

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

JPM No: ADM RO A.1.a

JPM Title: Estimated Critical Condition

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

Reference(s): Fort Calhoun Technical Data Book  
K/A 2.1.25 (RO 2.8)

JPM Prepared by: Jerry Koske      Date: \_\_\_\_\_

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

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

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

JPM No: ADM RO A.1.a

JPM Title: Estimated Critical Condition

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

All Critical Steps (shaded) 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: TDB, Calculator

Safety Considerations: None

Comments:

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

JPM No: ADM RO A.1.a

JPM Title: Estimated Critical Condition

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**INITIATING CUE:** The plant has been shutdown as the result of a reactor trip and is planning a reactor startup at 1400 on 9/9/02. You are directed to determine the estimated critical boron concentration for this startup.

The following information has been provided:

- Shutdown from 100% power occurred at 2300 on 9/8/02
- Plant was operating with all rods out prior to the trip
- Boron concentration prior to the trip was 610 ppm
- Average core burnup is 4500 MWD/MTU
- Criticality should occur with group 4 at 85 inches
- Boron concentration has not been changed since the trip
- DEN-Nuclear states that no correction is needed for boron depletion

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**Critical Steps shown in gray**

STEP	ELEMENT	STANDARD
1	Obtains TDB-V.1.B, "Estimated Critical Conditions Worksheet" from the Technical Data Book.	Locates TDB-V.1.B <b>NOTE: Provide procedure copy after it is located in TDB.</b>
2	Completes worksheet through step D.3.d.	See attached completed worksheet
3	Determines critical boron concentration.	Critical boron concentration is determined to be 686 ppm $\pm$ 20 ppm

**CUE: Stop after step D.3.D is completed.**

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

JPM No: ADM RO A.1.a

JPM Title: Estimated Critical Condition

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**Termination Criteria: Critical boron concentration has been determined**

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

JPM No: ADM RO A.1.a

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**INITIATING CUE:** The plant has been shutdown as the result of a reactor trip and is planning a reactor startup at 1400 on 9/9/02. You are directed to determine the estimated critical boron concentration for this startup.

The following information has been provided:

- Shutdown from 100% power occurred at 2300 on 9/8/02
  - Plant was operating with all rods out prior to the trip
  - Boron concentration prior to the trip was 610 ppm
  - Average core burnup is 4500 MWD/MTU
  - Criticality should occur with group 4 at 85 inches
  - Boron concentration has not been changed since the trip
  - DEN-Nuclear states that no correction is needed for boron depletion
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Fort Calhoun Station – Operations Training  
**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

JPM No: RO ADM JPM A.1.b

JPM Title: Determine Operational Mode

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

Reference(s): Fort Calhoun Tech Specs  
COLR  
K/A 2.1.22 (RO 2.8)

JPM Prepared by: Jerry Koske      Date: \_\_\_\_\_

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

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

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

JPM No: RO ADM JPM A.1.b

JPM Title: Determine Operational Mode

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

All Critical Steps (shaded) 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.b

JPM Title: Determine Operational Mode

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**INITIATING CUE:**    **The following plant conditions exist:**  
                              **RCS is intact and on shutdown cooling.**  
                              **One shutdown cooling pump is in operation.**  
                              **RCS temperature is 190F**  
                              **RCS pressure is 18 psia**  
                              **RCS boron concentration is 1975 PPM.**  
                              **Burnup is 3800 MWD/MTU**

**Determine the plant's operational mode.**

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**Critical Steps shown in gray**

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STEP	ELEMENT	STANDARD
1	Refer to technical specifications For mode definitions	Refers to Technical Specification Definitions section, page 2 and determines that the plant is either in mode 4 or 5 depending on the boron concentration.
2	Refer to COLR to determine shutdown boron concentration.	Refers to TDB-VI (COLR) Table 2 and determines that the required refueling boron concentration is 2023 ppm.
3	Determine plant operational mode	The plant is in Mode 4, "Cold Shutdown Condition".

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**Termination Criteria:**    **Operational mode has been determined**



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

JPM No: RO ADM JPM A.1.b

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**INITIATING CUE:**    The following plant conditions exist:  
                              RCS is intact and on shutdown cooling.  
                              One shutdown cooling pump is in operation.  
                              RCS temperature is 190F  
                              RCS pressure is 18 psia  
                              RCS boron concentration is 1975 PPM.  
                              Burnup is 3800 MWD/MTU

                              Determine the plant's operational mode.

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

JPM No: RO ADM JPM A.2

JPM Title: Time to boil determination

Approximate Time: 10 minutes

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

Reference(s): AOP-19  
K/A 2.1.24 (RO 2.6)

JPM Prepared by: Jerry Koske Date: \_\_\_\_\_

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: Time to boil determination

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

All Critical Steps (shaded) 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: AOP-19

Safety Considerations: None

Comments:

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

JPM No: RO ADM JPM A.2

JPM Title: Time to boil determination

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**INITIATING CUE:** It is 0600 on 5/12/02. The Plant has shutdown for a refueling outage. The reactor was shutdown on 5/6/02 at 1800. The RCS level is at the vessel flange. The pressurizer manway is removed. RCS pressure is 15 psia and CET temperatures indicate 120°F. A loss of shutdown cooling has just occurred and the CRS has directed you to use AOP-19 to determine the time to boil and report the results to him.

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**Critical Steps shown in gray**

STEP	ELEMENT	STANDARD
1	Obtain copy of AOP-19	Obtains AOP-19 and goes to attachments B and C.
2	Record time shutdown cooling was lost and temperature.	Attachment B form. Enter 0600 and 120F in blanks 1 and 2.
3	Determine remaining time to boil	Calculate that 5.5 days have elapsed since shutdown. Use graph on page 19 to interpolate time to boil.
4	Record time to boil on time to boil worksheet.	Determines that there are 39 minutes $\pm$ 4 minutes to boil.
5	Report time to boil	Communicate results of the time to boil determination to the CRS.

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**Termination Criteria:** Time to boil reported to the CRS

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

JPM No: RO ADM JPM A.2

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**INITIATING CUE:** It is 0600 on 5/12/02. The Plant has shutdown for a refueling outage. The reactor was shutdown on 5/6/02 at 1800. The RCS level is at the vessel flange. The pressurizer manway is removed. RCS pressure is 15 psia and CET temperatures indicate 120°F. A loss of shutdown cooling has just occurred and the CRS has directed you to use AOP-19 to determine the time to boil and report the results to him.

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

JPM No: ADM RO A.3

JPM Title: RCA Entry and Exit with PCM Alarms

Approximate Time: 12 minutes

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

Reference(s): GET-Radiation Worker Training  
Standing Order G-101  
K/A 2.3.1 (RO 2.6)

JPM Prepared by: Jerry Koske Date: \_\_\_\_\_

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

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

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

JPM No: ADM RO A.3

JPM Title: RCA Entry and Exit with PCM Alarms

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

All Critical Steps (shaded) 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 is conducted during RCA entry and exit for the RCA JPMs

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

JPM No: ADM RO A.3

JPM Title: RCA Entry and Exit with PCM Alarms

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**INITIATING CUE:**    **A plant procedure that you are performing requires entry into the RCA.**

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**Critical Steps shown in gray**

STEP	ELEMENT	STANDARD
1	Review the RWP	<u>RCA Access Control</u>  Reads RWP
2	Determine Radiological Conditions	Checks survey maps or discusses radiological conditions with RP personnel.
3	Obtains Dosimetry	Verify TLD attached to security badge. Obtain EAD.
4	Sign on to appropriate RWP.	Insert EAD in reader. Scan PID and RWP number.
5	Enter RCA	RCA Entered
6	Performs procedure	Performs RCA JPMs
7	Exits RCA	Returns to RCA access point
8	Monitor for personnel contamination prior to exiting RCA	Monitor for contamination using PCM-1.  <b>CUE: After examinee has completed counting on a PCM-1, tell him to assume that the PCM-1 alarmed- zone 6</b>



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

JPM No: ADM RO A.3

JPM Title: RCA Entry and Exit with PCM Alarms

STEP	ELEMENT	STANDARD
9	Monitor for contamination a second time.	Monitor for contamination again using a different PCM-1.  <b>CUE: After examinee has completed counting on another PCM-1, tell him to assume that this PCM-1 also alarmed- zone 6</b>
10	Contact RP	RP Contacted  <b>CUE: RP directs that you to monitor for contamination using frisker.</b>
11	Uses Frisker to monitor for contamination.	Slowly moves pancake probe over hands, shoes and body surface.  <b>CUE: Frisker cpm as read.</b>

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**Termination Criteria:** RCA has been exited

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

JPM No: ADM RO A.3

JPM Title: RCA Entry and Exit with PCM Alarms

**NOTE to RP Tech**

As a part of this candidate's NRC license exam, he must enter and exit the RCA.

During RCA exit, he has been given verbal Cues that he has received a zone 6 alarm on two separate PCM-1 monitors.

As a part of this JPM, we would like you to direct him to perform a whole body frisk on himself.

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

JPM No: ADM RO A.3

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**INITIATING CUE:** A plant procedure that you are performing requires entry into the RCA.

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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  
K/A 2.4.29 (RO 2.6)

JPM Prepared by: Jerry Koske Date: \_\_\_\_\_

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 (shaded) 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:      You are the RO in the control room during an event when an Accountability Determination is performed per the Emergency Plan. What do you do with your Accountability card?

Answer:              Place your accountability card in the control room accountability box.

Question Two:      You are escorting two individuals inside the protected area when an ALERT is declared. What action do you take?

Answer:              Take the escorted individuals to the security building and ensure that they exit the protected area.

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

JPM No: RO ADM JPM A.4

Question One

**You are the RO in the control room during an event when an Accountability Determination is performed per the Emergency Plan. What do you do with your accountability card?**

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

JPM No: RO ADM JPM A.4

Question Two:

**You are escorting two individuals inside the protected area when an ALERT is declared. What action do you take?**



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

JPM No: ADM SRO A.1.a

JPM Title: Review of faulty Estimated Critical Condition Worksheet

Approximate Time:

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

Reference(s): Fort Calhoun Technical Data Book  
K/A 2.1.25 (SRO 3.1)

JPM Prepared by: Jerry Koske Date: \_\_\_\_\_

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

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

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

JPM No: ADM SRO A.1.a

JPM Title: Review of faulty Estimated Critical Condition Worksheet

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

All Critical Steps (shaded) 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: Calculator

Safety Considerations: None

Comments:

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

JPM No: ADM SRO A.1.a

JPM Title: Review of faulty Estimated Critical Condition Worksheet

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**INITIATING CUE:** The plant has been shutdown as the result of a reactor trip and is planning a reactor startup at 1400 on 9/9/02. You are directed to review the calculation of the estimated critical boron concentration for this startup through step D.3.d.

The following information has been provided:

- Shutdown from 100% power occurred at 2300 on 9/8/02
- Plant was operating with all rods out prior to the trip
- Boron concentration prior to the trip was 610 ppm
- Average core burnup is 4500 MWD/MTU
- Criticality should occur with group 4 at 85 inches
- Boron concentration has not been changed since the trip
- DEN-Nuclear states that no correction is needed for boron depletion

---

**Critical Steps shown in gray**

STEP	ELEMENT	STANDARD
1	Reviews the ECC worksheet	
2	Identifies first error	The wrong sign is used for the change in reactivity due to xenon in step C.3.c.
3	Identifies second error	The HFP inverse boron worth was used in step D.1 rather than the HZP inverse boron worth as specified in the worksheet. (The wrong curve was used when reading TBD Figure II.A.4)

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

JPM No: ADM SRO A.1.a

JPM Title: Review of faulty Estimated Critical Condition Worksheet

STEP	ELEMENT	STANDARD
4	Determines correct critical boron concentration after making corrections	Critical boron concentration is 686 ppm $\pm$ 20 ppm

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**Termination Criteria:** Both worksheet errors have been identified and the correct estimated critical boron concentration has been determined

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

JPM No: ADM SRO A.1.a

---

**INITIATING CUE:** The plant has been shutdown as the result of a reactor trip and is planning a reactor startup at 1400 on 9/9/02. You are directed to review the calculation of the estimated critical boron concentration for this startup through step D.3.d.

