p style="padding-left: 20px;">* k. Obtain H<sub>2</sub> reading</p>	<p style="text-align: center;">AI-65A</p> <p>a. Control switch to OPEN &amp; Verify RED light lit.</p> <p>b. Control switch to OPEN &amp; verify RED light lit.</p> <p style="text-align: center;">AI-43 A&amp;B</p> <p>c. HCV-820A/821A to override &amp; red lights lit.  HCV-883A/884A to override &amp; red lights lit.  HCV-820B/821B to override &amp; red lights lit.  HCV-883B/884B to override &amp; red lights lit.</p> <p>d. Turn recorders on.</p> <p>e. Select 0-10% Range position.</p> <p>f. Selector switch in ANALYZE.</p> <p>g. Select SAMPLE position.</p> <p>h. Depress push buttons.</p> <p>i.</p> <ul style="list-style-type: none"> <li>· Alarm window(s) lit.</li> <li>· Light is lit.</li> </ul> <p>j. Depress pushbuttons.</p> <p><b>CUE: 60 seconds have elapsed</b>  Report reading</p>
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Fort Calhoun Station - Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No.: JPM-0156

JPM Title: **Operate the Containment Hydrogen Analyzer**

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<b>* CRITICAL STEP</b>	<b>ELEMENT</b>	<b>STANDARD</b>
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**Terminating Criteria: "% H<sub>2</sub>" reading has been obtained.**

Fort Calhoun Station - Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No.: JPM-0156

JPM Title: **Operate the Containment Hydrogen Analyzer**

**Initiating Cue:**

**A LOCA has occurred and an analysis for Hydrogen concentration is required. You are directed to place the Hydrogen analyzers in service per the EOP attachments and sample the upper level of containment via HCV-820C and HCV-883C.**

**START**

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: New HPSIJPM

JPM Title: HPSI Pump Operability Test (alternate path)

Location: Control Room

Approximate Time: 10 minutes Actual Time: \_\_\_\_\_

Reference(s): OI-SI-1, Attachment 2  
K/A 006 A4.01 (RO 4.1 / SRO 3.9)

JPM Prepared by: Jerry Koske Date: 4/20/2001

JPM Reviewed by: \_\_\_\_\_ Date: \_\_\_\_\_

JPM Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: New HPSIJPM

JPM Title: HPSI Pump Operability Test (alternate path)

Operators' Name: \_\_\_\_\_ Employee # \_\_\_\_\_

All Critical Steps (\*) must be performed or simulated in accordance with the standards contained in this JPM

The Operator's performance was evaluated as (circle one):

**SATISFACTORY**

**UNSATISFACTORY**

Evaluator's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Reason, if unsatisfactory:

Tools & Equipment:       None

Safety Considerations:   None

Comments:                 This is an Alternate path JPM

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: New HPSIJPM

JPM Title: HPSI Pump Operability Test (alternate path)

**INITIATING CUE:**                    **HPSI pump SI-2A was tagged out for breaker maintenance. The tag removal process has been completed and the CRS directs you the LO, to perform an operability check of the pump. The breaker is racked in and the 69 switch is red flagged. The EONA reports that the Pump is ready to start and the minimum recirculation valve is open. All prerequisites are met. START.**

CRITICAL STEP	ELEMENT	STANDARD
1. ____	Ensure Suction valve is Open	(AI-128) HCV-2927 key switch in OPEN and RED light lit
2. ____	Ensure SIRWT Tank Recirculation valves are open	(AI-30) HCV-385 and HCV-386 are open, RED lights lit
3. ____	Ensure HCV-2983 is closed	(AI-30) Switch in CLOSED position. GREEN light lit
4.* ____	Start HPSI pump SI-2A	(AI-30) Place SI-2A control switch in AFTER-START and RED light lit
5. ____	Monitor pump motor current	(AI-30) Current approximately 200 amps
		<b>NOTE: Simulator Operator ramps pump suction valve, LCV-383-2, closed</b>
6. ____	Operator Observes Alarm	(AI-30) Annunciator A33-1 G2 "SIRWT HEADER #1 RECIRC VALVES OFFNORMAL"

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: New HPSIJPM

JPM Title: HPSI Pump Operability Test (alternate path)

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CRITICAL STEP	ELEMENT	STANDARD
7*. _____	Trip SI-2A	(AI-30) Place SI-2A Control switch in AFTER-STOP , GREEN light lit

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**CUE: STOP**

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**Termination Criteria: HPSI pump manually tripped after loss of suction path**

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: : New HPSI JPM

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**INITIATING CUE:**

**HPSI pump SI-2A was tagged out for breaker maintenance. The tag removal process has been completed and the CRS directs you the LO, to perform an operability check of the pump. The breaker is racked in and the 69 switch is red flagged. The EONA reports that the Pump is ready to start and the minimum recirculation valve is open. All prerequisites are met. START.**

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Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: New HPSI JPM – version 2

JPM Title: HPSI Pump Operability Test (alternate path)

Location: Control Room

Approximate Time: 10 minutes Actual Time: \_\_\_\_\_

Reference(s): OI-SI-1, Attachment 2  
K/A 006 A4.01 (RO 4.1 / SRO 3.9)

JPM Prepared by: Jerry Koske Date: 4/20/2001

JPM Reviewed by: \_\_\_\_\_ Date: \_\_\_\_\_

JPM Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: New HPSI JPM – version 2

JPM Title: HPSI Pump Operability Test (alternate path)

Operators' Name: \_\_\_\_\_ Employee # \_\_\_\_\_

All Critical Steps (\*) must be performed or simulated in accordance with the standards contained in this JPM

The Operator's performance was evaluated as (circle one):

**SATISFACTORY**

**UNSATISFACTORY**

Evaluator's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Reason, if unsatisfactory:

Tools & Equipment:       None

Safety Considerations:   None

Comments:                 This is an Alternate path JPM

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: New HPSI JPM – version 2

JPM Title: HPSI Pump Operability Test (alternate path)

**INITIATING CUE:**                    **HPSI pump SI-2A was tagged out for breaker maintenance. The tag removal process has been completed and the CRS directs you the LO, to perform an operability check of the pump. The breaker is racked in and the 69 switch is red flagged. The EONA reports that the Pump is ready to start and the minimum recirculation valve is open. All prerequisites are met. START.**

CRITICAL STEP	ELEMENT	STANDARD
1. ____	Ensure Suction valve is Open	(AI-128) HCV-2927 key switch in OPEN and RED light lit
2. ____	Ensure SIRWT Tank Recirculation valves are open	(AI-30) HCV-385 and HCV-386 are open, RED lights lit
3. ____	Ensure HCV-2983 is closed	(AI-30) Switch in CLOSED position. GREEN light lit
4.* ____	Start HPSI pump SI-2A	(AI-30) Place SI-2A control switch in AFTER-START and RED light lit
5. ____	Monitor pump motor current	(AI-30) Current approximately 200 amps
		<b>NOTE: Simulator Operator ramps CCW cooling water valve, HCV-2810, closed</b>
6. ____	Operator Observes Alarm	(CB-1,2,3) Annunciator A1 B-3U "SI-2A BEARING COOLER NO FLOW"

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: New HPSI JPM – version 2

JPM Title: HPSI Pump Operability Test (alternate path)

CRITICAL STEP	ELEMENT	STANDARD
7*. ____	Trip SI-2A	(AI-30) Place SI-2A Control switch in AFTER-STOP , GREEN light lit  <b>CUE: EONA reports that HCV-2810 closed due to maintenance activity. HCV-2810 is now open. Shift Manager directs you to continue with the test.</b>
8. ____	Start HPSI Pump SI-2A	(AI-30) Place SI-2A control switch in AFTER-START and RED light lit  <b>CUE: 5 minutes have elapsed.</b>
9. ____	Trip SI-2A	(AI-30) Place SI-2A Control switch in AFTER-STOP , GREEN light lit  <b>CUE: STOP</b>

