

FORT CALHOUN STATION

DRAFT EXAM

(To be conducted June, 2001)

This draft operating exam was prepared in accordance with the revised outline. No changes were made to any of the K/A items listed in that outline.

The Operating exam consists of 5 RO administrative JPMs, 5 SRO administrative JPMs, 12 Operational JPMs and four simulator scenarios.

The operating exam is as presented in the revised outline except for some minor changes to some instrument failures that were made to enhance one of the scenarios. The scenario events have been validated for simulator response but have not yet been validated with an operating crew.

Please withhold these materials from public disclosure until after the examinations are complete.

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 a 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>CUE: STOP</b>

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**Termination Criteria: Log entries complete and question 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.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:   This JPM requires entry into the RCA

Comments:                 Performed along with JPM that requires entry into  
RCA

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

JPM No: RO ADM JPM A.3

JPM Title: RCA Entry and Exit

**INITIATING CUE: During performance of the In Plant JPMs, you will be required to enter and exit the RCA. You must demonstrate proper entry and exit techniques.**

CRITICAL STEP	ELEMENT	STANDARD
1*.____	Review RWP	Reads RWP
2. ____	Check Survey maps	Checks survey maps for radiological conditions in areas to be entered.
3*.____	Obtain 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.____	Inform RP personnel about the nature of RCA entry	Tell RP at access control where you are going and what you will be doing
6.____	Enter RCA	RCA entered
7*.____	Comply with RWP and all postings within RCA	No violation of posted requirements
8*. ____	Monitor for personnel contamination prior to exiting	Monitor for contamination using PCM
9*.____	Sign out of RCA	Insert EAD in reader, enter PID number and confirm dose

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

JPM No: RO ADM JPM A.3

JPM Title: RCA Entry and Exit

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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:** During performance of the In Plant JPMs, you will be required to enter and exit the RCA. You must demonstrate proper entry and exit techniques.

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

JPM No: RO ADM JPM A.4

JPM Title: Escort during Emergency Plan Declaration

Approximate Time: 10 minutes

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

Reference(s): GET Training

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: Escort during Emergency Plan Declaration

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:                 Performed along with in plant JPMs

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

JPM No: RO ADM JPM A.4

JPM Title: Escort during Emergency Plan Declaration

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**INITIATING CUE:** You are escorting the examiner during a plant tour. The Shift Manager makes an announcement over the Gaitronics that an Alert has been declared

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CRITICAL STEP	ELEMENT	STANDARD
1.____	Inform the escorted individual that he must leave the plant due to a plant event	Tell escorted individual he must leave the plant
2*.____	Escort individual to the turnstyle	Escorts individual to turnstyle. Ensures he cards in and walks through turnstyle  <b>Question: How does an Alert rank in the order of severity of emergency event classes.</b>
3.____	Answer question	An Alert is the third most severe out of the four classes of events

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**Termination Criteria:** Examiner has exited turnstyle

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

JPM No: RO ADM JPM A.4

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**INITIATING CUE:** You are escorting the examiner during a plant tour. The Shift Manager makes an announcement over the Gaitronics that an Alert has been declared

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

JPM No: RO ADM JPM A.4

**Question: How does an Alert rank in the order of severity of emergency event classes.**

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, 8.6 mCi/g Xe-133, 0.05 mCi/g DEI-131, 875 ppm boron. RM-057 is reading 13000 with no trend. 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
7*. _____	Determine desired blowdown operation	Blowdown should be isolated

**CUE: STOP**

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

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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, 8.6 mCi/g Xe-133, 0.05 mCi/g DEI-131, 875 ppm boron. RM-057 is reading 13000 with no trend. 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

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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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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**

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

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

JPM No: SRO ADM JPM A.1.2

---

**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

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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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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>

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**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: RCA Entry and Exit with inoperable PCMs

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: SRO ADM JPM A.3

JPM Title: RCA Entry and Exit with inoperable PCMs

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: Performed along with JPM that requires entry into RCA

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

JPM No: SRO ADM JPM A.3

JPM Title: RCA Entry and Exit with inoperable PCMs

**INITIATING CUE: During performance of the In Plant JPMs, you will be required to enter and exit the RCA. You must demonstrate proper entry and exit techniques.**

CRITICAL STEP	ELEMENT	STANDARD
1*.____	Review RWP	Reads RWP
2. ____	Check Survey maps	Checks survey maps for radiological conditions in areas to be entered.
3*.____	Obtain 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.____	Inform RP personnel about the nature of RCA entry	Tell RP at access control where you are going and what you will be doing
6.____	Enter RCA	RCA entered
7*.____	Comply with RWP and all postings within RCA	No violation of posted requirements
8. ____	Monitor for personnel contamination prior to exiting	Monitor for contamination using PCM
		<b>CUE: Assume that all PCMs are Inoperable</b>