The following information has been provided:

- Shutdown from 100% power occurred at 2300 on 9/8/02
  - Plant was operating with all rods out prior to the trip
  - Boron concentration prior to the trip was 610 ppm
  - Average core burnup is 4500 MWD/MTU
  - Criticality should occur with group 4 at 85 inches
  - Boron concentration has not been changed since the trip
  - DEN-Nuclear states that no correction is needed for boron depletion
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Fort Calhoun Station – Operations Training  
**ADMINISTRATIVE JOB PERFORMANCE MEASURE**

JPM No: SRO ADM JPM A.1.b

JPM Title: Armed Security Attack

Approximate Time: 15 minutes

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

Reference(s): AOP-37  
K/A 2.1.13 (SRO 2.9)

JPM Prepared by: Jerry Koske Date: \_\_\_\_\_

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

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

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

JPM No: SRO ADM JPM A.1.b

JPM Title: Armed Security Attack

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

All Critical Steps (shaded) 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.b

JPM Title: Armed Security Attack

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**INITIATING CUE:** You are the CRS. You have just been notified by the Central Alarm Station Operator that an armed security attack is in progress. An armed force has attacked via the river and occupied the intake structure.

**Take the appropriate actions.**

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CRITICAL STEP	ELEMENT	STANDARD
1	Enter AOP-37	Obtains copy of AOP-37 and enters it.
2	Confirm the report of the armed attack.	Call back on extension 6991 or 6188 using 800Mhz radio subfleet 1 or 2  <b>CUE: Attack is confirmed</b>
3	Make plant announcement	Make the following announcement” Attention all Personnel. Attention all Personnel. The Plant is in a Security Emergency. Take cover and do not move:
4	Direct Installation of “Ultra Dogs”	<b>CUE: Ultra Dogs have been installed on both Control Room Doors.</b>
5	Initiate a reactor shutdown.	Directs RO to trip the reactor and implement EOP-00, Standard Post-Trip actions.



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

JPM No: SRO ADM JPM A.1.b

JPM Title: Armed Security Attack

CRITICAL STEP	ELEMENT	STANDARD
		<b>CUE: The reactor has been tripped and Standard Post Trip Actions completed. All EOP-00 safety functions are met.</b>
5	Directs entry into EOP-01	Refers to diagnostic actions and enters EOP-01
6	Directs that both Control room ventilation Mode selector switches placed in recirc.	Directs RO to place HC-VA-46A-1 and HC-VA-46B-1 in RECIRC.  <b>CUE: RO reports that CR ventilation mode selector switches are in RECIRC</b>
7	Ensure S/G levels 85-95% NR	Direct RO to maintain S/G levels 85-95% NR (94-98% WR)
8	Monitor CR panels and security radio for indication of potentially compromised equipment.	Directs ROs to monitor panels and security radio.
9		<b>CUE: RO reports trip of CW-1A</b>
10	Refer to AOP-37 attachment A	Refers to AOP-37 attachment A and determines that no alternate safety function equipment is required.

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

JPM No: SRO ADM JPM A.1.b

JPM Title: Armed Security Attack

CRITICAL STEP	ELEMENT	STANDARD
11		<b>CUE: Central Alarm station Operator reports that the armed security attack has been terminated. All intruders have been captured by FCS security.</b>
12	Exit AOP-37	Exits AOP-37 and continues with procedure EOP-01.

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**Termination Criteria:** Armed attack is terminated and AOP-37 exited.

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

JPM No:

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**INITIATING CUE:** You are the CRS. You have just been notified by the Central Alarm Station Operator that an armed security attack is in progress. An armed force has attacked via the river and occupied the intake structure.

Take the appropriate actions.

---

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

JPM No: SRO ADM JPM A.2

JPM Title: Review a faulty clearance for AC-1A

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

Reference(s): SO-G-20A  
K/A 2.2.13 (SRO 3.8)

JPM Prepared by: Jerry Koske      Date: \_\_\_\_\_

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: Review a faulty clearance for AC-1A

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

All Critical Steps (shaded) 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: P&IDs

Safety Considerations: None

Comments:

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

JPM No: SRO ADM JPM A.2

JPM Title: Review a faulty clearance for AC-1A

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**INITIATING CUE:** The plant is at 100% power when it is noticed during a surveillance test that RW/CCW heat exchanger AC-1A has a high DP which requires that the RW side of the heat exchanger be opened and cleaned. You have been provided a clearance for this work, that was prepared by an equipment operator, for review and approval.

---

**Critical Steps shown in gray**

STEP	ELEMENT	STANDARD
1	May obtain a copy of Procedure SO-O-20A and determine review responsibilities	Note: Provide copy of clearance
2	Reviews clearance	References P&IDs to verify equipment that should be included in clearance and desired status..
3	Clearance approval	Does not approve clearance as written.  HCV-2880A and HCV-2880B must be handjacked closed because they fail open on a loss of air.  NOTE: The proposed clearance treats these valves as fail-closed valves by isolating instrument air to them. As written, this clearance would likely result in flooding.

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**Termination Criteria:** Clearance review complete and error identified.

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

JPM No: SRO ADM JPM A.2

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**INITIATING CUE:** The plant is at 100% power when it is noticed during a surveillance test that RW/CCW heat exchanger AC-1A has a high DP which requires that the RW side of the heat exchanger be opened and cleaned. You have been provided a Clearance for this work, that was prepared by an equipment operator, for review and approval.

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# FOR TRAINING USE ONLY

FCS Clearance

AC-RW-001

AC-1A MECH ISOL

AC-RW

**Description:**

Complete isolation of ac-1a for maintenance

**Reason:**

Tube cleaning on AC-1A

**Hazards:**

flooding

**Notes:**

Tagged Component	Description	Location	Tag Type	Pl. Seq	Rest Seq	Tagged Position	Restoration Position	Tag Placement Notes	Tag Removal Notes
HC-2880C	CONTROL SWITCH FOR HCV-2880A AND HCV-2880B	AUX 77 1036 Cb-1,2,3	Caution	1	5	CLOSED	CLOSED	IA ISOLATED TO VALVES	
HC-489	CONTROL SWITCH FOR HCV-489A AND HCV-489B	AUX 77 1036 Cb-1,2,3	Caution	1	5	CLOSED	CLOSED	VALVES HJ CLOSED	
HC-2880A	COMP CLNG HT EXCH AC-1A;RAW WATER INLET VALVE; HAND CONTROLLER	AUX 18 0993 13W'C-26N'5B	Danger	2	4	DO NOT USE	CLOSED		
HC-2880B	COMP CLNG HT EXCH AC-1A;RAW WATER OUTLET VALVE; HAND CONTROLLER	AUX 4 0995 9W'D-1N'5B	Danger	2	4	DO NOT USE	CLOSED		
IA-HCV-2880A-B	HCV-2880A INSTRUMENT AIR SUPPLY ISOLATION VALVE	AUX 18 0994 13E'D-6S'6D	Danger	3	3	CLOSED	OPEN		
IA-HCV-2880B-B	HCV-2880B INSTRUMENT AIR SUPPLY ISOLATION VALVE	AUX 4 0991 7W'D-4N'5B	Danger	3	3	CLOSED	OPEN		
HCV-489A	COMP COOLING HT EXCH AC-1A; CCW INLET VALVE	AUX 4 0995 10W'D-11N'5B	Danger	3	3	HJ CLOSED	HJ REMOVED		
HCV-489B	COMP COOLING HT EXCH AC-1A; CCW OUTLET VALVE	AUX 4 0992 10W'D-1N'6D	Danger	3	3	HJ CLOSED	HJ REMOVED		
RW-156	COMP COOLING HT EXCH AC-1A OUTLET WATER BOX FLUSH VALVE	AUX 4 0992 6W'D-4N'5B	Danger	4	2	CLOSED	CLOSED		
RW-130	RW/CCW HT EXCH AC-1A AIR SPARGING INLET ISOLATION VALVE	AUX 4 0990 4W'D-33N'5B	No Tag	5	1	SM DISCR	CLOSED		
RW-213	CCW HEAT EXCHANGER AC-1A DRAIN VALVE	AUX 4 0991 3W'D-15S'7A	No Tag	5	1	SM DISCR	CLOSED		
RW-152	COMP COOLING HT EXCH AC-1A RAW WATER OUTLET VENT VALVE	AUX 4 0999 8W'D-4N'5B	No Tag	5	1	SM DISCR	CLOSED		
RW-189	RAW WATER HEAT EXCH AC-1A DWNSTREAM OF VALVE HCV-2880A VENT VLV	AUX 18 1001 20W'C-30N'5B	No Tag	5	1	SM DISCR	CLOSED		

Level	Verified by	Verification Date/Time	Verification Description	Status
1				
2				



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

JPM No: SRO ADM A.3

JPM Title: Approve a Containment Pressure Reduction Release

Approximate Time: 12 min

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

Reference(s): OI-VA-1  
FC-212  
K/A 2.3.6 (SRO 3.1)

JPM Prepared by: Jerry Koske Date: \_\_\_\_\_

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

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

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

JPM No: SRO ADM A.3

JPM Title: Approve a Containment Pressure Reduction Release

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

All Critical Steps (shaded) 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 A.3

JPM Title: Approve a Containment Pressure Reduction Release

---

**INITIATING CUE:** You are acting as the Shift Manager. A Containment Pressure Reduction is planned for your shift. You must review the paperwork and authorize the release before it can be performed.

**OI-VA-1-CL-B has been completed per OP-1.**

---

**Critical Steps shown in gray**

STEP	ELEMENT	STANDARD
		<b>Provide the applicant with OI-VA-1 attachment 6 and the FC-212.</b>
1	Verify at least one VA-40 fan is running.	<u>AI-44</u> At least one fan has control switch in AFTER START and RED light ON.
2	Verify at least one noble gas monitor in service on AB stack.	<u>AI-31</u> Verify RM-062 or RM-052 in service on the stack
3	Verify one Iodine/Particulate Sampler or aux sample collection equipment in service on AB stack.	<b>CUE: One Iodine/Particulate sampler is in service on the AB stack</b>
4	Verify required recorders are operable	AI-33E – RR-049A AI-44 – FR-758 AI-44 – PR-745
5	Verify Room 60 items	<b>CUE: EONA reports the following:</b> <ul style="list-style-type: none"><li>• VA-366 is open</li><li>• VA-367 is open</li><li>• VA-368 is closed</li><li>• DPI-729 reads zero</li><li>• FI-729 reads zero</li></ul>

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

JPM No: SRO ADM A.3

JPM Title: Approve a Containment Pressure Reduction Release

STEP	ELEMENT	STANDARD
6	Reviews FC-212	Determines that 75 scfm was used as the containment release rate in FC-212 resulting in non-conservative setpoint.  DOES NOT AUTHORIZE RELEASE

---

**Termination Criteria:** Release permit reviewed and release authorization refused.

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

JPM No: SRO ADM JPM A.3

---

**INITIATING CUE:** You are acting as the Shift Manager. A Containment Pressure Reduction is planned for your shift. You must review the paperwork and authorize the release before it can be performed.

OI-VA-1-CL-B has been completed per OP-1.