---

**Termination Criteria: HPSI pump manually tripped after loss of suction path**

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: : New HPSI JPM version 2

---

**INITIATING CUE:**

**HPSI pump SI-2A was tagged out for breaker maintenance. The tag removal process has been completed and the CRS directs you the LO, to perform an operability check of the pump. The breaker is racked in and the 69 switch is red flagged. The EONA reports that the Pump is ready to start and the minimum recirculation valve is open. All prerequisites are met. START.**

---

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: New PORV Test

JPM Title: PORV Exercise Test

Location: Control Room

Approximate Time: 10 minutes Actual Time: \_\_\_\_\_

Reference(s): OP-ST-RC-3004  
K/A 010 A4.03 ( RO 3.8 SRO 4.0 )

JPM Prepared by: Jerry Koske Date: 4/23/2001

JPM Reviewed by: \_\_\_\_\_ Date: \_\_\_\_\_

JPM Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: New PORV Test

JPM Title: PORV Exercise Test

Operators' Name: \_\_\_\_\_ Employee # \_\_\_\_\_

All Critical Steps (\*) must be performed or simulated in accordance with the standards contained in this JPM

The Operator's performance was evaluated as (circle one):

**SATISFACTORY**

**UNSATISFACTORY**

Evaluator's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Reason, if unsatisfactory:

Tools & Equipment:       None

Safety Considerations:   None

Comments:

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: New PORV Test

JPM Title: PORV Exercise Test

---

**INITIATING CUE:** The plant is transitioning from Hot Standby to Cold Shutdown. The RCS temperature is 325°F and the pressure is 400 psia. The Shift Manager has assigned you as the Dedicated Operator at CB-1/2/3 for the performance of Surveillance Test OP-ST-RC-3004 for PCV-102-1.

The pre-job briefing is complete. Some of the briefing items included:

- Test will cycle PORV and Pressurizer pressure will lower.
- Ensure RCP NPSH is maintained during test.
- Operators are stationed locally at HCV-151 and at its breaker.
- Test data shall be evaluated by System Engineer.
- Valve stroke times are determined electronically

All prerequisites are met. Steps 1 through 4 of Attachment 1 have been performed. Operators are stationed locally at HCV-151 and at its breaker. An I&C Tech is at FI-102-1. **START**

---

CRITICAL STEP	ELEMENT	STANDARD
1. ____	Record As found position of HCV-151	(CB-1/2/3) HCV-151 is CLOSED
2*. ____	Open HCV-151	(CB-1/2/3) HCV-151 Switch to OPEN
3. ____	Record As found position of PCV-102-1	(CB-1/2/3) PCV-102-1 is CLOSED
4. ____	Record Pressurizer level	(CB-1/2/3) Record level from LI-106 (51%)

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: New PORV Test

JPM Title: PORV Exercise Test

CRITICAL STEP	ELEMENT	STANDARD
5. ____	Record Quench Tank Level	(CB-1/2/3) Record level from LI-132 (74%)
6. ____	Record PORV discharge temperature	(CB-1/2/3) Record Temperature from TIA-134 (90°F)
7. ____	Start Chart Recorder	<b>CUE: I&amp;C has started chart recorder</b>
8*. ____	Open PCV-102-1	(CB-1/2/3) Key Switch HC-102-1 to OPEN
9. ____	Verify solenoid valve light indications	(CB-1/2/3) RED light ON. GREEN light OFF  <b>NOTE: I&amp;C Tech does not report reading on FI-102-1</b>
10*. ____	Close PCV-102-1	(CB-1/2/3) HC-102-1 in AUTO within 4 seconds of being opened. GREEN light lit, PORV OFF-AUTO annunciator is clear.  <b>CUE: I&amp;C reports that they did not get a 100% reading when the PORV was open (only the 0.01 LED lit). They now have a 0% reading on FI-102-1</b>

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: New PORV Test

JPM Title: PORV Exercise Test

CRITICAL STEP	ELEMENT	STANDARD
11. ____	Independent verification	Request Independent Verification that HC-102-1 is in AUTO  <b>CUE: HC-102-1 is in AUTO</b>
12. ____	Record Maximum Pressurizer Pressure	(CB-4) Record pressure from UR-105 or UR-115
13. ____	Record Pressurizer level	(CB-1/2/3) Record level from LI-106
14. ____	Record Quench Tank Level	(CB-1/2/3) Record level from LI-132
15. ____	Record PORV discharge temperature	(CB-1/2/3) Record Temperature from TIA-134  <b>CUE: STOP</b>

---

**Termination Criteria: Attachment 1 of OP-ST-RC-3004 is complete**

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: : New PORV Test

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**INITIATING CUE:** The plant is transitioning from Hot Standby to Cold Shutdown. The RCS temperature is 325°F and the pressure is 400 psia. The Shift Manager has assigned you as the Dedicated Operator at CB-1/2/3 for the performance of Surveillance Test OP-ST-RC-3004 for PCV-102-1.

The pre-job briefing is complete. Some of the briefing items included:

- Test will cycle PORV and Pressurizer pressure will lower.
- Ensure RCP NPSH is maintained during test.
- Operators are stationed locally at HCV-151 and at its breaker.
- Test data shall be evaluated by System Engineer.
- Valve stroke times are determined electronically

All prerequisites are met. Steps 1 through 4 of Attachment 1 have been performed. Operators are stationed locally at HCV-151 and at its breaker. An I&C Tech is at FI-102-1. **START**

---

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: JPM –0612 Modified AP

JPM Title: Start a Reactor Coolant Pump

Location: Control Room

Approximate Time: 5 minutes Actual Time: \_\_\_\_\_

Reference(s): OI-RC-9  
K/A 003 A2.01 ( RO 3.5 / SRO 3.9 )

JPM Prepared by: Jerry Koske Date: 4/20/2001

JPM Reviewed by: \_\_\_\_\_ Date: \_\_\_\_\_

JPM Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: JPM –0612 Modified AP

JPM Title: Start a Reactor Coolant Pump

Operators' Name: \_\_\_\_\_ Employee # \_\_\_\_\_

All Critical Steps (\*) must be performed or simulated in accordance with the standards contained in this JPM

The Operator's performance was evaluated as (circle one):

**SATISFACTORY**

**UNSATISFACTORY**

Evaluator's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Reason, if unsatisfactory:

Tools & Equipment:       None

Safety Considerations:   None

Comments:                 Alternate path JPM

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: JPM –0612 Modified AP

JPM Title: Start a Reactor Coolant Pump

**INITIATING CUE:** A plant startup is in progress. RC-3C is running. You are directed to place RC-3A in service. All prerequisites are met. **START**

CRITICAL STEP	ELEMENT	STANDARD
		<b>Simulator Operator fail 90% speed switch for RC-3A (COP JOB3111L=T)</b>
1. ____	Setup ERF Display for RC-3A	ERF Type [440] [DSP] RC-3A Page displays
2. ____	Station operator to respond to vibration alarms	<b>CUE: Operator is at AI-270</b>
3. ____	Verify controlled Bleed-off flow	ERF page 342 Verify positive bleed-off flow
4. ____	Ensure RCP NPSH	Use Figure TDB III.25
5. ____	Ensure 86/RC-3A reset	CB-1/2/3 86/RC-3A AMBER light lit
6. ____	Verify RCP Reverse rotation is cleared	CB-1/2/3 ANN A-6, D-5 clear
7.* ____	Start RC-3A oil lift pump	CB-1/2/3 RC-3A-1 in START and RED light lit.
8. ____	Verify AARD oil flow for RC-3A	ERF Page 342

