

# **Simulator JPM**

## **a**

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

Examiner: \_\_\_\_\_

Facility: Davis-Besse JPM No: NEW (OPS-JPM-337)

Task Title: Deborate the RCS using the Deborating Ion Exchangers

Task No: 004-052-01-0100 System: 004 Chem and Volume Control System

K/A Reference: 004 A2.30 / 3.5 Safety Function: 1 Reactivity Control

Time Critical Task: No Alternate Path: Yes

Validation Time: 15 minutes

**Method of testing / Location:**

Simulated Performance \_\_\_\_ Actual Performance X  
Classroom \_\_\_\_ Simulator X Plant \_\_\_\_

**Task Standard:**

- Line up and perform a 1000 gallon deboration using the Deboration Demineralizers
- When control rods unexpectantly withdraw, the operator will diagnose an unanticipated reactivity change and stop the deboration prior to a cross limit being initiated.

**Required Materials:**

DB-OP-06001, Section 3.5 beginning at step 3.5.13.  
Have steps 3.5.1 through 3.5.12 properly marked as completed.

**General References:**

None

**Notes:**

The stand-by candidate should be allowed to review the procedures and prints prior to entering the simulator to allow the JPM to start ASAP.

**Initial Conditions:**

The plant conditions are specified in the Initial Conditions and Initiating Cues.

**Initiating Cue:**

The Initiating Cues are specified in the Examiner/Student Copy Performance Measure pages.

**SIMULATOR INSTRUCTIONS:**

**INITIAL CONDITION:**

Mode 1

End of cycle scenario with a boron concentration of 85 ppm.

Per DB-OP-06101 Step 4.16.3, Place the Reactor Coolant Drain Tank Pumps in LOCKOUT  
(No tags are required)

IC420

**ADDITIONAL SETUP/DEVIATION FROM INITIAL CONDITION:**

Ensure Batch Controller is "stopped" and zeroed out after each JPM reset.

**MALFUNCTIONS/FAILURE TO INSERT:**

Insert a malfunction so that when the deboration begins, RCS boron concentration ramps from initial conditions (85 ppm) to approximately 110 ppm over 5 minutes.

Open schedule to allow "Delete Malfunction" to work

**EXAMINER COPY**

**INITIAL CONDITIONS:**

All plant systems are in a normal alignment.

Purification Demineralizer 2 is in service.

The deboration amount has been calculated and independently verified.

Chemistry does **NOT** require a sample.

**INITIATING CUES:**

The CSRO directs you to:

Deborate the RCS using the deborating demineralizer for an amount of 1000 gallons in accordance with section 3.5 of DB-OP-06001, BORON CONCENTRATION CONTROL beginning with step 3.5.13 for rod index control.

All steps have been completed and verified through step 3.5.12.

**(Provide examinee a marked up copy of Section 3.5 of DB-OP-06001)**

**CANDIDATE COPY**

**INITIAL CONDITIONS:**

All plant systems are in a normal alignment.

Purification Demineralizer 2 is in service.

The deboration amount has been calculated and independently verified.

Chemistry does **NOT** require a sample.

**INITIATING CUES:**

The CSRO directs you to:

Deborate the RCS using the deborating demineralizer for an amount of 1000 gallons in accordance with section 3.5 of DB-OP-06001, BORON CONCENTRATION CONTROL beginning with step 3.5.13 for rod index control.

All steps have been completed and verified through step 3.5.12.

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**PERFORMANCE INFORMATION**

NOTE: Critical steps denoted with a "C". Failure to meet any one of these standards for this item constitutes failure. Sequence is NOT critical unless denoted in the "Comments".

START TIME: _____
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1. PERFORMANCE STEP: Set desired batch size of 1000 gallons (OP6001 Step 3.5.13)  
.....**C**.....

STANDARD: Set batch size of 1000 gallons, observe 1000 gallons in lower display.

COMMENT: The candidate should take the necessary sub steps to enter the desired batch size.

CUE: **The batch size has been independently verified.**

NOTE: Depressing BATCH SET, entering 1000, depressing ENTER, and depressing DISPLAY are the critical components for this step.

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SAT UNSAT

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2. PERFORMANCE STEP: Reset the indicated total on the batch controller (Step 3.5.14)

STANDARD: Reset batch controller, observes 0 on display.

COMMENT: The candidate should take the necessary sub steps to zero out the controller

CUE: **None**

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SAT UNSAT

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3. PERFORMANCE STEP: Display FLOW RATE in upper display (Step 3.5.15)

STANDARD: Change display to FLOW RATE, observes no flow.

COMMENT: The candidate should take the necessary sub steps to change the display to flow rate.

CUE: **None**

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SAT UNSAT

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4. PERFORMANCE STEP: Notify the CSRO that deboration is about to begin (Step 3.5.16)

STANDARD: Notify the Unit Supervisor (CSRO).