---

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

JPM No: SRO ADM JPM A.4

JPM Title: Emergency Plan Classification of an Armed Attack

Approximate Time: 10 minutes

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

Reference(s): EPIP-OSC-1  
EPIP-EOF-7  
K/A 2.4.41 (SRO 4.1)  
K/A 2.4.44 (SRO 4.4)

JPM Prepared by: Jerry Koske Date: \_\_\_\_\_

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 Plan Classification of an Armed Attack

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

All Critical Steps (shaded) 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:               Do not perform this JPM before SRO ADM JPM A.1.b

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

JPM No: SRO ADM JPM A.4

JPM Title: Emergency Plan Classification of an Armed Attack

---

**INITIATING CUE:**    **An armed security attack has been confirmed. The control room has entered AOP-37. The armed attack came from the river. The armed intruders have occupied the intake structure. AC-10A tripped unexpectedly.**

**The meteorological indications are as follows:**

- **Indicated 10m wind speed – 12 mph, 14 mph**
- **Indicated wind direction – 120°, 128°**
- **Indicated ?T is -1.8°C/100m, -1.6°C/100m**
- **It is raining, 0.4 inches daily total**

**You are directed to enter the Emergency Plan, classify the event and determine offsite Protective Action Recommendations.**

**Complete page 1 of form FC-1188.**

---

**Critical Steps shown in gray**

STEP	ELEMENT	STANDARD
1	Refer to Emergency Plan	Refer to EPIP-OSC-1
2	Classify the event	The event should be classified as a Site Area Emergency per EAL 9.10 (Confirmed Vital Attack occurs inside a vital area) on form FC-1188  Note: The area in the intake structure where AC-10A is located is a vital area.
3	Determine Protective Action Recommendations	Refer to EPIP-EOF-7 and determine that there are no PARs for this situation. Document on form FC-1188



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

JPM No: SRO ADM JPM A.4

JPM Title: Emergency Plan Classification of an Armed Attack

STEP	ELEMENT	STANDARD
4	Document other items on form FC-1188	Wind from – 120° - 128° Wind Speed – 12 mph Precipitation – yes Stability class – C There is no radioactive release

---

**Termination Criteria: Event has been classified and PARs determined**

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

JPM No: SRO ADM JPM A.4

---

**INITIATING CUE:** An armed security attack has been confirmed. The control room has entered AOP-37. The armed attack came from the river. The armed intruders have occupied the intake structure. AC-10A tripped unexpectedly.

The meteorological indications are as follows:

- Indicated 10m wind speed – 12 mph, 14 mph
- Indicated wind direction – 120°, 128°
- Indicated ?T is -1.8°C/100m, -1.6°C/100m
- It is raining, 0.4 inches daily total

You are directed to enter the Emergency Plan, classify the event and determine offsite Protective Action Recommendations.

Complete page 1 of form FC-1188.

---

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

JPM No: B.1.a

JPM Title: Emergency Boration from the Control Room

Location: Simulator

Approximate Time: 7 minutes Actual Time: \_\_\_\_\_

Reference(s): EOP-00  
K/A 000001 K4.05 (RO 3.9 / SRO 3.9)  
K/A 000001 A4.02 (RO 4.1 / SRO 3.9)

JPM Prepared by: Jerry Koske Date: \_\_\_\_\_

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

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

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

JPM No: B.1.a

JPM Title: Emergency Boration from the Control Room

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

All Critical Steps (shaded) 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:                 Simulator Dynamic JPM  
                                  Override HCV-268 closed [COP RBAH268 0%] and  
                                  LCV-218-2 open

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

JPM No: B.1.a

JPM Title: Emergency Boration from the Control Room

---

**INITIATING CUE:** A reactor trip has occurred during a reactor startup and while performing EOP-00, you find that all shutdown rods have stuck out. All attempts to trip or insert control rods have failed. You are directed to commence emergency boration.

**No procedures are allowed for this JPM**

---

**Critical Steps shown in gray**

---

STEP	ELEMENT	STANDARD
		<b>Note: The following steps may be performed out of sequence.</b>
1	Close FCV-269X and FCV-269Y	<u>CB-4</u> Control switches for FCV-269X&Y in CLOSED and GREEN lights lit
2	Open all of the following valves: a. HCV-268 b. HCV-265 c. HCV-258	<u>CB-4</u> a. Control switch for HCV-268 to OPEN until only RED light lit <b>[ HCV-268 will not open]</b> b. Control switch for HCV-265 to OPEN until only RED light lit c. Control switch for HCV-258 to OPEN until only RED light lit
3	Start All of the following pumps: a. Both Boric Acid Pumps b. All Charging Pumps	<u>CB-4</u> a. Control switches to START  <u>CB-1,2,3</u> b. Control switches to START and RED lights lit

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

JPM No: B.1.a

JPM Title: Emergency Boration from the Control Room

STEP	ELEMENT	STANDARD
4	Close LCV-218-2	<u>CB-1,2,3</u> Control Switch to CLOSE until only GREEN light lit <b>[LCV-218-2 will not close]</b>
5	Ensure all of the following valves are closed: a. LCV-218-3 b. HCV-257 c. HCV-264	<u>CB-1,2,3</u> a. GREEN lights lit  <u>CB-4</u> b. GREEN light lit c. GREEN light lit
6	Locally open HCV-268 and/or close LCV-218-2.	Direct EONA to manually open HCV-268 and/or close LCV-218-2;  Note: Only one of these actions is required to establish emergency boration  <b>CUE: Simulator Operator will perform requested manual action and report as EONA.</b>

---

**Termination Criteria:** Borated water is being injected into the RCS

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

JPM No: B.1.a

---

**INITIATING CUE:** A reactor trip has occurred and while performing EOP-00, you find that all shutdown rods have stuck out. All attempts to trip or insert control rods have failed. You are directed to commence emergency boration.

**No procedures are allowed for this JPM**

---

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

JPM No: B.1.b

JPM Title: Perform Monthly RAS Surveillance Test

Location: Simulator

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

Reference(s): OP-ST-ESF-0009 7.4 (R38)  
K/A 000013 K4.06 (RO 4.0 / SRO 4.3)

JPM Prepared by: Jerry Koske Date: \_\_\_\_\_

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

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



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

JPM No: B.1.b

JPM Title: Perform Monthly RAS Surveillance Test

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

All Critical Steps (shaded) 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:                 Simulator Operator will perform the dedicated operator functions referred to in the procedure. (Override LCV-383-2 and HCV-386 control switches in open position)

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

JPM No: B.1.b

JPM Title: Perform Monthly RAS Surveillance Test

JPM Setup:

1	Use a Mode 1 IC
2	Place HC-AI-43A in TEST position
3	Place CS-A1/SP-A (Derived Cutoff switch) in OFF
4	Place Channel A load shed switch in OFF
5	Place HC/344 in TEST
6	Place HC/345 in TEST
7	Place all S1-1 sequencer isolation switches (key switches) in OFF
8	RFP DSG10F LOCAL (simulator operator)
9	Place RM050/51 sample pump switch OFF
10	Place RM-065 sampel pump switch OFF
11	Place PPLS test switch in TEST and release

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

JPM No: B.1.b

JPM Title: Perform Monthly RAS Surveillance Test

---

**INITIATING CUE: OP-ST-ESF-0009 is in progress and complete through section 7.3. You are directed to perform RAS testing per section 7.4.**

**You will double as the Dedicated Operator for Attachment 4. (step 7.4.1)**

---

**Critical Steps shown in gray**

STEP	ELEMENT	STANDARD
1	Verify the following alarm windows are clear: <ul style="list-style-type: none"><li>• TESTING (A-6)</li><li>• STLS A SAFEGUARD SIGNAL (B-3)</li><li>• SAFETY INJECTION RECIRCULATION COMMAND (C-3)</li></ul>	<u>AI-30A</u> Listed alarm windows are CLEAR
2	Verify the following ERF Computer CRT displays are clear: <ul style="list-style-type: none"><li>• STLS</li><li>• RAS</li></ul>	<u>ERF Computer Screen</u> STLS and RAS have GREEN background
3	Ensure HCV-386 is open	<u>AI-30A</u> HCV-386 is OPEN and RED light ON
4	Log into Tech Spec 2.3(2)I and Tech Spec 2.4(i)b	<b>CUE: Tech Spec logging is complete</b>
5	Place HCV-383-3 in PULL-TO-OVERRIDE	<u>AI-30A</u> Switch to PULL-TO-OVEERRIDE position
6	Verify SIRWT HDT#1 RECIRC VALVES OFF NORMAL alarm	AI-30A, A33-1, G-2 is ON

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

JPM No: B.1.b

JPM Title: Perform Monthly RAS Surveillance Test

STEP	ELEMENT	STANDARD
7	Station a dedicated operator at LCV-383-2 to maintain switch open	<b>CUE: a dedicated operator is stationed at LCV-383-2 holding the switch in open</b> (Note: Simulator operator will override switch open) <b>[COP RSIL3832 100%]</b>
8	Station a dedicated operator at HCV-386 to maintain switch open	<b>CUE: a dedicated operator is stationed at HCV-386 holding the switch in open</b> (Note: Simulator operator will override switch open) <b>[COP RSIH386 100%]</b>
9	Place 86A/STLS test switch in TEST and verify TESTING in alarm, then release.	<u>AI-30A</u> Hold 86A/STLS test switch in test until TESTING alarm received, then release.
10	Verify the following relays have actuated: <ul style="list-style-type: none"> <li>• 86-A/STLS</li> <li>• 86-A/RAS</li> <li>• 86-AX/RAS</li> </ul>	<u>AI-30A</u> Lockout relays tripped and AMBER lights OFF (Note: 86-AX/RAS has no light)
11	Verify the following alarms: <ul style="list-style-type: none"> <li>• STLS A SAFEGUARD SIGNAL (B-3)</li> <li>• SAFETY INJECTION RECIRCULATION COMMAND (C-3)</li> </ul>	<u>AI-30A</u> Listed alarm windows are ON
12	Verify the following ERF computer points printout: <ul style="list-style-type: none"> <li>• 86-A/STLS TRIPPED</li> <li>• 86-A/RAS TRIPPED</li> </ul>	<u>ERF Printer</u> Tripped printout

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

JPM No: B.1.b

JPM Title: Perform Monthly RAS Surveillance Test

STEP	ELEMENT	STANDARD
13	Verify the following ERF CRT displays are in alarm: <ul style="list-style-type: none"> <li>• STLS</li> <li>• RAS</li> </ul>	<u>ERF Display Screen</u> STLS and RAS have RED background
14	Sequentially reset the following Lockout Relays: <ul style="list-style-type: none"> <li>• 86-A/STLS</li> <li>• 86-A/RAS</li> <li>• 86-AX/RAS</li> </ul>	AI-30A Reset lockout relays in order given. Lockout relays in RESET and AMBER lights ON (Note: 86-AX/RAS has no light)
15	Direct dedicated operator at LCV-383-2 to release control switch and ensure Red light remains on.	<b>CUE: LCV-383-2 control switch released and RED light on.</b> (Note: Simulator Operator will clear override)
16	Direct dedicated operator at HCV-386 to release control switch and ensure Red light remains on.	<b>CUE: HCV-386 control switch released and RED light on.</b> (Note: Simulator Operator will clear override)
17	Notify Dedicated Operators assigned to LCV-383-2 and HCV-386 that they are no longer needed.	<b>CUE: Dedicated operators assigned to LCV-383-2 and HCV-386 have left.</b>
18	Place Control switch HCV-383-3 in auto then ensure valve remains closed.	AI-30A HCV-383-3 Control switch in AUTO and GREEN light ON
19	Verify SIRWT HDR#1 RECIRC VALVES OFF NORMAL alarm is clear (G-2)	AI-30A,A33-1, G-2 Alarm Window is OFF
20	Place control switch HCV-481 in CLOSE, Then release and verify valve is closed.	CB-1,2,3 Place control switch to CLOSE, then release. HCV-481 GREEN light is ON.