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: JPM –0612 Modified AP

JPM Title: Start a Reactor Coolant Pump

CRITICAL STEP	ELEMENT	STANDARD
		<b>CUE: The oil lift pump has been running for two minutes</b>
9*. ____	Start RC-3A	CB-1/2/3 RC-3A CS in AFTER START and RED light lit
10. ____	Verify oil pump stops	CB-1/2/3 RC-3A-1 GREEN light lit
		<b>NOTE: Pump will not stop automatically and GREEN light will not come on due to 90% speed switch failure</b>
11*. ____	Trip RC-3A lift oil pump	CB-1/2/3 RC-3A-1 in STOP and GREEN light lit
12. ____	Monitor Amps	Ammeter on CB-1/2/3 drops below 425 amps within 17 seconds
13. ____	Verify Controlled Bleedoff flow	ERF Page 342
14. ____	Monitor RCP parameters	ERF Computer Display
		<b>CUE: STOP</b>

**Termination Criteria: RC-3A is running normally**

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: JPM –0612 Modified

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**INITIATING CUE:** A plant startup is in progress. RC-3C is running. You are directed to place RC-3A in service. All prerequisites are met. **START**

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Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: Updated JPM-0571

JPM Title: Adjust Narrow Range Safety Channel Nuclear Instrumentation

Location: Control Room

Approximate Time: 12 minutes Actual Time: \_\_\_\_\_

Reference(s): OP-ST RPS-005  
K/A 015 A1.01 ( RO 3.5 / SRO 3.8 )

JPM Prepared by: Jerry Koske Date: 4/19/2001

JPM Reviewed by: \_\_\_\_\_ Date: \_\_\_\_\_

JPM Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: Updated JPM-0571

JPM Title: Adjust Narrow Range Safety Channel Nuclear Instrumentation

Operators' Name: \_\_\_\_\_ Employee # \_\_\_\_\_

All Critical Steps (\*) must be performed or simulated in accordance with the standards contained in this JPM

The Operator's performance was evaluated as (circle one):

**SATISFACTORY**

**UNSATISFACTORY**

Evaluator's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Reason, if unsatisfactory:

Tools & Equipment:       None

Safety Considerations:

Comments:

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: Updated JPM-0571

JPM Title: Adjust Narrow Range Safety Channel Nuclear Instrumentation

**INITIATING CUE:** A deviation has been noted between NI power and  $\bar{N}T$  power on RPS Channel “A” with NI Power reading 98.8% and DT Power reading 100.9%. The STA reports that core power is 1498 Mw as indicated by a valid XC-105 calculation. The Shift Manager directs you to adjust Channel “A” RPS. Document this adjustment as you normally would with the exception of the official control room log. All prerequisites and initial conditions are met. **START**

CRITICAL STEP	ELEMENT	STANDARD
1. ____	Record % rated power on data Sheet	99.9% power recorded on data sheet
2. ____	Verify the scaling AMP offset is the same as the value shown on “A” channel linear power drawer.	<b>CUE: Use the value on the “A” channel drawer</b>
3. ____	Place RPSCIP DVM to Meter Input	(AI-31A) Select METER INPUT
4. ____	Check +10V	(AI-31A) Push +10V and verify value between 9.8V and 10.2V
5. ____	Check -10V	(AI-31A) Push -10V and verify value between -9.8V and -10.2V
6. ____	Check zero	(AI-31A) Push ZERO and verify value between –0.2V and +0.2V
7. ____	Obtain Trip Bypass Keys for Trip Units 1, 9 and 12	<b>CUE: Hand keys to candidate when he indicates he would request them from</b>

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: Updated JPM-0571

JPM Title: Adjust Narrow Range Safety Channel Nuclear Instrumentation

CRITICAL STEP	ELEMENT	STANDARD
<b>CRS</b>		
8*. ____	Bypass RPS Trip Units	Keys placed in Channel "A" Trip Units 1, 9, and 12, turned and YELLOW lights lit
9*. ____	Place RPSCIP DVM in Nuclear Power	Select NUCLEAR POWER
10*. ____	Adjust Calibrate Potentiometer	DVM Readout equals XC-105 Power plus the scaling amp offset
11*. ____	Place DVM selector switch to <b>DT</b> Power	Selector switch in <b>DT</b> Power position
13* ____	Adjust <b>DT</b> PWR Calibrate Potentiometer	Adjust <b>DT</b> PWR Calibrate Potentiometer until the NI- <b>DT</b> power sigma meter indicates zero.
14*. ____	Verify Trip Units not in Trip condition, then remove bypass keys	Verify no Trip lights lit, then remove keys from Trip Units 1, 9 and 12
15. ____	Complete filling in Data Sheet	Data Sheet Complete

**Termination Criteria: Channel "A" Safety Channel has been Calibrated.**

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: Updated JPM-0571

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**INITIATING CUE:** A deviation has been noted between NI power and ÑT power on RPS Channel “A” with NI Power reading 98.8% and DT Power reading 100.9%. The STA reports that core power is 1498 Mw as indicated by a valid XC-105 calculation. The Shift Manager directs you to adjust Channel “A” RPS. Document this adjustment as you normally would with the exception of the official control room log. All prerequisites and initial conditions are met. **START**

---

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: JPM-0392 AP

JPM Title: ESF Sequencer Surveillance Test

Location: Control Room

Approximate Time: 25 minutes Actual Time: \_\_\_\_\_

Reference(s): OP-ST-ESF-0022  
K/A 064 A3.07 ( RO 3.6 / SRO 3.7 )

JPM Prepared by: Jerry Koske Date: 4/23/2001

JPM Reviewed by: \_\_\_\_\_ Date: \_\_\_\_\_

JPM Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: JPM-0392 AP

JPM Title: ESF Sequencer Surveillance Test

Operators' Name: \_\_\_\_\_ Employee # \_\_\_\_\_

All Critical Steps (\*) must be performed or simulated in accordance with the standards contained in this JPM

The Operator's performance was evaluated as (circle one):

**SATISFACTORY**                      **UNSATISFACTORY**

Evaluator's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Reason, if unsatisfactory:

Tools & Equipment:            None

Safety Considerations:        None

Comments:

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: JPM-0392 AP

JPM Title: ESF Sequencer Surveillance Test

**INITIATING CUE:** The plant is operating at 100% power. You are an extra operator called in for this test. You have been directed to perform OP-ST-ESF-0022 for sequencer panel S1-2. The pre-job briefing and all prerequisites for OP-ST-ESF-0022 are met. **START**

CRITICAL STEP	ELEMENT	STANDARD
1. ____	Ensure Sequencer Mode switch in EMERGENCY STANDBY	(AI-30A) 43-1/S1-2 in EMERGENCY STANDBY
2*. ____	Place S1-2 Sequencer Isolation switch in OFF	(AI-30A) S1-2 switches in Attachment 1 Table in OFF, AMBER lights lit and “OFF SEQUENCER” annunciators in alarm
3*. ____	Place spray header test switches in TEST	(AI-30A/B) HCV-344 to test HCV-345 to test and WHITE lights lit
4. ____	Place HCV-344 switch in Override	(AI-30A) HC-344 in OVERRIDE position and “Spray Valve HCV-344 Header Isolated” annunciator in alarm
5. ____	Secure rad monitor sampling of containment per OI-RM-1: <ul style="list-style-type: none"> <li>• Obtain copy of OI-RM-1</li> <li>• Obtain RM Key</li> </ul>	Provide copy to operator Provide keys to operator