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

JPM No: SRO ADM JPM A.3

JPM Title: RCA Entry and Exit with inoperable PCMs

CRITICAL STEP	ELEMENT	STANDARD
9*.____	Check contamination using Frisker	Uses frisker to check for contamination on hands and feet  <b>CUE: Frisker shows contamination on right foot</b>
10*.____	Contact RP	Contacts RP
11*.____	Sign out of RCA	Insert EAD in reader, enter PID number and confirm dose

**Termination Criteria: RCA has been exited**

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

JPM No: SRO ADM JPM A.3

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**INITIATING CUE:** During performance of the In Plant JPMs, you will be required to enter and exit the RCA. You must demonstrate proper entry and exit techniques.

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

JPM No: SRO ADM JPM A.3

**CUE: Assume that all PCMs are Inoperable**

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

JPM No: SRO ADM JPM A.3

**CUE: Frisker shows contamination on right foot**

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 250 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

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**INITIATING CUE:** A Plant event has just occurred involving a 250 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?

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

JPM No: New CR Vent

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

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

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.

The CRS directs you, the RO, 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</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 AFTER STOP with GREEN light lit

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

JPM No: New CR Vent

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	All of the following are OPEN <ul style="list-style-type: none"> <li>• PCV 840B</li> <li>• PCV-840A-1</li> <li>• PCV-840A-2</li> <li>• HCV-2898A</li> <li>• HCV-2898B</li> </ul> <p style="margin-left: 40px;"><b>CUE : HCV-2898A is closed and will not open</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 <ul style="list-style-type: none"> <li>• PCV 841B</li> <li>• PCV-841A-1</li> <li>• PCV-841A-2</li> <li>• HCV-2899A</li> <li>• HCV-2899B</li> </ul> <p style="margin-left: 40px;"><b>CUE : The ductwork is clear of smoke</b></p>

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

JPM No: New CR Vent

JPM Title: Restore Control Room Ventilation following Smoke Detector Trip

CRITICAL STEP	ELEMENT	STANDARD
14*. _____	Place override switches in normal	HC-VA-46A-3 and HC-VA-46B-3 in NORMAL

**CUE: STOP**

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

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

JPM No: New CR Vent

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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.

The CRS directs you, the RO, 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)

<p style="text-align: center;"><b>PEC / JPM</b> <b>REVISION VERIFICATION</b></p> <p><b>MASTER REVISION No. ___</b></p> <p><b>SIGNATURE _____</b></p>
--

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**


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<b>* CRITICAL STEP</b>	<b>ELEMENT</b>	<b>STANDARD</b>
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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**


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<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 0-20%.</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>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>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 0-20% 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>Report reading after 60 seconds.</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.**

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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 HPSI JPM

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

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

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>CUE: HCV-385 goes closed</b>
6*. ____	Trip SI-2A	(AI-30) Place SI-2A Control switch in AFTER-STOP , GREEN light lit
		<b>CUE: STOP</b>

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

JPM No: New HPSI JPM

JPM Title: HPSI Pump Operability Test (alternate path)

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**Termination Criteria: HPSI pump manually tripped after loss of recirculation flow**

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.**

---

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. 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
5. ____	Record Quench Tank Level	(CB-1/2/3) Record level from LI-132
6. ____	Record PORV discharge temperature	(CB-1/2/3) Record Temperature from TIA-134
7. ____	Start Chart Recorder	<b>CUE: I&amp;C has started chart recorder</b>

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

JPM No: New PORV Test

JPM Title: PORV Exercise Test

CRITICAL STEP	ELEMENT	STANDARD
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>CUE: I&amp;C reports and records FI-102-1 indication at 0.64</b>
10*. ____	Close PCV-102-1	(CB-1/2/3) HC-102-1 in AUTO within 5 seconds of being opened. GREEN light lit, PORV OFF- AUTO annunciator is clear.  <b>CUE: I&amp;C reports 0% reading on FI-102-1</b>
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

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

JPM No: New PORV Test

JPM Title: PORV Exercise Test

CRITICAL STEP	ELEMENT	STANDARD
15. ____	Record PORV discharge temperature	(CB-1/2/3) Record Temperature from TIA- 134

**CUE: STOP**

---

**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. 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-3A and RC-3C are running. The CRS has directed you to place RC-3D in service. All prerequisites are met**