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

JPM No: B.1.b

JPM Title: Perform Monthly RAS Surveillance Test

STEP	ELEMENT	STANDARD
21	Place control switch HCV-480 in CLOSE, Then release and verify HCV-484 is closed.	CB-1,2,3 Place control switch to CLOSE, then release. HCV-484 GREEN light is ON.  <b>CUE: Electrician has completed step 7.4.24. Measured voltage is 125 VDC.</b>
22	Notify Dedicated operator assigned to attachment 4 that RAS testing is complete.	<b>CUE: Dedicated operator assigned to attachment 4 has left.</b>
23	Exit tech specs	<b>CUE: Tech specs have been exited</b>

---

**Termination Criteria:** RAS test using 86A/STLS test switch is complete

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

JPM No: B.1.b

---

**INITIATING CUE:** OP-ST-ESF-0009 is in progress and complete through section 7.3. You are directed to perform RAS testing per section 7.4.

**You will double as the Dedicated Operator for Attachment 4. (step 7.4.1)**

---

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

JPM No: RO B.1.c

JPM Title: Transfer Pressurizer Pressure Control to Manual to support Maintenance

Location: Simulator

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

Reference(s): OI-RC-7  
K/A 000010 K4.03 (RO 3.8 / SRO 4.1)  
K/A 000010 A1.07 (RO 3.7 / SRO 3.7)

JPM Prepared by: Jerry Koske Date: \_\_\_\_\_

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

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



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

JPM No: RO B.1.c

JPM Title: Transfer Pressurizer Pressure Control to Manual to support Maintenance

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

All Critical Steps (shaded) 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:                 Select PRC-103 Y as the controlling channel

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

JPM No: RO B.1.c

JPM Title: Transfer Pressurizer Pressure Control to Manual to support Maintenance

---

**INITIATING CUE:** RCS pressure is at a nominal 2110 psia. All four RCPs are in operation. PRC-103Y is the controlling pressure channel. The Shift Manager directs you to make PRC-103X the controlling pressure channel and to shift PRC-103Y to Manual for I&C maintenance.

**All prerequisites are met**

---

**Critical Steps shown in gray**

---

STEP	ELEMENT	STANDARD
1	Refers to attachment 8: Ensure both Pressure Controllers are in Automatic: <ul style="list-style-type: none"><li>• PC-103X</li><li>• PC-103Y</li></ul>	<u>CB-1,2,3</u> Both controllers in AUTO with GREEN lamp ON
2	Adjust the setpoint pushbutton(s) on the non-selected controller to obtain same output indicated on selected controller	<u>CB-1,2,3</u> Adjust setpoint as necessary
3	Transfer the controlling channels by placing HC-103, Pressurizer Pressure Selector Switch to the opposite channel	<u>CB-1,2,3</u> HC-103 to the X channel
4	Ensure the selected controller is acting as follows: <ul style="list-style-type: none"><li>• Controller in AUTO</li><li>• Controller is controlling pressure at the desired setpoint</li></ul>	<u>CB-1,2,3</u> Controller in AUTO, GREEN light is ON, Pressure at nominal 2100 psia
5	Refers to attachment 7: Press Manual pushbutton on the selected controller	<u>CB-1,2,3</u> Press "M" on PC-103Y, AMBER light ON

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

JPM No: RO B.1.c

JPM Title: Transfer Pressurizer Pressure Control to Manual to support Maintenance

STEP	ELEMENT	STANDARD
6	Move the Manual Control lever as necessary to obtain desired reading on the output meter	<u>CB-1,2,3</u> May make adjustment to match PC-103X  <b>CUE: When PC-103Y is placed in manual, PC-103X fails high. [COP T:P103X 2500 120 sec ramp]</b>
7	Shift HC-103 to PC-103Y for pressure control in manual	<u>CB-1,2,3</u> HC-103 to PC-103Y
8	Adjust Output Meter as necessary to control pressure	Return Pressurizer Pressure to 2100 psia $\pm$ 10 psi. TM/LP trip must not occur

---

**Termination Criteria: Pressurizer pressure at 2100 psia in Manual Control**

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

JPM No: RO B.1.c

---

**INITIATING CUE:** RCS pressure is at a nominal 2110 psia. All four RCPs are in operation. PRC-103Y is the controlling pressure channel. The Shift Manager directs you to make PRC-103X the controlling pressure channel and to shift PRC-103Y to Manual for I&C maintenance.

**All prerequisites are met**

---

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

JPM No: SRO B.1.c

JPM Title: Fuel Handling Incident

Location: Simulator or Control Room

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

Reference(s): AOP-08  
K/A 000034 A2.01 (RO 3.6 / SRO 3.4)

JPM Prepared by: Jerry Koske      Date: \_\_\_\_\_

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

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

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

JPM No: SRO B.1.c

JPM Title: Fuel Handling Incident

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

All Critical Steps (shaded) 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

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

JPM No: SRO B.1.c

JPM Title: Fuel Handling Incident

---

**INITIATING CUE:** The plant is in a refueling shutdown. Fuel movement is in progress. RM-050, RM-051 and RM-073 have just alarmed and VIAS has actuated.

The Control Room has been notified that a fuel bundle has dropped in the transfer canal inside the containment. You have been directed to take appropriate actions.

---

**Critical Steps shown in gray**

STEP	ELEMENT	STANDARD
1	Enters AOP-08	Enters AOP-08
2	Notify plant personnel of event	Announce over Gaitronics
3	Direct RP to survey affected area	<b>Cue: RP in containment is checking area</b>
4	Initiate Emergency Plan per EPIP-OSC-1	<b>Cue: Shift Manager will initiate Emergency Plan.</b>
5	Direct Security Shift Manager to close Room 66 Roll-up Doors	Contact Security Shift Manager. <b>Cue: Security Shift Manager reports that roll-up doors are closed.</b>
6	Direct Shift Outage Manager to close all containment penetrations open to the outside atmosphere.	Contact Shift Outage manager. <b>Cue: Shift Outage Manager reports that all containment penetrations open to the outside atmosphere are closed.</b>
7.	Direct EONA to close at least one PAL door	Contact EONA. <b>Cue: EONA report that a PAL door is closed.</b>

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

JPM No: SRO B.1.c

JPM Title: Fuel Handling Incident

STEP	ELEMENT	STANDARD
8	Verify VIAS actuation	Goes to AOP-08, attachment A
7	Ensure Both of the following Containment Vent Fans are operating: <ul style="list-style-type: none"> <li>• VA-3A</li> <li>• VA-3B</li> </ul>	<u>AI-30A/B</u> Control Switches in After-Start (RED FLAG) and RED lights lit
8	Ensure containment vent fans have switched to filtered mode.	<u>AI-30A/B</u> Check HCV-724 and HCV-725 in filter mode with RED lights lit
9	Ensure that All of the Containment Purge Fans are stopped: <ul style="list-style-type: none"> <li>• VA-24A/B</li> <li>• VA-32A/B</li> <li>• VA-76</li> <li>• VA-77</li> </ul>	<u>AI-44</u> Fans stopped and GREEN lights lit or switch placed in Pull-To-Lock
10	Ensure ALL of the following are closed: <ul style="list-style-type: none"> <li>• PCV-742A/B/C/D</li> <li>• PCV-742E/F/G/H</li> <li>• HCV-746A/B</li> </ul>	<u>AI-44</u> Valves closed and GREEN lights lit.
11	Ensure RM-050/051 Sample pump is stopped	<u>AI-33</u> Pump switch in STOP position
12	Ensure FCV-532C, “Header Isolation Valve” is closed	Contact EONA  <b>Cue: EONA reports from AI-100 that FCV-532C is Closed</b>
13	Stop proper Control Room Ventilation Fan	<u>AI-106A/B</u>  <b>Cue: When at AI-106A/B, provide the following information: VA-63B, VA-46A and VA-46B are running.</b>



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

JPM No: SRO B.1.c

JPM Title: Fuel Handling Incident

STEP	ELEMENT	STANDARD
13 cont	Stop VA-46A	<u>AI-106A</u> Place Control switch in After-Stop position. GREEN light lit
14	Place Control Room Ventilation Mode switch in Filtered Air Position	<u>AI-46A</u> HC-VA-46A-1 switch in FILT-AIR <u>AI-46B</u> HC-VA-46B-1 switch in FILT-AIR
15	Ensure RM-065 is operating	<u>AI-106A</u> HC-RM-65 RED light lit
16	If directed by RP, don respirator protection	<b>Cue: RP reports that respirator protection is not required in Control Room.</b>

---

**Termination Criteria:** Ventilation systems are properly aligned.

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

JPM No: SRO B.1.c

---

**INITIATING CUE:** The plant is in a refueling shutdown. Fuel movement is in progress. RM-050, RM-051 and RM-073 have just alarmed and VIAS has actuated.

The Control Room has been notified that a fuel bundle has dropped in the transfer canal inside the containment. You have been directed to take appropriate actions.

---

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

JPM No: B.1.d

JPM Title: Restore Shutdown Cooling following an Instrument Failure

Location: Simulator

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

Reference(s): OI-SC-1  
OI-SC-2  
K/A 005000 A4.01 (RO 3.6 / SRO 3.4)  
AOP-19

JPM Prepared by: Jerry Koske      Date: \_\_\_\_\_

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

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

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

JPM No: B.1.d

JPM Title: Restore Shutdown Cooling following an Instrument Failure

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

All Critical Steps (shaded) 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 will be a dynamic JPM in the simulator. The simulator operator will fail P-118 high which will result in HCV-347 and HCV-348 closing.  
**[Ensure LI-197, LIS-119 enabled]**

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

JPM No: B.1.d

JPM Title: Restore Shutdown Cooling following an Instrument Failure

---

**INITIATING CUE:** The plant is on shutdown cooling on LPSI SI-1A. The RCS is intact and time to boil is 3 hours. No refueling outage is in progress. Both SI-1A and SI-1B are lined up for shutdown cooling.

You are directed to respond to the alarms on panel CB-1,2,3.

---

**Critical Steps shown in gray**

STEP	ELEMENT	STANDARD
		<b>Note: The following alarms will come in:</b>
		<b>“SHUTDOWN COOLING VALVES CLOSED SIG FAIL OR VIOLATION”</b>
		<b>“SHUTDOWN COOLIN FLOW HI-LO”</b>
1	Respond to annunciators	Reviews ARP for alarms and transitions to AOP-19.
2	Implement the Emergency Plan	<b>CUE: Shift Manager has entered Emergency Plan</b>
3	Verify RCS water level above hot leg centerline.	<u>CB-1,2,3</u> LI-197 at least 1006.5 feet LIS-119 at least 1006.5 feet  <u>ERF Computer</u> PVLMS > 29%  <u>In containment</u> Sight glass LI-199 at least 1006.5 feet

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

JPM No: B.1.d

JPM Title: Restore Shutdown Cooling following an Instrument Failure

STEP	ELEMENT	STANDARD
4	Verify RCS water level constant or rising	Verifies level trend from, at least, one of the following: <u>CB-1,2,3</u> <ul style="list-style-type: none"> <li>• LI-106</li> <li>• LI-197</li> <li>• LI-119</li> </ul>
5	Verify proper LPSI pump operation by meeting all of the following criteria: <ul style="list-style-type: none"> <li>• LPSI Pump current stable</li> <li>• LPSI flow greater than or equal to 200 gpm</li> </ul>	<u>AI-30A</u> Ammeter for SI-1A, current is varying  <u>CB-1,2,3</u> FI-326 shows low flow
6	Determines that pump current is not stable and shuts down SI-1A	<u>AI-30A</u> SI-1A control switch to AFTER-STOP, GREEN light lit
<b>CUE: LPSI discharge header is operable</b>		
7	Determines that RCS pressure instrument P-118 has failed high	
8	Ensures that the following valves are open: <ul style="list-style-type: none"> <li>a. FCV-326</li> <li>b. HCV-335</li> <li>c. HCV-341</li> <li>d. HCV-348</li> <li>e. HCV-347</li> </ul>	<ul style="list-style-type: none"> <li>a. RED light lit on <u>CB-1,2,3</u></li> <li>b. RED light lit on <u>AI-30B</u></li> <li>c. Verify controller signal</li> <li>d. Place P-118 "Pressurizer pressure PC-118 auto signal override HC-347/348" switch to OVERRIDE. Verify RED light lit as valve opens</li> <li>e. Hold HCV-347 to OPEN. Verify RED light lit.</li> </ul>
<b>Cue: LPSI pump venting not required</b>		

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

JPM No: B.1.d

JPM Title: Restore Shutdown Cooling following an Instrument Failure

STEP	ELEMENT	STANDARD
9	Place FCV-326 in manual	<u>CB-1,2,3</u> Select MANUAL on FCV-326 controller
10	If RCS level is above hot leg centerline, start one LPSI pump, SI-1A or SI-1B.	<u>AI-30A/B</u> Pump control switch in AFTER START and RED light lit
11	Adjust FCV-326 to obtain 1500 gpm flow	<u>CB-1,2,3</u> Operate controller in manual until FI-326 reads approximately 1500 gpm
12	Place FCV-326 in automatic	<u>CB-1,2,3</u> Select AUTO on FCV-326

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**Termination Criteria: Shutdown Cooling Reestablished**

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

JPM No: B.1.d

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**INITIATING CUE:** The plant is on shutdown cooling on LPSI SI-1A. The RCS is intact and time to boil is 3 hours. No refueling outage is in progress. Both SI-1A and SI-1B are lined up for shutdown cooling.