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: JPM-0392 AP

JPM Title: ESF Sequencer Surveillance Test

CRITICAL STEP	ELEMENT	STANDARD
	<ul style="list-style-type: none"> <li>• Ensure T.S. 2.1.4(4) is met</li> <li>• Place RM-050 in Keypad</li> <li>• Ensure TS requirements are met</li> <li>• Place RM-051 in Keypad</li> <li>• Place sample pump control switch to stop</li> <li>• Close Rad monitor Sample Isolation Valves:               <ul style="list-style-type: none"> <li>○ PCV-742E</li> <li>○ PCV-742G</li> <li>○ PCV-742F</li> <li>○ PCV-742H</li> </ul> </li> </ul>	<p><b>CUE: Tech Spec is met</b></p> <p>(AI-33A) Key switch in KEYPAD <b>CUE: Tech Specs are met</b></p> <p>Key Switch in KEYPAD</p> <p>RED light OFF, GREEN light ON, AMBER light ON</p> <p>(AI-44) Switches in CLOSE, RED lights OFF, GREEN lights ON</p>
6*. ____	Place RM-065 Sample Pump Control Switch in OFF	(AI-106A) HC-RM-065 in OFF and “RM-065 Control Room Iodine Loss of Control Power” Annunciator in alarm
7. ____	Verify Sequencer AUTO START Annunciator is clear	(AI-30A) Annunciator A-32 A-2 is NOT lit
8. ____	Verify SS1 is clear on ERF display Matrix	(ERF Terminal) SS1 is GREEN
9*. ____	Place Sequencer Computer Standby Switch in TIMERS position	(AI-30A) S1-2/CPTR switch in TIMERS “COMPUTER STANDBY TEST” annunciator in alarm
10*. ____	Place Sequencer AUTO START test switch in TEST	(AI-30A) S1-2/AS-TEST switch to TEST

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: JPM-0392 AP

JPM Title: ESF Sequencer Surveillance Test

CRITICAL STEP	ELEMENT	STANDARD
		position and TESTING annunciator in alarm
11. ____	Verify S1-2 Lock-Out Relays have tripped	(AI-30A) check 86-1/S1-2 Relay Tripped and AMBER light OFF check 86-2/S1-2 Relay tripped Verify "SEQUENCER AUTO START DEMAND" annunciator is lit ERF Computer Printout 86-1/SI-2 closed
12. ____	Verify SS1 is in alarm on ERF Matrix display	(ERF Terminal) SSI id RED
13* ____	Verify Sequencer timer operate lights	(AI-30A) Verify upper right light in matrix mimic
14. ____	Verify Timer Operate signals are received	ERF Computer Printer
15. ____	Verify Timers timed out	Begin to enter times in table per step 20  <b>NOTE: Simulator Operator inserts inadvertent VIAS</b>
16*. ____	Start RM-065 sample pump	(AI-106A) Place HC/RM-065 in AUTO  <b>CUE: The Shift Manager states that the VIAS was Inadvertent. He has his crew reset the VIAS and directs you to continue with the</b>

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: JPM-0392 AP

JPM Title: ESF Sequencer Surveillance Test

CRITICAL STEP	ELEMENT	STANDARD
		<b>test. (Simulator Operator reset VIAS)</b>
17. ____	May place HC/RM-065 back in OFF position	(AI-106A) HC/RM-065 in OFF
18. ____	Complete entering data in table	Table in step 20 filled out
19. ____	Ensure specified AI-30A annunciators are clear	CONTAINMENT SPRAY BACKUP COMMAND and VENTILATION ISOLATION BACKUP COMMAND annunciators CLEAR
20. ____	Verify CSAS and VIAS indications clear on ERF Matrix Display.	(ERF Terminal) CSAS and VIAS blocks GREEN
21. ____	Place S1-2/AS-TEST switch in NORMAL	(AI-30A) S1-2/AS-TEST in NORMAL
22. ____	Ensure TESTING annunciator is clear	(AI-30A,A32,B-3) NOT LIT
23. ____	Obtain Key for B1/CSAS Test switch	Provide key to candidate
24*. ____	S1-2/CPTR Computer Standby switch from TIMERS to OFF then to TIMERS	(AI-30A) S1-2 to OFF then to TIMERS
25*. ____	Place B1/CSAS in TEST	(AI-30A) B1/CSAS to TEST
26. ____	Verify 86-B1/CSAS lockout relays tripped	86 relays tripped with AMBER lights OFF. CONTAINMENT SPRAY BACKUP COMMAND annunciator LIT

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: JPM-0392 AP

JPM Title: ESF Sequencer Surveillance Test

CRITICAL STEP	ELEMENT	STANDARD
27. ____	Verify 86-B1/VIAS relay tripped	86 relays tripped with AMBER lights OFF. VENTILATION ISOLATION BACKUP COMMAND annunciator LIT
28. ____	Ensure TESTING 86B1/CSAS annunciator in alarm	AI-30A, A33-2, H-2 LIT
29. ____	Ensure CONTROL ROOM A/C SYSTEM VIAS LOCKED IN annunciator in alarm	AI-106A, A106A, C-3L LIT
30. ____	Verify CSAS ERF Matrix Display in Alarm	(ERF Display) CSAS block is RED
31. ____	Complete Data Table	Enter Timer Operate Light, Timer Operate Signal Computer and times in table
32*. ____	Place B1/CSAS test switch in NORMAL	(AI-30A) B1/CSAS-TEST in NORMAL
33. ____	Ensure TESTING 86B1/CSAS annunciator is clear	AI-30A, A33-2 H-2 NOT LIT
34*. ____	Reset Lockout Relays	86-1/S1-2 RESET 86-2/S1-2 RESET 86-B1/CSAS RESET 86-B1/VIAS RESET
35. ____	Ensure SEQUENCER AUTO STANDBY annunciator is in alarm	AI-30A, A-32, A-1 LIT
36. ____	Ensure annunciators are clear: <ul style="list-style-type: none"> <li>• SEQUENCER AUTO START DEMAND</li> <li>• CONTAINMENT SPRAY</li> </ul>	NOT LIT

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: JPM-0392 AP

JPM Title: ESF Sequencer Surveillance Test

CRITICAL STEP	ELEMENT	STANDARD
	BACKUP COMMAND <ul style="list-style-type: none"> <li>• VENTILATION ISOLATION BACKUP COMMAND</li> </ul>	
37*. ____	Place S1-2/CPTR computer standby switch in OFF	(AI-30A) S1-2/CPTR in OFF
38. ____	Ensure COMPUTER STANDBY TEST alarm is clear	AI-30A, A32, C-2
39*. ____	Place S1-2 Sequencer Isolation switches in ON and verify Timer Operate light is OFF and ON AUTO light comes ON.	All sequencer S1-2 isolation switches ON except for CA-1A and CA-1C. AMBER light ON.
40. ____	Ensure specified annunciators are clear: <ul style="list-style-type: none"> <li>• BUS 1A3 SAFEGUARDS OFF SEQUENCER</li> <li>• BUS 1B3A SAFEGUARDS OFF SEQUENCER</li> <li>• BUS 1B3B SAFEGUARDS OFF SEQUENCER</li> <li>• BUS 1B3C SAFEGUARDS OFF SEQUENCER</li> </ul>	NOT LIT
41*. ____	Place HC-344 CNTMT Spray valve control switch in AUTO	(AI-30A) HC-344 in AUTO
42. ____	Ensure SPRAY VALVE HCV-344 HEADER ISOLATED	AI-30A, A33-1 H-6 NOT LIT