CRITICAL STEP	ELEMENT	STANDARD
1. ____	Setup ERF Display for RC-3D	ERF Type [443] [DSP] RC-3D Page displays
2. ____	Station operator to respond to vibration alarms	CUE: Operator is at AI-270
3. ____	Verify controlled Bleed-off flow	ERF Verify positive bleed-off flow
4. ____	Ensure RCP NPSH	Use Figure TDB III.25
5. ____	Ensure 86/RC-3D reset	CB-1/2/3 86/RC-3D AMBER light lit
6. ____	Verify RCP Reverse rotation is cleared	CB-1/2/3 ANN A-6, D-5 clear
7.* ____	Start RC-3D lift oil pump	CB-1/2/3 RC-3D-1 in START and RED light lit.
8. ____	Verify AARD oil flow for RC-3D	ERF Page 342

**CUE: The lift oil pump has been running for two minutes**

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
9*. ____	Start RC-3D	CB-1/2/3 RC-3D CS in AFTER START and RED light lit
10. ____	Ensure oil pump stops	CB-1/2/3 RC-3D-1 GREEN light lit
11. ____	Monitor Amps	Ammeter on CB-1/2/3 drops below 425 amps within 17 seconds  <b>CUE: RCP Seal Leakoff flow high annunciator alarms</b>
12. ____	Diagnose the Failure	ERF Determines lower and middle seals on RC-3D have failed.
13.* ____	Trip RC-3D	CB-1/2/3 RC-3D CS in AFTER STOP and GREEN light lit  <b>CUE: STOP</b>

**Termination Criteria: RC-3D has been tripped after seal failure**

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

JPM No: JPM –0612 Modified AP

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**INITIATING CUE:** A plant startup is in progress. RC-3A and RC-3C are running. The CRS has directed you to place RC-3D in service. All prerequisites are met

---

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 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**

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 the <b>DT</b> -TM/LP Mode selector switch in Operate position	(AI-31A) Swtuch in OPERATE
4. ____	Place RPSCIP DVM to Meter Input	(AI-31A) Select METER INPUT
5. ____	Check +10V	(AI-31A) Push +10V and verify value between 9.8V and 10.2V
6. ____	Check -10V	(AI-31A) Push -10V and verify value between -9.8V and -10.2V
7. ____	Check zero	(AI-31A) Push ZERO and verify value between –0.2V and +0.2V

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
8. ____	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 CRS</b>
9*. ____	Bypass RPS Trip Units	Keys placed in Channel "A" Trip Units 1, 9, and 12, turned and YELLOW lights lit
10*. ____	Ensure Linear Power Channel Function Switch in OPERATE	Verify OPERATE Position
11*. ____	Place RPSCIP DVM in Nuclear Power	Select NUCLEAR POWER
12*. ____	Adjust Calibrate Potentiometer	DVM Readout equals XC-105 Power plus the scaling amp offset
13* ____	Adjust <b>DT</b> PWR Calibrate Potentiometer	Adjust <b>DT</b> PWR Calibrate Potentiometer until the NI- $\nabla$ T 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: 15 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	(AI-33A) RM-050/51 sample pump control switch to STOP and AMBER "Flow Fault" light lit

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

JPM No: JPM-0392 AP

JPM Title: ESF Sequencer Surveillance Test

CRITICAL STEP	ELEMENT	STANDARD
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 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

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

JPM No: JPM-0392 AP

JPM Title: ESF Sequencer Surveillance Test

CRITICAL STEP	ELEMENT	STANDARD
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  <b>CUE: VIAS signal</b>
16*. ____	Start RM-065 sample pump	(AI-106A) Place HC/RM-065 in AUTO  <b>CUE: The Shift manager has suspended the test due to the VIAS. STOP</b>

---

**Termination Criteria: The test has been terminated by the Shift Manager**

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 than 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 perform the first step of the Minimize DC Loads Attachment. **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>CUE: STOP Elapsed time must be 15 minutes or less</b>

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: Step 1 of attachment 6 has been completed**

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 perform the first step of the Minimize DC Loads Attachment. **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. 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**

**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

---

**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. VA-3A and VA-3B are both in operation.  
**START**

---

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

JPM No: JPM-101B

JPM Title: Filling EFWST with FW-54

Location: Room-81 and FW-54 Pump Room

Approximate Time: 10 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-101B

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-101B

JPM Title: Filling EFWST with FW-54

**INITIATING CUE: FW-54 was started locally and is running in recirc, FW-1029 and FW-1017 are OPEN. The CRS directs you to fill the EFWST using FW-54. You are to shutdown FW-54 locally when you have finished filling the EFWST.  
 START**