You are directed to respond to the alarms on panel CB-1,2,3.

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

JPM No: B.1.e

JPM Title: Shift 4160V Buses 1A3 and 1A4 from 345KV to 161 KV

Location: Simulator

Approximate Time: 6 minutes Actual Time: \_\_\_\_\_

Reference(s): OI-EE-1, attachment 1  
K/A 000062 K1.04 (RO 3.7 / SRO 4.2)  
K/A 000062 A2.01 (RO 3.4 / SRO 3.9)

JPM Prepared by: Jerry Koske Date: \_\_\_\_\_

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

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

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

JPM No: B.1.e

JPM Title: Shift 4160V Buses 1A3 and 1A4 from 345KV to 161 KV

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

All Critical Steps (shaded) 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:               Dynamic JPM on the simulator  
                              Insert then clear malfunction [MFP SWD02B]  
                              [RFP SWD03D DISABLE]

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

JPM No: B.1.e

JPM Title: Shift 4160V Buses 1A3 and 1A4 from 345KV to 161 KV

---

**INITIATING CUE:** A loss of 161 KV has occurred due to a grid problem. Busses 1A3 and 1A4 transferred to 345 KV. AOP-31, section II has been entered and appropriate actions taken The 161 KV grid problem has been fixed and 161 KV is available.

You are directed to restore normal power to busses 1A3 and 1A4 beginning with AOP-31, section II, step 10.

---

**Critical Steps shown in gray**

STEP	ELEMENT	STANDARD
1	Ensure Lockout Relay 86/161 is reset	<u>AI-22</u> 86 Relay RESET
2	Ensure all of the following Lockout Relays are reset: <ul style="list-style-type: none"><li>• 86-1/T1A-4</li><li>• 86-2/T1A-4</li><li>• 86-1/T1A-3</li><li>• 86-2/T1A-3</li><li>• 86X/FT161</li></ul>	<u>AI-24, AI-25, AI-46</u> Relays RESET
3	Synchronize and Close at least one of the following breakers: <ul style="list-style-type: none"><li>• Breaker 110</li><li>• Breaker 111</li></ul>	<u>CB-20</u> Insert Sync switch handle and turn to ON Breaker switch to AFTER CLOSE RED light lit
4	Enter OI-EE-1, Attachment 1	
5	Ensure both fast Transfer switches in manual: <ul style="list-style-type: none"><li>• 43/1A1-1A3</li><li>• 43/1A2-1A4</li></ul>	<u>CB-20</u> Both switches in MANUAL
6	Turn 1A33 Synchroscope ON	<u>CB-20</u> Insert Sync switch handle and turn

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

JPM No: B.1.e

JPM Title: Shift 4160V Buses 1A3 and 1A4 from 345KV to 161 KV

STEP	ELEMENT	STANDARD
7	Verify incoming and running voltages are matched	to ON <u>CB-20</u> Verify voltages within 25 volts
8	Verify Synchroscope at 12 o'clock	<u>CB-20</u> Indicator at 12 o'clock
9	Close Breaker 1A33	<u>CB-20</u> Breaker 1A33 in AFTER CLOSE, RED light lit
10	Open Breaker 1A13	<u>CB-20</u> Breaker 1A13 in AFTER TRIP. GREEN light lit
11	Turn Off Synchroscope	Sync switch handle to OFF Verify loads still energized
12	Turn 1A44 Synchroscope ON	<u>CB-20</u> Insert Sync switch handle and turn to ON
13	Verify incoming and running voltages are matched	<u>CB-20</u> Verify voltages within 25 volts
14	Verify Synchroscope at 12 o'clock	<u>CB-20</u> Indicator at 12 o'clock
15	Close Breaker 1A44	<u>CB-20</u> Breaker 1A44 in AFTER CLOSE, RED light lit
16	Open Breaker 1A24	<u>CB-20</u> Breaker 1A24 in AFTER TRIP. GREEN light lit
17	Turn Off Synchroscope	Sync switch handle to OFF Verify loads still energized

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

JPM No: B.1.e

JPM Title: Shift 4160V Buses 1A3 and 1A4 from 345KV to 161 KV

STEP	ELEMENT	STANDARD
18	Verify conditions for fast transfer met: <ul style="list-style-type: none"><li>• Lock-out relays amber lights on</li><li>• Appropriate 4160V breakers not in pull-to-lock</li><li>• Power is available</li></ul>	<u>CB-20</u> <ul style="list-style-type: none"><li>• AMBER lights lit (vertical panel)</li><li>• Control Switches not in PULL-TO-LOCK</li><li>• Voltmeters show proper voltages</li></ul>
19	Place Fast Transfer switches in AUTO <ul style="list-style-type: none"><li>• 43/1A1-1A3</li><li>• 43/1A2-1A4</li></ul>	<u>CB-20</u> Both Switches in AUTO

---

**Termination Criteria: Busses 1A3 and 1A4 powered from 161 KV**

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

JPM No: B.1.e

---

**INITIATING CUE:** A loss of 161 KV has occurred due to a grid problem. Busses 1A3 and 1A4 transferred to 345 KV. AOP-31, section II has been entered and appropriate actions taken. The 161 KV grid problem has been fixed and 161 KV is available.

You are directed to restore normal power to busses 1A3 and 1A4 beginning with AOP-31, section II, step 10.

---

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

JPM No: B.1.f

JPM Title: Perform DSS Matrix Channel Trip Manual Actuation Relay Test

Location: Simulator

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

Reference(s): IC-FT-DSS-0002, sections 7.6 and 7.7  
LER 95-005  
K/A 012000 A4.03 (RO 3.6 / SRO 3.6)

JPM Prepared by: Jerry Koske Date: \_\_\_\_\_

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

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

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

JPM No: B.1.f

JPM Title: Perform DSS Matrix Channel Trip Manual Actuation Relay Test

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

All Critical Steps (shaded) 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:               Dynamic simulator JPM  
                              Simulator operator will need to run files to override  
                              matrix light status



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

JPM No: B.1.f

JPM Title: Perform DSS Matrix Channel Trip Manual Actuation Relay Test

---

**INITIATING CUE:** I&C is testing the DSS system using IC-FT-DSS-0002. Sections 7.6 and 7.7 of this procedure are conducted by licensed operators.

You have been directed to perform section 7.6 and 7.7 of IC-FT-DSS-0002.

---

**Critical Steps shown in gray**

STEP	ELEMENT	STANDARD
1	Verify the following alarm windows are clear: <ul style="list-style-type: none"><li>• DSS 86A/DSS ACTUATED</li><li>• TEST SWITCH A1/TS-DSS OFF NORMAL</li><li>• DSS MATRIX A BLOCKED</li></ul>	<u>AI-66A</u> Listed Alarm Windows CLEAR  <b>[SIM OP File #1]</b>
2	Place switch CHAN A DSS TEST OR BYPASS SW A1/TS-DSS in test	<u>AI-66A</u> Insert key in switch and place in TEST position
3.	Verify alarms: <ul style="list-style-type: none"><li>• TEST SWITCH A1/TS-DSS OFF NORMAL</li><li>• DSS MATRIX A BLOCKED</li></ul>	<u>AI-66A</u> Listed Alarm Windows LIT
4	Verify DSS Lockout relay 86A/DSS is reset	<u>AI-66A</u> Relay in RESET position
5	Turn DSS Manual Trip Switch A/TS-DSS to trip position	<u>AI-66A</u> Turn A/TS-DSS to TRIP position and release  <b>[SIM OP File #2]</b>

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

JPM No: B.1.f

JPM Title: Perform DSS Matrix Channel Trip Manual Actuation Relay Test

STEP	ELEMENT	STANDARD
6	Verify Clutch power Supply breakers are closed: <ul style="list-style-type: none"> <li>• CB-AB</li> <li>• CB-CD</li> </ul>	<u>AI-57</u> Breakers CLOSED (Full Up)
7	Verify the following parameters: <ul style="list-style-type: none"> <li>a. “DSS 86A/DSS ACTUATED” alarm</li> <li>b. DSS Trip relay 94-A1-DSS white light is on</li> <li>c. DSS Trip relay 94-A2-DSS white light is on</li> <li>d. DSS lockout relay 86A/DSS amber light is off</li> <li>e. All four DSS Matrix supervisory amber lights are off</li> <li>f. Lockout relay 86A/DSS is tripped</li> </ul>	<u>AI-66A</u> <ul style="list-style-type: none"> <li>a. Alarm Window LIT</li> <li>b. WHITE light is ON</li> <li>c. WHITE light is ON</li> <li>d. AMBER light is OFF</li> <li>e. AMBER lights are OFF</li> <li>f. Lockout Relay is TRIPPED</li> </ul>
8	Reset DSS Lockout Relay 86A/DSS	<u>AI-66A</u> Lockout relay RESET  <b>[SIM OP File #1]</b>
9	Verify the following: <ul style="list-style-type: none"> <li>a. All four DSS Matrix supervisory amber lights are on</li> <li>b. DSS lockout relay 86A/DSS amber light is on</li> <li>c. DSS Trip relay 94-A2-DSS white light is off</li> <li>d. DSS Trip relay 94-A1-DSS white light is off</li> <li>e. “DSS 86A/DSS ACTUATED” alarm is clear</li> </ul>	<u>AI-66A</u> <ul style="list-style-type: none"> <li>a. AMBER lights ON</li> <li>b. AMBER light ON</li> <li>c. WHITE light OFF</li> <li>d. WHITE light OFF</li> <li>e. Alarm window CLEAR</li> </ul>