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: JPM-0392 AP

JPM Title: ESF Sequencer Surveillance Test

CRITICAL STEP	ELEMENT	STANDARD
	annunciator is clear	
43*. ____	Place Containment Spray Valve test switches in OFF and verify white lights OFF	(AI-30A/B) HC-344/TEST in OFF HC-345/TEST in OFF WHITE lights OFF
44. ____	Ensure annunciators are clear: HCV-344/345 SET SPRAY PUMPS TEST PERMIT on both AI-30A and AI-30B	AI-30A, A33-1 H-5 CLEAR AI-30B A34-1 H-3 CLEAR
45*. ____	Reset VIAS	(AI-106A) Depress 94A/VIAS-RESET pushbutton
46. ____	Ensure CONTROL ROOM A/C SYSTEM VIAS LOCKED IN annunciator is clear	
47* ____	Place RM-050 and RM-051 back in service per OI-RM-1: <ul style="list-style-type: none"> <li>• Ensure Sample Control Switch in CNTMT</li> <li>• Open Rad monitor Sample Isolation Valves: <ul style="list-style-type: none"> <li>○ PCV-742E</li> <li>○ PCV-742G</li> <li>○ PCV-742F</li> <li>○ PCV-742H</li> </ul> </li> </ul> Place Pump Control Switch to START	(AI-33) Switch in CNTMT CNTMT RED light ON AMBER lights OFF CR GREEN light ON  (AI-44) Switch in OPEN, RED lights ON, GREEN lights OFF  GREEN light OFF AMBER light OFF RED light ON Sample flow 1.5 to 3.0 cfm

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: JPM-0392 AP

JPM Title: ESF Sequencer Surveillance Test

CRITICAL STEP	ELEMENT	STANDARD
	Place RM-050 Control Room ratemeter keyswitch to ON	<p><b>CUE: Setpoints have been verified</b></p> <p>Keyswitch in ON position</p>
	Place RM-051 ratemeter switch to ON	<p><b>CUE: Check Source test is complete. RM-051 setpoints have been verified.</b></p> <p>Keyswitch to ON</p> <p><b>CUE: Check source test complete</b></p>
48. ____	Place HC/RM-065 sample pump control switch to AUTO	<p>(AI-106A)            HC/RM-065 in AUTO            RM-065 CONTROL ROOM IODINE LOSS OF CONTROL POWER annunciator is CLEAR</p>
49. ____	Stop one of the Control Room AC Units	<p>(AI-106A or B)            VA-46A or VA-46B control switch to STOP then back to AUTO</p>

**Termination Criteria: The sequencer test has been completed.**

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: JPM-0392 AP

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**INITIATING CUE:** The plant is operating at 100% power. You are an extra operator called in for this test. You have been directed to perform OP-ST-ESF-0022 for sequencer panel S1-2. The pre-job briefing and all prerequisites for OP-ST-ESF-0022 are met. **START**

---

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: JPM-0304

JPM Title: Minimizing DC Loads [ Time Critical JPM ]

Location:                      Switchgear Room and Turbine Building

Approximate Time: 15 Minutes              Actual Time: \_\_\_\_\_

Reference(s): EOP/AOP Attachment 6  
K/A 063 A1.01 ( RO 2.5\* / SRO 3.3\*)  
\* Note: FCS IPE identifies this as a risk significant operator  
action. Therefore, the FCS Importance Factors should be higher  
that the Generic PWR Importance Factors.

JPM Prepared by:     Jerry Koske                          Date:     4/20/2001    

JPM Reviewed by: \_\_\_\_\_                      Date: \_\_\_\_\_

JPM Approved by: \_\_\_\_\_                      Date: \_\_\_\_\_

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: JPM-0304

JPM Title: Minimizing DC Loads [ Time Critical JPM ]

Operators' Name: \_\_\_\_\_ Employee # \_\_\_\_\_

All Critical Steps (\*) must be performed or simulated in accordance with the standards contained in this JPM

The Operator's performance was evaluated as (circle one):

**SATISFACTORY**

**UNSATISFACTORY**

Evaluator's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Reason, if unsatisfactory:

Tools & Equipment:       None

Safety Considerations:   None

Comments:                 This is a Time Critical JPM

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: JPM-0304

JPM Title: Minimizing DC Loads [ Time Critical JPM ]

**INITIATING CUE:** The plant has tripped due to a station blackout event. The CRS has directed you to Minimize DC Loads using EOP/AOP Attachment 6. **START**

CRITICAL STEP	ELEMENT	STANDARD
		<b>EXAMINER NOTE START TIME</b>
1*. ____	Place BOTH of the following Breakers in OFF: <ul style="list-style-type: none"> <li>• Computer 400 Cycle Cabinet</li> <li>• Emergency Lighting PNL Transfer Switch in OFF</li> </ul>	(Switchgear Room) DC Bus 2  EE-8G-CB12 to OFF EE-8G-CB8 to OFF
2*. ____	Place Emer Lighting PNL Transfer Switch in OFF	(Switchgear Room) DC Bus 1  EE-8F-CB-11 to OFF
3*. ____	Place Emerg Lighting at Panel NO 5 in OFF	(Turbine Building West Wall)  Breaker #15 to OFF
		<b>Elapsed time must be 15 minutes or less</b>

**Note: The remainder of this JPM is performed in the Control Room and is not time critical.**

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: JPM-0304

JPM Title: Minimizing DC Loads [ Time Critical JPM ]

CRITICAL STEP	ELEMENT	STANDARD
		<b>CUE: The turbine has stopped rolling</b>
4*. _____	Stop LO-4, DC Oil Pump	(CB-10,11) LO-4 Control Switch in Pull-Out, RED and GREEN lights OFF.
		<b>CUE: Two hours have elapsed</b>
5. _____	Ensure the following are closed: <ul style="list-style-type: none"> <li>• Main Disconnect I1 -1</li> <li>• Circuit #1 AI-53 Feed</li> </ul>	(AI-42A)  Switches in CLOSED position
6*. _____	Place ALL of the following breakers in OFF: <ul style="list-style-type: none"> <li>• Circuit #2 AI-56 Feed</li> <li>• Circuit #3 AI-100 Feed</li> <li>• Circuit #4 IB -1A Feed</li> <li>• Circuit #5 CB-10,11 Feed</li> <li>• Circuit #8 AI-195 Feed</li> <li>• Circuit #9 AI-44 Feed</li> <li>• Circuit #10 AI-58 &amp; AI-59 Feed</li> <li>• Circuit #11 CB-20 Feed</li> <li>• Circuit #12 AI-42 &amp; AI-60 Feed</li> <li>• Circuit #13 CB-4 Feed</li> <li>• Circuit #18 AI-43A &amp; AI-33C Feed</li> </ul>	(AI-42A)  Breakers in OFF

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: JPM-0304

JPM Title: Minimizing DC Loads [ Time Critical JPM ]

CRITICAL STEP	ELEMENT	STANDARD
7. ____	Ensure Both of the following breakers are closed: <ul style="list-style-type: none"> <li>• Main Disconnect I2-1</li> <li>• Circuit #1 AI-53 Feed</li> </ul>	(AI-42B) Switches in CLOSED position
8*. ____	Place all of the following breakers in OFF: <ul style="list-style-type: none"> <li>• Circuit #2 AI-50 Feed</li> <li>• Circuit #3 AI-105 &amp; AI-107 Feed</li> <li>• Circuit #4 AI-55 Feed</li> <li>• Circuit #5 AI-101B Feed</li> <li>• Circuit #6 IB -2A Feed</li> <li>• Circuit #7 CB-10,11 Feed</li> <li>• Circuit #8 Nuclear Emergency Feed</li> <li>• Circuit #9 CB-4 Feed</li> <li>• Circuit #10 Fire Emergency Feed</li> <li>• Circuit #11 AI-44 Feed</li> <li>• Circuit #12 AI-187 Feed</li> <li>• Circuit #13 CB-1,2,3 Feed</li> <li>• Circuit #14 AI-195 Feed</li> <li>• Circuit #15 PC Punp Vibr. Sys</li> <li>• Circuit #16 AI-43A &amp; AI-65B Feed</li> <li>• Circuit #17 CB-20 Feed</li> </ul>	(AI-42B) All listed breakers in OFF
9*. ____	Stop LO-12B, DC Seal Oil Pump	(CB-10,11) LO-12B switch in Pull OUT, GREEN and RED lights OFF