CRITICAL STEP	ELEMENT	STANDARD
1*. ____	Close FW-170	(room 81) Unlock and Close FW-170
2*. ____	Throttle EFWST fill valve open	(room 81) Open FW-1049 one turn
3. ____	Control fill rate	(room 81) Throttle FW-1049 to control feed to EFWST
4. ____	Fill EFWST to desired level	CUE: EFWST if full
5*. ____	Close and lock FW-1049	(room 81) Close FW-1049 and install lock
6*. ____	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>

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

JPM No: JPM-101B

JPM Title: Filling EFWST with FW-54

CRITICAL STEP	ELEMENT	STANDARD
7*. _____	Open and lock FW-170	(room 81)  OPEN FW-170 and install lock  <b>CUE: STOP</b>

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

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

JPM No: JPM-101B

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**INITIATING CUE:** FW-54 was started locally and is running in recirc, FW-1029 and FW-1017 are OPEN. The CRS directs you to fill the EFWST using FW-54. You are to shutdown FW-54 locally when you have finished filling the EFWST.  
**START**

---

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	(AI-44) Select Closed on Dampers HCV-799A/B through HCV-819 and verify GREEN lights lit  <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>

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

JPM No: JPM-027

JPM Title: Waste Gas Incident

CRITICAL STEP	ELEMENT	STANDARD
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  <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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Fort Calhoun Station - Operations Training  
**JOB PERFORMANCE MEASURE**

JPM No.: JPM-0450

JPM Title: **Emergency Start Of This Diesel Fire Pump**

System(s): Fire Protection

Location(s): Local at Diesel Fire Pump

Approximate Time: 5 minutes

Reference(s): (1) OI-FP-1, Attachment 3, 3.0  
(2) NRC K/A 000086,K4.01 (RO3.1/SRO3.7)  
(3) NRC K/A 000086,A4.01 (RO3.3/SRO3.3)

<p style="text-align: center;"><b>PEC/JPM</b> <b>REVISION VERIFICATION</b></p> <p><b>MASTER REVISION No.</b> _____</p> <p><b>SIGNATURE</b> _____</p>
--

JPM Prepared by: C.L. Rennerfeldt Date: 08/20/00

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

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

JPM No.: JPM-0450

JPM Title: **Emergency Start Of This Diesel Fire Pump**

System(s): Fire Protection

Location(s): Local at Diesel Fire Pump

Approximate Time: 5 minutes

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

- Reference(s): (1) OI-FP-1, Attachment 3, 3.0 (R-38)  
(2) NRC K/A 000086,K4.01 (RO3.1/SRO3.7)  
(3) NRC K/A 000086,A4.01 (RO3.3/SRO3.3)

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

-----

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-0450

JPM Title: **Emergency Start Of This Diesel Fire Pump**

Tools & Equipment: None.

Safety Considerations: None.

Comments: This JPM will be conducted in the Plant Intake Structure.

**THIS JPM WILL BE PERFORMED AS A STATIC JPM IN THE PLANT.**

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

JPM No.: JPM-0450

JPM Title: **Emergency Start Of This Diesel Fire Pump**

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<b>* CRITICAL STEP</b>	<b>ELEMENT</b>	<b>STANDARD</b>
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**Initiating Cue:**

**The electric fire pump is OOS. A transformer fire exists. Transformer deluge has activated but diesel fire pump fails to auto-start. You are directed to perform an emergency manual start of the diesel fire pump. START.**

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		AI-183
___ 1. FP-1B Local Emergency Start:		
___ a. Ensure the following are on:		
• AI-183-CB1		• Battery 1 ON
• AI-183-CB2		• Battery 2 ON
___ b. HC/FP-1B-MS to Manual 1		b. Select Manual #1.
___ c. Press HC/FP-1B-1		c. Crank 1 Pushbutton
		<b>Cue: Engine <u>DOES NOT START.</u></b>
___ d. HC/FP-1B-MS to Manual 2		d. Select Manual #2.
___ e. Press HC/FP-1B-2		e. Crank 2 Pushbutton
		<b>Cue: Engine <u>DOES NOT START.</u></b>
		<u>South side of engine.</u>
* ___ f. Open FO-169		f. TURN knob (CW) to full IN position.
* ___ g. Open FP-161		g. Cooling water bypass valve to OPEN.
* ___ h. Engage starter:		<u>North side of engine.</u>
• YS/FP-1B-1		RAISE lever 1 or 2 AND Release lever as soon as engine is running.
• YS/FP-1B-2		<b>CUE: Engine has started.</b>