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

JPM No: B.1.f

JPM Title: Perform DSS Matrix Channel Trip Manual Actuation Relay Test

STEP	ELEMENT	STANDARD
10	Place CHAN A DSS TEST OR BYPASS SW switch in normal	<u>AI-66A</u> Switch to NORMAL
11	Verify the following: <ul style="list-style-type: none"> <li>• DSS MATRIX A BLOCKED alarm window is clear</li> <li>• TEST SWITCH A1/TS-DSS OFF NORMAL alarm window is clear</li> </ul>	<u>AI-66A</u> Both alarm windows CLEAR
12	Verify the following alarm windows are clear: <ul style="list-style-type: none"> <li>• DSS 86B/DSS ACTUATED</li> <li>• TEST SWITCH B1/TS-DSS OFF NORMAL</li> <li>• DSS MATRIX B BLOCKED</li> </ul>	<u>AI-66B</u> Listed Alarm Windows CLEAR
13	Place switch CHAN B DSS TEST OR BYPASS SW B1/TS-DSS in test	<u>AI-66B</u> Insert key in switch and place in TEST position
14	Verify alarms: <ul style="list-style-type: none"> <li>• TEST SWITCH B1/TS-DSS OFF NORMAL</li> <li>• DSS MATRIX B BLOCKED</li> </ul> Verify DSS Lockout relay 86B/DSS is reset	<u>AI-66B</u> Listed Alarm Windows LIT   <u>AI-66B</u> Relay in RESET position
15	Turn DSS Manual Trip Switch B/TS-DSS to trip position	<u>AI-66B</u> Turn B/TS-DSS to TRIP position and release  <b>[SIM OP File#3]</b>
16	Verify Clutch power Supply breakers are closed: <ul style="list-style-type: none"> <li>• CB-AB</li> <li>• CB-CD</li> </ul>	<u>AI-57</u> Breakers CLOSED (Full Up)

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

JPM No: B.1.f

JPM Title: Perform DSS Matrix Channel Trip Manual Actuation Relay Test

STEP	ELEMENT	STANDARD
17	Verify the following parameters:	<u>AI-66A</u>
	a. "DSS 86B/DSS ACTUATED" alarm	a. Alarm Window LIT
	b. DSS Trip relay 94-B1-DSS white light is on	b. WHITE light is ON
	c. DSS Trip relay 94-B2-DSS white light is on	c. WHITE light is ON
	d. DSS lockout relay 86B/DSS amber light is off	d. AMBER light is OFF
	e. All four DSS Matrix supervisory amber lights are off	e. AMBER lights are OFF
	f. Lockout relay 86B/DSS is tripped	f. Lockout Relay is TRIPPED
18	Reset DSS Lockout Relay 86B/DSS	<u>AI-66B</u> Lockout relay RESET  <b>[SIM OP File#1]</b>
19	Verify the following:	<u>AI-66B</u>
	a. All four DSS Matrix supervisory amber lights are on	a. AMBER lights ON
	b. DSS lockout relay 86B/DSS amber light is on	b. AMBER light ON
	c. DSS Trip relay 94-B2-DSS white light is off	c. WHITE light OFF
	d. DSS Trip relay 94-B1-DSS white light is off	d. WHITE light OFF
	e. "DSS 86B/DSS ACTUATED" alarm is clear	e. Alarm window CLEAR
20	Place CHAN B DSS TEST OR BYPASS SW switch in normal	<u>AI-66B</u> Switch to NORMAL

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

JPM No: B.1.f

JPM Title: Perform DSS Matrix Channel Trip Manual Actuation Relay Test

STEP	ELEMENT	STANDARD
21	Verify the following: <ul style="list-style-type: none"><li>• DSS MATRIX B BLOCKED alarm window is clear</li><li>• TEST SWITCH B1/TS-DSS OFF NORMAL alarm window is clear</li></ul>	<u>AI-66B</u> Both alarm windows CLEAR

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**Termination Criteria:** Section 7.6 and 7.7 of IC-FT-DSS-0002 are complete

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

JPM No: B.1.f

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**INITIATING CUE:** I&C is testing the DSS system using IC-FT-DSS-0002. Sections 7.6 and 7.7 of this procedure are conducted by licensed operators.

You have been directed to perform section 7.6 and 7.7 of IC-FT-DSS-0002.

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

JPM No: B.1.g

JPM Title: Operate AFW system from AI-179 following Control Room evacuation

Location: Simulator

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

Reference(s): AOP-07  
K/A 000061 K1.01 ( RO 4.1 / SRO 4.2)  
K/A 000061 A1.01 (RO 3.9 / SRO 4.2)

JPM Prepared by: Jerry Koske Date: \_\_\_\_\_

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

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

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

JPM No: B.1.g

JPM Title: Operate AFW system from AI-179 following Control Room evacuation

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

All Critical Steps (shaded) 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 dynamic JPM on the simulator. It uses both the control room and ASP portions of the simulator.

Note: The ASP portion of this procedure is normally performed by the CRS. However, operating AFW from AI-179 is expected RO knowledge.



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

JPM No: B.1.g

JPM Title: Operate AFW system from AI-179 following Control Room evacuation

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**INITIATING CUE:** The Shift Manager has directed an evacuation of the Control Room. You are directed to perform the control room portions of AOP-07 and then establish control at the Alternate Shutdown Panels. (You have a radio and the AOP-06 keys)

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**Critical Steps shown in gray**

STEP	ELEMENT	STANDARD
1	Manually TRIP the reactor	<u>CB-4</u>  Press reactor Trip pushbutton Verify Reactor has tripped
2	Verify the Turbine has tripped as indicated by stop and intercept valves closed	<u>CB-10,11 (vertical)</u>  Verify stop and intercept valve indicators on bottom
3	Place 43/FW Switch in “OFF”	<u>CB-10,11</u>  43/FW switch placed in “OFF”
4	Ensure no more than one condensate pump, FW-2A/2B/2C, running.	<u>CB-10,11</u>  Trips one (and only one) condensate pump. (Control switch green flagged, GREEN light lit)
5	Stop all running Heater Drain pumps, FW-5A/5B/5C.	<u>CB-10,11</u>  Trips both running Heater Drain pumps. (Control switches green flagged, GREEN lights lit)

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

JPM No: B.1.g

JPM Title: Operate AFW system from AI-179 following Control Room evacuation

STEP	ELEMENT	STANDARD
6	Ensure no more than one Feed pump, FW-4A/4B/4C, running.	<u>CB-10,11</u>  Trips one (and only one) Feed pump. (Control switch green flagged, GREEN light lit)
7	Ensure the following Turbine Lube Oil equipment is running: <ul style="list-style-type: none"> <li>• LO-3, Turning Gear Oil Pump</li> <li>• LO-8, Motor Suction Oil Pump</li> <li>• LO-4, DC-Oil Pump</li> <li>• Turbine Lift Pumps, LO-14A/B/C</li> </ul>	<u>CB-10,11</u>  Starts each of the listed pumps by placing it's control switch in after start (red flag) RED light lit.         <b>CUE: The remaining actions in step one have been taken. You are directed to AI-185 to continue with step two. (Direct examinee to simulator Aux Shutdown panel)</b>
8	Place REMOTE-LOCAL Transfer Switch 43 in Local	<u>AI-185</u> REMOTE LOCAL TRANSFER SWITCH 43 in LOCAL Lockout relays actuate, AMBER lights OFF
9	Verify control transferred by observing indicating lights lit <ul style="list-style-type: none"> <li>• HCV-239</li> <li>• CH-1B</li> </ul>	<u>AI-185</u> Indicating Lights LIT
10	Place YCV-1045 control switch in PULL-TO-LOCK	<u>AI-179</u> Control Switch in PULL-TO LOCK

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

JPM No: B.1.g

JPM Title: Operate AFW system from AI-179 following Control Room evacuation

STEP	ELEMENT	STANDARD
11	Place both AFW Controls Transfer Switches 43/RC-2A/B in LOCAL	<u>AI-179</u> Both Switches in LOCAL
12	Verify both AFW Controls Transfer Relays are in TRIP.	<u>AI-179</u> 86 relays are TRIPPED AMBER lights OFF
13	Verify Following valves are OPEN: <ul style="list-style-type: none"> <li>• HCV-1107A</li> <li>• HCV-1107B</li> <li>• HCV-1108A</li> <li>• HCV-1108B</li> <li>• YCV-1045A</li> <li>• YCV-1045B</li> </ul>	<u>AI-179</u> RED lights ON
14	Start Wide range Channel “D” Recorder.	<u>AI-212</u> Two toggle switches inside cover to ON.
15	Maintain pressurizer level 45-60%	<u>AI-185</u> Verify pressurizer level. Operate CH-1B as required
16	Maintain RCS pressure 2050-2150 psia	<u>AI-185</u> Verify pressurizer pressure. Operate backup heaters as required
17	Maintain S/G levels	<u>AI-179</u> Verify S/G levels Note: levels will be below control band.

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

JPM No: B.1.g

JPM Title: Operate AFW system from AI-179 following Control Room evacuation

STEP	ELEMENT	STANDARD
18	Verify HCV-1384 is CLOSED	<b>CUE: EONT reports HCV-1384 is CLOSED</b>
19	Place YCV-1045 in AFTER-START	<u>AI-179</u> YCV-1045 control switch in AFTER-START. FW-10 running light is ON
20	Place both of the following switches in THROTTLE: <ul style="list-style-type: none"><li>• HCV-1107B</li><li>• HCV-1108B</li></ul>	<u>AI-179</u> HCV-1107B and HCV-1108B switches in THROTTLE
21	Throttle HCV-1107B and HCV-1108B using controllers	<u>AI-179</u> Regulate Air Loaders for desired flow
22	Verify S/G pressures greater than 850 psia	<u>AI-179</u> Verify S/G pressures
23	Establish contact with STA	CUE: STA reports All Safety Functions are being met
24	Direct EONT to maintain EFWST level	<b>CUE: EONT is maintaining EFWST level</b>  <b>CUE: Plant Cooldown is not required</b>

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**Termination Criteria:** Control of AFW has been established at the alternate Shutdown panels

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

JPM No: B.1.g

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**INITIATING CUE:** The Shift Manager has directed an evacuation of the Control Room. You are directed to perform the control room portions of AOP-07 and then establish control at the Alternate Shutdown Panels. (You have a radio and the AOP-06 keys)

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

JPM No: B.2.a

JPM Title: Line up Condenser Evacuation to AB stack

Location: Plant – Aux Building and Turbine Building

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

Reference(s): OI-CE-1  
K/A 000037 AA2.07 (RO 3.1 / SRO 3.6)

JPM Prepared by: Jerry Koske      Date: \_\_\_\_\_

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

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

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

JPM No: B.2.a

JPM Title: Line up Condenser Evacuation to AB stack

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

All Critical Steps (shaded) 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:   Requires RCA entry

Comments:               This JPM begins in the RCA and finishes in the  
Turbine Building

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

JPM No: B.2.a

JPM Title: Line up Condenser Evacuation to AB stack

---

**INITIATING CUE:** Due to High Activity in the RCS, the Shift Manager has directed you to line up Condenser Evacuation to the AUX Building Stack. You are to perform both the EONA and EONT portion of this procedure.

All Prerequisites given in OI-CE-1, attachment 2 are met.

---

**Critical Steps shown in gray**

STEP	ELEMENT	STANDARD
1	Slowly Open VA-412	<u>AB Corr. 26</u> Slowly Turn valve to OPEN position
2	Monitor VD-29, Condenser Evacuation Liquid Drain Trap, for water flow to drain hub	<u>Room 59</u> Monitor Trap for Flow  <b>CUE: Trickle flow (Do Not enter contaminated area)</b>
3	Close the following valves: <ul style="list-style-type: none"><li>• VD-359</li><li>• VD-360</li><li>• VD-361</li></ul>	<u>Turbine Building EL 1011</u> Valves turned to CLOSE position
4	Notify Control Room prior to closing VD-423	<b>CUE: Control room has been notified</b>
5	Close VD-423	<u>Turbine Building EL 1036</u> Turn Valve to CLOSED position  <b>CUE: Control Room reports condenser vacuum is steady</b>



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

JPM No: B.2.a

JPM Title: Line up Condenser Evacuation to AB stack

STEP	ELEMENT	STANDARD
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**Termination Criteria:    Condenser Evacuation is discharging through the  
   AB Stack**

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

JPM No: B.2.A

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**INITIATING CUE:** Due to High Activity in the RCS, the Shift Manager has directed you to line up Condenser Evacuation to the AUX Building Stack. You are to perform both the EONA and EONT portion of this procedure.