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: JPM-0304

JPM Title: Minimizing DC Loads [ Time Critical JPM ]

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**Termination Criteria: DC Loads have been minimized.**

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: JPM-0304

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**INITIATING CUE:** The plant has tripped due to a station blackout event.  
The CRS has directed you to Minimize DC Loads using  
EOP/AOP Attachment 6. **START**

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Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: JPM-010 revised

JPM Title: Provide Raw Water backup cooling to Containment Coolers

Location: Room 69

Approximate Time: 10 minutes Actual Time: \_\_\_\_\_

Reference(s): AOP-11  
K/A 008 K1.01 ( RO 4.1 / SRO 4.2 )

JPM Prepared by: Jerry Koske Date: 4/20/2001

JPM Reviewed by: \_\_\_\_\_ Date: \_\_\_\_\_

JPM Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: JPM-010 revised

JPM Title: Provide Raw Water backup cooling to Containment Coolers

Operators' Name: \_\_\_\_\_ Employee # \_\_\_\_\_

All Critical Steps (\*) must be performed or simulated in accordance with the standards contained in this JPM

The Operator's performance was evaluated as (circle one):

**SATISFACTORY**

**UNSATISFACTORY**

Evaluator's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Reason, if unsatisfactory:

Tools & Equipment:       None

Safety Considerations:   This JPM requires entry into the RCA

Comments:

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: JPM-010 revised

JPM Title: Provide Raw Water backup cooling to Containment Coolers

**INITIATING CUE:** The reactor has tripped from full power. A total loss of all CCW pumps has occurred. You are directed, by the CRS, to establish Raw water Backup to containment cooling per AOP-11. VA-3A and VA-3B are both in operation. **START**

CRITICAL STEP	ELEMENT	STANDARD
1. ____	Obtain copy of AOP-11	<b>Cue: Provide copy of AOP-11.</b>
2. ____	Place switch HCV-400B/D in close	<b>CUE: RO reports that HCV-400B/D is in CLOSE</b>
3* ____	Unlock and release hand-jacks from both RW interface valves for VA-1A	(room 69) Valves unlocked and handjacks released on BOTH HCV-400E and HCV-400F
4.* ____	Open both VA-1A Raw Water interface valves	(room 69) IA-HCV-400E-TV 4-way manual control valve in OPEN  IA-HCV-400F-TV 4-way manual control valve in OPEN
5. ____	Place switch HCV-401B/D in close	<b>CUE: RO reports that HCV-401B/D is in CLOSE</b>
6* ____	Unlock and release hand-jacks from both RW interface valves for VA-1B	(room 69) Valves unlocked and handjacks released on BOTH HCV-401E and HCV-401F

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: JPM-010 revised

JPM Title: Provide Raw Water backup cooling to Containment Coolers

CRITICAL STEP	ELEMENT	STANDARD
7.* _____	Open both VA-1B Raw Water interface valves	(room 69) IA-HCV-401E-TV 4-way manual control valve in OPEN  IA-HCV-401F-TV 4-way manual control valve in OPEN

**CUE: STOP**

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**Termination Criteria: Raw Water Backup Cooling provided to VA-1A and VA-1B**

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: JPM-010 revised

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**INITIATING CUE:** The reactor has tripped from full power. A total loss of all CCW pumps has occurred. You are directed, by the CRS, to establish Raw water Backup to containment cooling per AOP-11. VA-3A and VA-3B are both in operation. **START**

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Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: JPM-101MOD

JPM Title: Filling EFWST with FW-54

Location: Room-81 and FW-54 Pump Room

Approximate Time: 20 minutes Actual Time: \_\_\_\_\_

Reference(s): OI-AFW-4  
K/A 061 K4.01 ( RO 4.1 / SRO-4.2 )

JPM Prepared by: Jerry Koske Date: 4/19/2001

JPM Reviewed by: \_\_\_\_\_ Date: \_\_\_\_\_

JPM Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: JPM-101MOD

JPM Title: Filling EFWST with FW-54

Operators' Name: \_\_\_\_\_ Employee # \_\_\_\_\_

All Critical Steps (\*) must be performed or simulated in accordance with the standards contained in this JPM

The Operator's performance was evaluated as (circle one):

**SATISFACTORY**                      **UNSATISFACTORY**

Evaluator's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Reason, if unsatisfactory:

Tools & Equipment:            None

Safety Considerations:        None

Comments:

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: JPM-101MOD

JPM Title: Filling EFWST with FW-54

**INITIATING CUE: Following a loss of feedwater event, you are directed to fill the EFWST using FW-54 per OI-AFW-4, Attachment 7. You are to locally start FW-54 and shutdown FW-54 when you have finished filling the EFWST. START**

CRITICAL STEP	ELEMENT	STANDARD
1*. ____	Close FW-170	(room 81) Unlock and Close FW-170
2*. ____	Ensure FW-1017 is open	(pump room) FW-1017 OPEN
3*. ____	Throttle EFWST fill valve open	(room 81) Open FW-1049 one turn
4*. ____	Place HC/FW-54-1 in STOP	(AI-114) HC/FW-54-1 in STOP
5*. ____	Place 43/FW control Transfer switch in RESET then in LOCAL	(AI-114) 43/FW in RESET then in LOCAL
6*. ____	Place HC/FW-54-1 in RUN	(AI-114) HC/FW-54-1 in RUN
7. ____	Control fill rate	(room 81) Throttle FW-1049 to control feed to EFWST
8. ____	Fill EFWST to desired level	<b>CUE: EFWST is full</b>

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: JPM-101MOD

JPM Title: Filling EFWST with FW-54

CRITICAL STEP	ELEMENT	STANDARD
9*. ____	Close and lock FW-1049	(room 81) Close FW-1049 and install lock
10*. ____	Shutdown FW-54	(AI-114) <ul style="list-style-type: none"> <li>• Place HC/FW-54-1 in STOP</li> <li>• Place 43/FW-54 in REMOTE</li> <li>• Place HC/FW-54-1 in RUN</li> <li>• Place 43/FW-56 in EMERGENCY STANDBY</li> </ul>
11*. ____	Open and lock FW-170	(room 81)  OPEN FW-170 and install lock
<b>CUE: STOP</b>		

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**Termination Criteria: EFWST is filled and FW-54 is aligned for service**

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: JPM-101MOD

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**INITIATING CUE:** Following a loss of feedwater event, you are directed to fill the EFWST using FW-54 per OI-AFW-4, Attachment 7. You are to locally start FW-54 and shutdown FW-54 when you have finished filling the EFWST. **START**

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Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: JPM-027

JPM Title: Waste Gas Incident

Location: Control Room

Approximate Time: 15 minutes Actual Time: \_\_\_\_\_

Reference(s): AOP-09  
OI-CH-1  
T.S. 2.9  
K/A 071 A3.03 (RO 3.6 / SRO 3.8)