---

**Termination Criteria: Diesel fire pump has been started.**

---

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

JPM No.: JPM-0450

JPM Title: **Emergency Start Of This Diesel Fire Pump**

**Initiating Cue:**

**The electric fire pump is OOS. A transformer fire exists. Transformer deluge has activated but diesel fire pump fails to auto-start. You are directed to perform an emergency manual start of the diesel fire pump. START.**

Facility: <u>Fort Calhoun</u> Scenario No.: <u>1</u> 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			
Turnover: Raw Water pumps should be rotated for maintenance. (Start D Stop B)			
Event No.	Malf. No.	Event Type*	Event Description
1	N/A	N(PRI)	Rotate running Raw Water pumps
2	T:F908	I(SEC)	S/G steam flow transmitter FT-908 fails low - manual feedwater level control required
3	T:122H4	I(PRI)	hot leg temperature transmitter fails high
4	CRD06	C(ALL)	Dropped control rod
5	N/A	R/N (ALL)	required power reduction to 70%
6	RBAL218 3	C(PRI)	LCV-218-3 will not open (must use alternate boration path)
7	T:P210	I(PRI)	PIC-210 transmitter (letdown backpressure) fails high
8	ESF06B	C (ALL)	Inadvertent Steam Generator Isolation Signal
9	MSS02G	M(ALL)	S/G safety valve fails open following SGIS

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

















Facility: <u>Fort Calhoun</u> Scenario No.: <u>2</u> 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 due to inoperability of ERF computer, FW-10 tagged OOS, RCS Activity high due to leaking fuel.			
Turnover: Place second charging pump in operation for RCS activity control.			
Event No.	Mal. No.	Event Type*	Event Description
1	N/A	N(PRI)	Place second charging pump in operation
2	T:P910	I(SEC)	PIC-910 fails high causing turbine bypass valve to open
3	CVC16A	C(PRI)	Discharge to suction relief valve on charging pump that was just started - fails open causing loss of charging flow
4	NIS07C	I(PRI)	Power Range NI Channel AC@ fails (loss of voltage)
5	T:P103X	I(PRI)	Controlling Pressurizer Pressure channel fails high
6	NBWPAC 9A	C(SEC)	Running TPCW pump trips - must manually start other pump
7	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	RCP02B	M(ALL)	RCP seal cooler leak - Interfacing LOCA to CCW.
10	CCW01B	M(ALL)	CCW surge tank ruptures - Loss of CCW

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

















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
	SRO <C>	Direct PRI to trip the Reactor, trip the RCPs and close HCV-438A/B/C/D
	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	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
	SRO	Provide Operators with EOP-03 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	Record time of SIAS initiation
	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 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
	PRI	Monitor plant parameters



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

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

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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: Place an additional CCW/RW heat exchanger in service

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	N(PRI)	Place additional RW/CCW heat exchanger in service
2	T:T2987	I(PRI)	Letdown HX CCW outlet temperature fails low
3	SGN01B	C(ALL)	Steam Generator Tube leak - RC2B
4	N/A	R(PRI) N(SEC)	AOP-5 Emergency shutdown
5	T:L101X	I(PRI)	Controlling pressurizer level channel fails low
6	JPB1751L	I(SEC)	Instrument Air pressure transmitter fails low
7	EDS11A/ B	M(ALL)	Loss of Offsite Power
8	RRCP102 1	C/M (ALL)	PORV Fails Open on trip - No power to block valve
9	ESF05A/ B	C(PRI)	PPLS fails to actuate

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







Op-Test No.: _____ Scenario No.: <u>3</u> Event No.: <u>4</u> Page <u>5</u> of <u>10</u>		
Event Description: <u>AOP-5 Emergency shutdown</u>		
Time	Position	Applicant's Actions or Behavior
	SRO	Enter AOP-05 (Emergency Shutdown) - Direct Emergency Shutdown
	SRO	Notify System Operations of Power Decrease
	SRO	Direct PRI to begin boration using SIRWT
	PRI	Switch charging pump suction from the VCT to the SIRWT
		Direct SEC to control RCS cold leg temperature by reducing turbine load
	SEC	Reduce turbine load to control cold leg temperature
	SRO	Direct PRI to operate control rods to control ASI
	PRI	Operate Control Rods to control ASI
	PRI	Monitor and control primary parameters
	SEC	Monitor and control RCS cold leg temperature and secondary parameters
	SRO	Continue to coordinate PRI and SEC actions during power reduction

Op-Test No.: _____ Scenario No.: <u>3</u> Event No.: <u>5</u> Page <u>6</u> of <u>10</u>		
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Facility: <u>Fort Calhoun</u> Scenario No.: <u>4 (Spare)</u> Op-Test No.: _____			
Examiners: _____ Operators: _____			
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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