All Prerequisites given in OI-CE-1, attachment 2 are met.

---

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

JPM No: RO B.2.b

JPM Title: Startup Hydrogen Purge System

Location: Aux Building

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

Reference(s): OI-VA-1 Attachment 5A  
K/A 028000 A2.02 (RO 3.5 / SRO 3.9)

JPM Prepared by: Jerry Koske Date: \_\_\_\_\_

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

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

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

JPM No: RO B.2.b

JPM Title: Startup Hydrogen Purge System

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

All Critical Steps (shaded) 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:   Performed in RCA

Comments:

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

JPM No: RO B.2.b

JPM Title: Startup Hydrogen Purge System

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**INITIATING CUE:** The plant is in accident recovery following a LOCA. CIAS and VIAS have initiated. Containment hydrogen is >3%. A containment hydrogen purge is required. You have been directed to perform the Aux building steps of OI-VA-1, attachment 5A to start a hydrogen purge using VA-80A.

The procedure is complete through step 6.

---

**Critical Steps shown in gray**

STEP	ELEMENT	STANDARD
1	Ensure VA-411, VA-82 bypass is closed	<u>Corr. 26</u> IA-VA-411-B1 in FILTERED
2	Ensure VA-291/VA-279 combined remote operator is closed.	<u>Corr 26</u> VA-291/VA-279 CLOSED
3	Ensure VA-282/VA-284 combined remote operator is closed.	<u>Corr 26</u> VA-282/VA-284 CLOSED
4	Open hydrogen purge valves for VA-80A: <ul style="list-style-type: none"><li>• VA-290</li><li>• VA-292</li><li>• VA-289:</li></ul>	<u>Corr 26</u> Unlock and OPEN valves
5	Contact Control Room	<b>CUE: Control room reports procedure steps 8,9 and 10 have been completed</b>
6	Start hydrogen purge fan	<u>AI-100</u> Place VA-80A control switch in PULL TO OVERRIDE Red Light ON Green Light OFF

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

JPM No: RO B.2.b

JPM Title: Startup Hydrogen Purge System

STEP	ELEMENT	STANDARD
7	Monitor DPI-899D	<u>Corr 26</u>

**CUE: DPI-899D indicates 10”w.g.**

---

**Termination Criteria:    Hydrogen purge has been started**

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

JPM No: RO B.2.b

---

**INITIATING CUE:** The plant is in accident recovery following a LOCA. CIAS and VIAS have initiated. Containment hydrogen is >3%. A containment hydrogen purge is required. You have been directed to perform the Aux building steps of OI-VA-1, attachment 5A to start a hydrogen purge using VA-80A.

The procedure is complete through step 6.

---

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

JPM No: SRO B.2.b

JPM Title: Waste Gas transfer from the vent header to the gas decay tank

Location: Auxiliary Building Controlled Area

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

Reference(s): OI-WDG-1, attachment 3  
K/A 071000 A4.05 (RO 2.6 / SRO 2.6)

JPM Prepared by: Jerry Koske Date: \_\_\_\_\_

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

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



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

JPM No: SRO B.2.b

JPM Title: Waste Gas transfer from the vent header to the gas decay tank

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

All Critical Steps (shaded) 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 is performed in the RCA

Comments:

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

JPM No: SRO B.2.b

JPM Title: Waste Gas transfer from the vent header to the gas decay tank

---

**INITIATING CUE:** Vent header pressure is at 2 psig and you are directed to pump the vent header to the in service gas decay tank using WD-28A until vent header pressure has been reduced to 1 psig  
AI-110 is inoperable. The Shift Chemist is on standby to take samples when notified.

All prerequisites are met.

---

**Critical Steps shown in gray**

STEP	ELEMENT	STANDARD
1	Verify VCT gas sample is secured.	<u>AI-110</u> WD-242 and WD-1080 indicate closed. <b>Note: If examinee contacts HP, CUE that valves have been surveyed and are not contaminated.</b>
2	Verify that the gas vent header is drained	Room 13  <b>CUE: Before examinee enters room 13, tell him that “The vent header in room 13 has been drained”</b>
3	Ensure that gas compressor is primed: a. DW-156 is open b. WD-28A moisture separator tank level visible below centerline	Room 16  a. DW-156 is OPEN b. <b>CUE: Water level is above the pump rotor centerline</b>
4	Drain moisture separator tank a. OPEN WD-216 b. Drain c. CLOSE WD-216	Room 16 a. WD-216 OPEN b. <b>CUE: Water level is below pump rotor centerline.</b> c. WD-216 CLOSED

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

JPM No: SRO B.2.b

JPM Title: Waste Gas transfer from the vent header to the gas decay tank

STEP	ELEMENT	STANDARD
5.	Start WD-28A to pump the Vent Header	AI-100 WD-28A control switch to hand RED light ON
6	Monitor the following: <ul style="list-style-type: none"><li>• WGDT Pressure</li><li>• Vent Header Pressure</li></ul>	<u>AI-100</u> <b>CUE: WGDT = 65 psig</b> <b>Vent Header = 1.0 psig</b>
7	Secure gas transfer	<u>AI-100</u> WD-28A control switch to OFF and GREEN light lit
8	Notify Shift Chemist to obtain grab samples.	<b>CUE: Shift Chemist Acknowledges</b>
9	Notify Shift manager to review Tech Spec 2.9	<b>CUE: Shift Manager Notified</b>
10	Check WGDT pressure	<b>CUE: Pressure is 70 psig.</b>

---

**Termination Criteria:** Waste gas has been transferred from the Vent Header to the in-service gas decay tank

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

JPM No: SRO B.2.b

---

**INITIATING CUE:** Vent header pressure is at 2 psig and you are directed to pump the vent header to the in service gas decay tank using WD-28A until vent header pressure has been reduced to 1 psig  
AI-110 is inoperable. The Shift Chemist is on standby to take samples when notified.

All prerequisites are met.

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

JPM No: B.2.C

JPM Title: Switch Inverter Power Supply from bypass to normal

Location: Switchgear Room

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

Reference(s): OI-EE-4, attachment 1  
K/A 000057 AA1.01 (RO 3.7 / SRO 3.7)

JPM Prepared by: Jerry Koske      Date: \_\_\_\_\_

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

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

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

JPM No: B.2.C

JPM Title: Switch Inverter Power Supply from bypass to normal

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

All Critical Steps (shaded) 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: B.2.C

JPM Title: Switch Inverter Power Supply from bypass to normal

---

**INITIATING CUE:** Instrument Inverter “A” is out of service. AI-40A is being supplied by the bypass transformer. The electricians have cleared their tags and you have been directed to start up inverter “A” and place it in service.

**All prerequisites are complete**

---

**Critical Steps shown in gray**

STEP	ELEMENT	STANDARD
1	Ensure the input breaker, EE-8H-CB1 is open	<u>Inverter “A” (EE-8H)</u> Breaker in OPEN position
2	Ensure the DC source breaker at the DC panel is closed	<u>EE-8F</u> DC Bus #1 EE-8F-CB24 breaker in CLOSED position
3	Ensure the manual (bypass) transfer switch S1 at the inverter is in bypass	<u>Inverter “A” (EE-8H)</u> S1 in BYPASS position
4	Precharge the inverter	<u>Inverter “A” (EE-8H)</u> Push precharge button on inverter and wait 10 seconds
5	Close input breaker EE-8H-CB1	<u>Inverter “A” (EE-8H)</u> Place breaker in CLOSED position
6	Verify Sync loss light is on	<u>Inverter “A” (EE-8H)</u>  <b>CUE: Sync loss light is ON</b>
7	Verify Reverse Transfer light is ON	<u>Inverter “A” (EE-8H)</u>  <b>CUE: Reverse transfer light is ON</b>

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

JPM No: B.2.C

JPM Title: Switch Inverter Power Supply from bypass to normal

STEP	ELEMENT	STANDARD
8	Place S1 EE-8H manual transfer switch in the inverter position	<u>Inverter “A” (EE-8H)</u> EE-8H-S1 in INVERTER position
9	Ensure sync loss light is off	<u>Inverter “A” (EE-8H)</u>  <b>CUE: Sync Loss Light is ON</b>
10	Terminate procedure and contact Shift Manager	DOES NOT push Forward Transfer Button  <b>CUE: Electrical Maintenance has repaired inverter and Sync Loss light is now OFF. You are directed to continue with procedure.</b>
11	Push the forward transfer button	<u>Inverter “A” (EE-8H)</u> PUSH forward transfer button
12	Verify Reverse Transfer light is off	<u>Inverter “A” (EE-8H)</u>  <b>CUE: Reverse Transfer light is OFF</b>
13	Verify Forward Transfer light is on	<u>Inverter “A” (EE-8H)</u>  <b>CUE: Forward Transfer light is ON</b>
14	Ensure EE-8H-CB3 vent fan breaker is closed	<u>Inverter “A” (EE-8H)</u> Breaker EE-8H-CB3 is in CLOSED position
15	Verify Inverter “A” output frequency and voltage	<u>Inverter “A” (EE-8H)</u>  <b>CUE: Frequency = 60.0 Hz Voltage = 120.1 volts</b>



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

JPM No: B.2.C

JPM Title: Switch Inverter Power Supply from bypass to normal

---

**Termination Criteria:** Instrument Bus AI-40A is being supplied by  
Inverter A

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

JPM No: B.2.c

---

**INITIATING CUE:** Instrument Inverter “A” is out of service. AI-40A is being supplied by the bypass transformer. The electricians have cleared their tags and you have been directed to start up inverter “A” and place it in service.

**All prerequisites are complete**

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Facility: Fort Calhoun		Scenario No: 2002-1		Op-Test No. _____
Examiners: _____ _____ _____			Operators: _____ _____ _____	
<p>Initial Conditions: <b>[IC#124]</b> 50% Reactor Power. 940 ppm boron D/G-1 is tagged out of service for generator brush replacement. Waste Monitor Tank, WD-22A, release is in progress.  <b>[Take off CH-1B, Take RM-052 out of service]</b>  <b>[MFP ESF05A] [MFP ESF05B]</b></p>				
<p>Turnover: Return RM-052 to service on the stack. It was taken out of service to install a new tape drive motor for RM-051. The maintenance is now complete. OI-RM-1-CL-B has been completed. The local ratemeter keyswitch is on.</p>				
Event No.	Malf No.	Event Type*	Event Description	
1		N	Return RM-052 to service	
2 [+10]	NIS02D	I	WR NI channel "D" power supply failure <b>[MFP NIS02D]</b>	
3 [+20]	NBWPAC 9A	C	Running Bearing water pump trips (must start backup) <b>[RFP BCW10A OPEN]</b>	
4 [+25]	RCP09B RCP10B	C	Lower and middle seals on RCP, RC-3B fails <b>[MFP RCP09B 100%] [MFP RCP10B 100%]</b>	
5		R, N	Plant shutdown due to two failed RCS seals	
6 [+40]	T:L903X	I	Steam Generator level channel fails low <b>[COP T:L903X 0%]</b>	
7 [+45]	GEN01A	I	Main Generator voltage regulator fails <b>[MFP GEN01A full 120 sec ramp]</b>	
8 [+50]	RCS01E	M	300 gpm LOCA caused by third seal failure on RC-3B <b>[MFP RCS01E 0.5%]</b>	
9	Preset: ESF05A ESF05B	C	PPLS fails to actuate	