JPM Prepared by: Jerry Koske Date: 4/20/2001

JPM Reviewed by: \_\_\_\_\_ Date: \_\_\_\_\_

JPM Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: JPM-027

JPM Title: Waste Gas Incident

Operators' Name: \_\_\_\_\_ Employee # \_\_\_\_\_

All Critical Steps (\*) must be performed or simulated in accordance with the standards contained in this JPM

The Operator's performance was evaluated as (circle one):

**SATISFACTORY**

**UNSATISFACTORY**

Evaluator's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Reason, if unsatisfactory:

Tools & Equipment:       None

Safety Considerations:   None

Comments:                 This is a static JPM Only

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: JPM-027

JPM Title: Waste Gas Incident

**INITIATING CUE:** The plant is at 100% power. The ERF computer is Out of Service. High Radiation Alarms on AI-33C annunciate and you observe the following Process and Area Radiation Monitor Indications:

**RM-062, Stack gas monitor is in “High” Alarm.  
 There are no area monitors in alarm**

**Waste Monitor Tank WD-22B is being released. VIAS has actuated. You, an SRO, have taken over the boards so the RO can meet with the Operations Manager. Take the appropriate actions.**

CRITICAL STEP	ELEMENT	STANDARD
1. ____	Enter AOP-09.	Obtains copy of AOP-09 and enters it
2. ____	Announce evacuation instructions over the Gaitronics	Use AOP-09 announcement
3. ____	Notify the on-duty radiation Protection Technician.	Contacts RP Tech
4. ____	Direct the Shift Chemist to terminate primary sampling.	Call Shift Chemist
5*. ____	Terminate Radioactive Release	Directs EONA to terminate Monitor Tank release  <b>CUE: EONA reports Monitor Tank release has been terminated.</b>
6. ____	Implement Emergency Plan	<b>Cue: Shift Manager is performing the Emergency Plan</b>

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: JPM-027

JPM Title: Waste Gas Incident

CRITICAL STEP	ELEMENT	STANDARD
7. ____	Verify Pressurizer level trend is normal	<b>Cue: Pressurizer level is 60% and steady</b>
8. ____	Verify VCT level is normal	<b>Cue: VCT level is steady</b>
9*. ____	Shutdown AB Supply fans.	(AI-44) Control switches to stop for VA-35A and B, verify GREEN lights lit
10* ____	Ensure one (and only one) exhaust fan running	(AI-44) VA-40 A ,B or C in operation and RED light lit. Other fans are in OFF with GREEN lights lit
11. ____	Ensure railroad siding door closed.	Directs EONA to ensure railroad siding door closed.  <b>Cue: EONA reports railroad siding door closed.</b>
12. ____	Place VA- 26A and B and VA-27 in ‘Pull-To-Filter”	(AI-44) Control switches taken to “Pull Stop” with a BLACK flag
13. ____	Close Supply and Exhaust dampers for AB rooms: <ul style="list-style-type: none"> <li>• HCV-799A/B</li> <li>• HCV-794A/B</li> <li>• HCV-793A/B</li> <li>• HCV-792A/B</li> <li>• HCV-791A/B</li> <li>• HCV-790A/B</li> <li>• HCV-802A/B</li> <li>• HCV-801A/B</li> <li>• HCV-800A/B</li> <li>• HCV-797A/B</li> <li>• HCV-796A/B</li> </ul>	(AI-44) Select Closed on all listed Dampers and verify GREEN lights lit

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: JPM-027

JPM Title: Waste Gas Incident

CRITICAL STEP	ELEMENT	STANDARD
	<ul style="list-style-type: none"> <li>• HCV-818A/B</li> <li>• HCV-817A/B</li> <li>• HCV-811A/B</li> <li>• HCV-809A/B</li> <li>• HCV-808A/B</li> <li>• HCV-807A/B</li> <li>• HCV-806A/B</li> <li>• HCV-819A/B</li> <li>• HCV-810A/B</li> <li>• HCV-798</li> <li>• HCV-816A/B</li> <li>• HCV-815A/B</li> <li>• HCV-814A/B</li> <li>• HCV-813A/B</li> <li>• HCV-812A/B</li> </ul>	
		<b>Cue: RM-062 readings are lowering.</b>
14. _____	Open dampers in sequence to identify affected compartment	(AI-44) Select OPEN on dampers and verify RED lights lit  <b>CUE: When dampers HCV-792A/B are opened, RM-062 readings are rising</b>
15*. _____	Isolate affected compartment	(AI-44) Select CLOSED on dampers HCV-792A/B and verify Green lights lit  <b>CUE: RM-062 readings are lowering</b>
16. _____	Open the remainder of the compartment ventilation dampers	(AI-44) Select OPEN on dampers and verify RED lights lit

Fort Calhoun Station – Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No: JPM-027

JPM Title: Waste Gas Incident

CRITICAL STEP	ELEMENT	STANDARD
		<b>CUE: Rm-062 readings are lowering</b>
		<b>CUE: STOP</b>

**Termination Criteria: Affected Compartment has been isolated**

JPM No: JPM-027

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**INITIATING CUE:** The plant is at 100% power. The ERF computer is Out of Service. High Radiation Alarms on AI-33C annunciate and you observe the following Process and Area Radiation Monitor Indications:

**RM-062, Stack gas monitor is in “High” Alarm.  
There are no area monitors in alarm**

**Waste Monitor Tank WD-22B is being released. VIAS has actuated. You, an SRO, have taken over the boards so the RO can meet with the Operations Manager. Take the appropriate actions.**

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Facility: Fort Calhoun Scenario No.: 1 Op-Test No.: \_\_\_\_\_

Examiners: \_\_\_\_\_ Operators: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Objectives: Evaluate crew response to a dropped rod requiring a power reduction complicated by loss of the normal (for this evolution) boration path and requiring manual S/G level control. Evaluate crew response to an excessive steam demand event following an inadvertent SGIS.

Initial Conditions: (IC#2) 100% power. D/G-2 tagged out of service for brush replacement. Expected back in 4 hours.

Turnover: Boron Concentration = 585 ppm. Raw Water pumps should be rotated for maintenance. (Start C Stop A)

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	N(PRI)	Rotate running Raw Water pumps
2 (6 min)	COP T:F908	I(SEC)	S/G steam flow transmitter FT-908 fails low - manual feedwater level control required (15 sec ramp)
3 (11 min)	COP T:T122H4	I(PRI)	hot leg temperature transmitter fails high
4 (19 min)	MFP CRD06	C(ALL)	Dropped control rod (rod #1)
5	N/A	R/N (ALL)	required power reduction to 70%
6 PRESET	COP RBAL2183	C(PRI)	LCV-218-3 will not open
7 (39 min)	COP T:P210	I(PRI)	PIC-210 transmitter (letdown backpressure) fails low
8 (44 min)	MFP ESF06B	C (ALL)	Inadvertent Steam Generator Isolation Signal
9 (Trg on trip)	MSS02A MSS02B	M(ALL)	S/G safety valve fails open following SGIS















Op-Test No.: \_\_\_\_\_ Scenario No.: 1 Event No.: 9 Page 9 of 9Event Description: S/G safety valve fails open following SGIS

Time	Position	Applicant's Actions or Behavior
	SRO	Provide EOP-05 floating steps to PRI and SEC
	PRI	Report approach to PPLS
	SRO	Direct PRI to ensure proper actuation of ESF
	PRI	Ensure SI flow is maximized
	PRI	Trip 1 RCP in each loop if RCS pressure reaches 1350 psia
	SRO	Direct PRI to ensure Emergency Boration (Will need to have EONA reclose LCV-218-3)
	PRI	Ensure Emergency Boration (Will need to have EONA reclose LCV-218-3)
	SRO	Direct SEC to establish AFW flow to good S/G
	SEC	Establish AFW flow to good S/G
	SEC	Identify affected S/G (perform 16A,B,C of EOP-05)
	SRO <C>	Direct SEC to isolate AFW flow to affected S/G
	SEC <C>	Isolate affected S/G
	SRO <C>	Direct SEC to establish steaming from good S/G prior to dry out of affected S/G (does not exceed 200°F subcooling)
	SEC <C>	Begin steaming from good S/G before affected S/G dries out (does not exceed 200°F subcooling)
	PRI	Report when "HPSI stop and throttle" criteria is met
	SRO <C>	Direct PRI to perform "HPSI stop and throttle"
	PRI <C>	Perform "HPSI stop and throttle"
	SRO/PRI	Ensure "Stop and Throttle criteria continues to be met"
	SRO	Direct PRI to control charging flow and reestablish letdown if needed to control RCS temperature and pressure
	PRI	Control charging/ reestablish letdown if required
	<b>END</b>	<b>Scenario ends with HPSI stop and throttle and RCS pressure and temperature under control</b>

Facility: Fort Calhoun Scenario No.: 2 Op-Test No.: \_\_\_\_\_

Examiners: \_\_\_\_\_ Operators: \_\_\_\_\_

Objectives: Evaluate crew=s response to interfacing system LOCA (IPE risk significant event) requiring reactor trip, isolation of cooling water to RCP=s, natural circulation and loss of CCW.

Initial Conditions: (IC#5) Plant at 80% power. ERF computer is inoperable. (SFC – ERF Down) FW-10 tagged OOS for oil change, RCS Activity high due to leaking fuel. (Xe-133 = 10.0  $\mu$ Ci/cc)

Turnover: Boron Concentration = 617 ppm Place second charging pump (CH-1A) in operation for RCS activity control. The packing cooling pump for CH-1A has been running for 30 minutes.

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	N(PRI)	Place second charging pump (CH-1A) in operation
2 (trg CH-1A start)	MFP CVC16B	C(PRI)	Discharge to suction relief valve on CH-1B - fails open causing loss of charging flow
3 (15 min)	COP T:P910	I(SEC)	PIC-910 fails high causing turbine bypass valve to open
4 (25 min)	MFP NIS07C	I(PRI)	Power Range NI Channel AC@ fails (loss of voltage)
5 (33 min)	COP T:P103X	I(PRI)	Controlling Pressurizer Pressure channel fails high
6 (38 min)	COP NBWPAC 9A	C(SEC)	Running TPCW pump trips - must manually start other pump
7 (43 min)	MFP NIS07B	I(PRI)	Power Range NI Channel AB@ fails (loss of voltage)
8	N/A	R(PRI) N(SEC)	Required power reduction to 70%
9 (63 min)	MFP RCP02B	M(ALL)	RCP seal cooler leak - Interfacing LOCA to CCW.
10 (60" surge)	MFP CCW01B	M(ALL)	CCW surge tank ruptures - Loss of CCW

















Event Description: RCP seal cooler leak - Interfacing LOCA to CCW.

Time	Position	Applicant's Actions or Behavior
	PRI	Respond to "Water from Seal Cooler RC-3B Seal Cooler Temperature High" alarm
	PRI	Identify and communicate lowering of pressurizer level and pressure
	PRI	Report RM-053 in alarm (CCW Hi Rad)
	SRO <C>	Direct PRI to trip the Reactor, trip the RCPs and close HCV-438A/B/C/D (per ARP)
	PRI <C>	Trip the Reactor, the RCPs and attempt to close HCV-438/A/B/C/D
	PRI	Report that HCV-438C and HCV-438D did not close
	SRO, PRI	Direct EONA to close HCV-438D
	SRO	Direct Operators to perform Standard Post Trip Actions
	PRI	Perform Standard Post Trip Actions Report lowering trend in pressurizer level and pressure
	SEC	Perform Standard Post Trip Actions Report containment parameters as normal
	SRO <C>	Transition to EOP-03 (LOCA) or EOP-20 after diagnostics
	SRO	Provide Operators with EOP-03 or EOP-20 floating steps and direct them to monitor
	SRO	Direct primary to ensure emergency boration and adequate SI flow
	PRI	Verifies emergency boration and SI flow
	SRO	Direct PRI to verify CCW/RW operation
	PRI	Verify CCW/RW operation
	SRO	Direct PRI to check for PORV/Safety valve leak
	PRI	Report no leakage
	SRO	Direct PRI to verify development of natural circulation
	PRI	Verify development of Natural Circulation
	SRO	Direct SEC to minimize AB ventilation flow and ensure railroad siding rollup door closed
	SEC	Minimize AB ventilation flow and ensure rollup door closed
	SRO	Direct PRI and SEC to begin plant cooldown
	SEC	Begin plant cooldown using EOP-03 or EOP-20, HR-3 (block SGIS not PPLS)
	PRI	Monitor plant parameters



Facility: Fort Calhoun Scenario No.: 3 Op-Test No.: \_\_\_\_\_

Examiners: \_\_\_\_\_ Operators: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Objectives: Evaluate crew response to emergency shutdown required by S/G tube leakage complicated by instrument failures. Evaluate response to a PORV LOCA with power available to only one bus.

Initial Conditions: (IC#2)100% reactor power, D/G 2 tagged out of service

Turnover: Boron concentration = 585 ppm. Place VA-7D in service and remove VA-3B from service for maintenance

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	N(PRI)	Remove VA-3B from service and place VA-7D in service
2 (7 min)	COP T:T2897	I(PRI)	Letdown HX CCW outlet temperature fails low
3 (12 min)	MFP SGN01B	C(ALL)	Steam Generator Tube leak – RC-2B (2%)
4	N/A	R(PRI) N(SEC)	AOP-5 Emergency shutdown
5 (35 min)	COP T:L101X	I(PRI)	Controlling pressurizer level channel fails low
6 (40 min)	COP RCAF3U 1 RCAF3U 2	I(SEC)	Instrument Air Compressor Loader Valves Fail
7 (44 min)	MFP EDS11A EDS11B	M(All)	Loss of Offsite Power
8 (trg on trip)	COP RRCP10 21	C/M (ALL)	PORV Fails Open on trip - No power to block valve
9 PRESET	MFP ESF05A ESF05B	C(PRI)	PPLS fails to actuate



















Facility: <u>Fort Calhoun</u> Scenario No.: <u>4 (Spare)</u> Op-Test No.: _____			
Examiners: _____ Operators: _____			
_____			
_____			
Objectives: Evaluate crew response to various instrument failures followed by a sequence of events leading to a total loss of feedwater. Operator action designated as risk-significant in the IPE is required in this scenario.			
Initial Conditions: (IC#7) (50%) reactor power, FW-10 OOS. A Group AA@ rod dropped. Charging and letdown have been isolated for repair on letdown line.			
Turnover: Letdown line repair is complete. A blown fuse was replaced on supply to clutch. Reestablish normal charging and letdown flow. Then, recover dropped rod. Maintain 50% power.			
Event No.	Malf. No.	Event Type*	Event Description
1	N/A	N(RO)	Establish normal charging and letdown.
2	N/A	R(RO)	Recover dropped rod
3	NIS02D	I(RO)	Loss of source/wide range NI channel AD@
4	JLB218 LL	I(RO)	VCT level fails low causing charging pump suction to realign to SIRWT
5	T:906Y	I(SEC)	Steam Generator level transmitter 906Y fails high
6	EDS01 1A/B	M(ALL)	Loss of Offsite Power
7	RWS10 A	C(RO)	Raw water pump AC-10A breaker fails to open.
8	NAFPF W54	C(SEC)	FW-54 fails to start (Total loss of feedwater)

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