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

Op-Test No.:	Scenario No.: 1	Event No.: 1	Page 2 of 10
Event Description: Return RM-052 to service			
Time	Position	Applicant's Actions or Behavior	
	SRO	Direct RO to place RM-052 in service	
	RO	Ensure RM-052 Keyswitch is in Keypad	
	RO	Verify CNTMT amber light off, VENT red light on, Purge amber light off and control room green light is on	
	RO	Ensure pump control switch in stop and verify: "pump off" green light is on, "sample flow high/low" amber light is on, "pump on" red light is off, "control room" green light is on	
	RO	Verify RM-052 aligned to stack	
	RO <C>	Place pump control switch to start and verify: <ul style="list-style-type: none"> <li>• Pump off green light is off</li> <li>• Sample flow high/low amber light is off</li> <li>• Pump on red light is on</li> <li>• Sample flow between 0.8 and 5.00 SCFM in auto flow control mode</li> <li>• Sample flow between 1.25 and 2.75 SCFM in manual flow control mode</li> </ul>	
	RO	Verify RM-052 alert setpoint per TDB-IV.7	
	RO <C>	Verify RM-052 high setpoint per TDB-IV.7	
	RO	Verify RM-052 alert setpoint on the ERF per TDB-IV.7	
	RO	Verify RM-052 high setpoint on the ERF per TDB-IV.7	
	RO	Ensure RM-052 ratemeter high alarm is reset	
	RO <C>	Place RM-052 Control Room ratemeter keyswitch to ON	
	RO	Perform RM-052 check source test	
	RO	Ensure RM-052 returns to normal following check source test	

[illegible]

[illegible]

[illegible]

[illegible]



[illegible]

[illegible]

[illegible]

[illegible]

Facility: Fort Calhoun		Scenario No: 2002-2		Op-Test No. _____
Examiners: _____ _____ _____			Operators: _____ _____ _____	
<p>Initial Conditions: <b>[IC# 122]</b> 100% Reactor Power. 517 ppm boron D/G-1 is tagged out of service for generator brush replacement.</p> <p><b>[Make AC-3A running CCW pump] [MFP ESF06A OFF] [MFP ESF06B OFF]</b></p> <p><b>[COP RSGH042A 100%] [ovr A9 B1U turb diff exp alarm off]</b></p>				
Turnover: Place CCW Pump, AC-3C in service and remove AC-3A from service.				
Event No.	Malf No.	Event Type*	Event Description	
1		N	Rotate CCW pumps <b>[ will need RFP CCW12A ]</b>	
2 [+8]	T:P910	I	PIC-910 fails high causing turbine bypass valve to open <b>[ COP T:P910 1000 psi]</b>	
3 [+13]	T:T2897	I	Letdown HX CCW outlet temperature transmitter, T-2897, fails low. (results in high letdown temperature) <b>[COP T:T2897 50 ]</b>	
4 [+20]	CRD06	C	Dropped Control rod <b>[MFP CRD06 rod 1 grp 4 deenergized]</b>	
5		R, N	Reduce power to 70% due to dropped rod	
6 [+35]	T:P103Y	I	Controlling pressurizer pressure channel fails high <b>[COP T:P103Y]</b>	
7 [+40]	MSS03B	M	Main steam line break in turbine building <b>[MFP MSS03B 20% 60 sec ramp]</b>	
8	Preset RSGH042A	C	SGIS fails to actuate	
9	Preset ESF06A,B	C	S/G "B" MSIV will not close	

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

[illegible]

[illegible]

[illegible]



[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Op-Test No.:	Scenario No.: 2	Event No.: 9	Page 10 of 11
Event Description: S/G "B" MSIV will not close			
Time	Position	Applicant's Actions or Behavior	
	SEC<C>	Report that MSIV on "B" S/G did not close	
	SRO	Perform diagnostic actions and transition to EOP-05 (note: some of the following actions may be performed prior to EOP-05 entry)	
	SRO<C>	Direct SEC to begin steaming from "A" S/G before "B" S/G dries out	
	SEC<C>	Begin steaming from "A" S/G using MS-291 before "B" S/G dries out	
	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	
	PRI	Ensure Emergency Boration	
	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	
	PRI	Report when "HPSI stop and throttle" criteria is met	
	SRO	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"	

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Facility: Fort Calhoun	Scenario No: 2002-3 (spare)	Op-Test No. _____	
Examiners: _____ _____ _____		Operators: _____ _____ _____	
Initial Conditions: <b>[IC#2]</b> 100% Power. FW-54 tagged out to replace fuel pump. Power Range NI channel "A" is out of service due to failed power supply. "A" Trip units 1,9 and 12 have been bypassed. FIA-236 is failed. In T.S.2.14  <b>[RFP RCP12B close] [File ATWAS PLUS] [RFP AFW25A STOP] [RFP AFW26A local] [COP T:F236 0%] [MFP NIS07A] [MFP AFW01] [ bypass keys in A TU's 1,9,12] [A RPS to delta T power]</b>			
Turnover: Place CH-1A in service remove CH-1C from service CH-1A packing cooling pump has been operating for 45 minutes.			
Event No.	Malf No.	Event Type*	Event Description
1		N	Place CH-1A in service remove CH-1C from service
2 [+5]	JLB218LL	I	VCT level fails low causing charging pump suction to realign to SIRWT. <b>[COP JLB218LL fail set]</b>
3 [+12]	NIS07D	I	Power Range NI Channel "D" Fails <b>[MFP NIS07D]</b>
4		R, N	Power reduction to 70% power.
5 [+40]	SWD02A,B	M	Loss of offsite power (both 161KV and 345 KV) <b>[MFP SWD02A] [MFP SWD 02B]</b>
6	preset	C, M	Auto Reactor trip fails (ATWS)
7	preset	C	Turbine driven AFW pump, FW-10 fails to start.
8	preset	C	RC-3C breaker does not open. (D/G-1 output breaker does not close)

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



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Op-Test No.:	Scenario No.:3	Event No.:5 and 6	Page 6 of 8
Event Description: Loss of offsite power (both 161 KV and 345 KV) with ATWS			
Time	Position	Applicant's Actions or Behavior	
	PRI	Determine and communicate that the reactor failed to trip.	
	SRO	Direct PRI to manually trip the reactor	
	PRI<C>	Push CB-4 manual Reactor Trip Pushbutton.	
	SEC	Determine and communicate that Trip did not actuate.	
	SRO	Direct the PRI and SEC to initiate RPS panel (AI-31) trip and DSS trip.	
	SEC<C>	Operate DSS Trip.	
	PRI	Determine and communicate that the rods have inserted.	
	SRO	Direct PRI and SEC to take Standard Post Trip Actions (SPTAs).	
	PRI SEC	Perform Standard Post Trip Actions: <ul style="list-style-type: none"> <li>• Verify control rod insertion, power lowering, negative startup rate</li> <li>• Verify turbine trip and generator trip</li> <li>• Verify electrical status – 4160, D/G, instrument power, 125V DC</li> <li>• <b>Report 4160 bus 1A3 is deenergized</b></li> <li>• Verify instrument air status</li> <li>• Verify CCW and raw water status</li> <li>• Verify RCS inventory control</li> <li>• Verify RCS pressure control</li> <li>• Verify core heat removal</li> <li>• Verify S/G Feed</li> <li>• <b>Report loss of feedwater</b></li> <li>• Verify S/G pressure and T-cold</li> <li>• Verify containment conditions</li> </ul>	
	SRO	Direct PRI or SEC to have EONT minimize DC loads	
	PRI or SEC <C>	Direct EONT to minimize DC loads	
	SRO	Verify completion of SPTA's	

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Facility: Fort Calhoun		Scenario No: 2002-4 (spare)		Op-Test No. _____
Examiners: _____ _____ _____			Operators: _____ _____ _____	
Initial Conditions: <b>[IC#2]</b> 100% Power. FW-54 tagged out to replace fuel pump. Safety Injection Tank SI-6B has a low level alarm. <b>[Lower level in SI-6B] [Disable autostart of CCW pumps]</b>				
Turnover: Raise level in Safety Injection Tank SI-6B				
Event No.	Malf No.	Event Type*	Event Description	
1		N	Raise level in Safety Injection tank SI-6B	
2	NCCPAC3B	C	CCW pump trips <b>[COP NCCPAC3B]</b>	
3	SGN01B	C	Tube leak on steam generator RC-2B <b>[MFP SGN01B 1%]</b>	
4		R, N	AOP-5 plant shutdown	
5	T:P907	I	Steam generator pressure transmitter on RC-2A fails low <b>[COP T:P907 45.1 psi]</b>	
6	CND01	M	Loss of condenser vacuum – Reactor Trip <b>[MFP CND01 100% 300 sec ramp]</b>	
7	SGN01A	M	Steam Generator Tube Rupture – RC-2A <b>[MFP SGN01A 40%]</b>	

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



Op-Test No.:	Scenario No.:4	Event No.: 1	Page 2 of 8
Event Description: raise level in safety Injection tank SI-6B			
Time	Position	Applicant's Actions or Behavior	
	SRO	Directs BOP to raise SIT SI-6B level to 72% using HPSI Pump SI-2A and HCV-311 or HCV-312 IAW OI-SI-1, Attachment 4.	
	PRI	Ensures that recirculation valves HCV-385 and HCV-386 are open and HCV-2983 is closed.	
	PRI	Start SI-2A. Recirc for 15 minutes. <b>CUE: ASSUME 15 MINUTES HAVE ELAPSED.</b>	
	PRI	Stop HPSI Pump SI-2A.	
	PRI	Open loop injection valve HCV-312 or HCV-311.	
	PRI	Open leakage control valve PCV-2909 by placing in MANUAL and controller in OPEN.	
	PRI	Open HCV-2909, fill and drain valve, for desired tank to be filled.	
	PRI	Restart HPCI Pump SI-2A.	
	PRI	Stop HPCI Pump SI-2A when 72% level is reached and level alarm <b>SAFETY INJECTION TANK SI-6B LO LEVEL@</b> on Panel A7 has cleared.	
	PRI	Close HCV-2916.	
	PRI	Close HCV-312 or HCV-311.	
	PRI	Place PCV-2909 in CLOSE and valve control in AUTO.	
	LSO	Verify that HPSI loop injection valve is operable by lit amber light on valve used to fill tank.	

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Op-Test No.:	Scenario No.:4	Event No.: 7	Page 8 of 8
Event Description: Steam generator Tube Rupture – RC-2A			
Time	Position	Applicant's Actions or Behavior	
	PRI	Identify and report RCS inventory loss	
	SRO	May direct reactor trip	
	SRO	Following manual or auto reactor trip, direct standard post trip actions	
	PRI SEC	Perform Standard Post Trip Actions: <ul style="list-style-type: none"> <li>• Verify control rod insertion, power lowering, negative startup rate</li> <li>• Verify turbine trip and generator trip</li> <li>• Verify electrical status – 4160, D/G, instrument power, 125V DC</li> <li>• Verify instrument air status</li> <li>• Verify CCW and raw water status</li> <li>• Verify RCS inventory control</li> <li>• Verify RCS pressure control</li> <li>• Verify core heat removal</li> <li>• Verify S/G feed</li> <li>• Verify S/G pressure and T-cold</li> <li>• Verify containment conditions</li> </ul>	
	SRO	Diagnose tube rupture - enter EOP-04 or EOP-20	
	SRO	Direct RCS cooldown - T <sub>hot</sub> less than 510°F	
	SEC	Cooldown RCS T <sub>hot</sub> to less than 510°F	
	PRI	Identify and verify PPLS	
	SRO SEC	Identify most affected steam generator (A)	
	SRO	Direct SEC to isolate steam generator A	
	SEC	Isolate steam generator A	
	SRO	Direct RO to depressurize RCS to less than 1000 psia	
	PRI	Depressurize the RCS	
	PRI	Maintain subcooling	
	SEC	Monitor and control secondary parameters Block SGLS during cooldown.	
	PRI	Monitor and control primary parameters	