CUE: **None**

\_\_\_\_\_  
SAT UNSAT

5. PERFORMANCE STEP: Enable batch controller by pressing RUN (Step 3.5.17)  
.....**C**.....

STANDARD: Presses RUN on batch controller.

CUE: **None**

SAT UNSAT

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6. PERFORMANCE STEP: Observe caution: 3.5.18. MU40 AND WC3526 shall be open prior to positioning MU11 to the CLN WST position to prevent lifting the letdown relief. (prior to Step 3.5.20)

STANDARD: Observes the caution in the procedure. JPM Steps 7 and 8 must be completed prior to JPM Step 9.

CUE: **None**

SAT UNSAT

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7. PERFORMANCE STEP: Open MU40 BATCH ISO (Step 3.5.18)  
.....**C**.....

STANDARD: Depresses OPEN on HIS MU40 and observes RED light lit, Green light OFF.

CUE: **None**

SAT UNSAT

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8. PERFORMANCE STEP: Open WC3526 BOOSTER SYSTEM BYPASS (Step 3.5.19)  
.....**C**.....

STANDARD: Depresses OPEN on HIS3526 and observes RED light lit, Green light OFF.

CUE: **None**

SAT UNSAT

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9. PERFORMANCE STEP: Place MU11, DIVERT VALVE in the CLN WST position  
.....**C**..... (Step 3.5.20)

STANDARD: Takes MU11 switch to CLN WST position. Observes indication consistent with deboration.

CUE: **None**

SAT UNSAT

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10. PERFORMANCE STEP: Closely monitor letdown pressure (Step 3.5.21)

STANDARD: Calls up computer point P719. Observes letdown pressure to avoid exceeding 150 psig (the relief setpoint)

CUE: **None**

SAT UNSAT

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**Alternate Path starts here.**

**After MU11 is positioned, RCS boron concentration will ramp from 85 ppm to 110 ppm. RCS temperature will begin to lower and neutron error will build in the negative direction, resulting in unanticipated control rod movement in the outward direction. Control rods may withdraw to the point where they are fully withdrawn, and eventually a cross-limit resulting in associated alarms.**

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11. PERFORMANCE STEP: Deboration shall be stopped immediately if control rod group .....**C**..... position indication, neutron count rate, or other reactivity indications are behaving in an erratic or unexpected manner. (limits and precautions 2.1.4)

STANDARD: Observes and diagnoses unexpected changes in Neutron Error and control rod motion (outward). Stops Deboration by routing to step 3.5.22.

NOTE: Response to the change in boron concentration may take 1-2 minutes to take effect. JPM is considered failed if the deboration is not stopped prior to a cross limit being initiated.

CUE: **Acknowledge diagnosis of unexpected reactivity changes.**

**State to the candidate, "what do you recommend?"**

**Acknowledge recommendation.**

SAT UNSAT

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12. PERFORMANCE STEP: Observes note and caution prior to 3.5.22. (Step 3.5.22)

STANDARD: Observes the caution in the procedure.

CAUTION 3.5.22: MU11 should automatically transfer to the MU tank position if the Batch Controller is stopped. This must be verified to prevent excessive pressurization of the letdown piping.

CUE: **None**

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SAT UNSAT

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13. PERFORMANCE STEP: If during deboration, the process must be stopped, THEN...  
.....**C**..... (Steps 3.5.22. a, b, c)

STANDARD: Performs the following:

- Depresses STOP on Batch Controller.
- Observes MU11 position to the MU TK position.
- Observes MU40 go from OPEN to CLOSED, RED light off, GREEN light Lit.

CUE: **None**

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SAT UNSAT

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14. PERFORMANCE STEP: Notify CSRO deboration process has been stopped.  
(Step 3.5.22.d)

STANDARD: Reports to the CSRO that the deboration process has been stopped.

**Another operator will complete the task.**

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SAT UNSAT

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TERMINATING CUES: This JPM is complete (Terminated by the examiner)

END TIME: \_\_\_\_\_

# **Simulator JPM**

## **b**

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

Examiner: \_\_\_\_\_

Facility: Davis-Besse JPM No: OPS-JPM-245

Task Title: Manually actuate SFAS levels 1 and 2

Task No: 013-005-05-0100 System: 013 SFAS

K/A Reference: 013 A4.03 / 4.4 Safety Function: 2 RCS Inventory Control

Time Critical Task: No Alternate Path: No

Validation Time: 15 minutes

**Method of testing / Location:**

Simulated Performance \_\_\_\_ Actual Performance X  
Classroom \_\_\_\_ Simulator X Plant \_\_\_\_

**Task Standard:**

Manual Actuation of SFAS Level 1 and 2 equipment by depressing the TRIP pushbuttons on all Level 1 and 2 Output Modules in all four SFAS Channels.

This JPM is considered failed if the candidate inadvertently actuates any SFAS Level 3, 4, or 5 equipment.

**Required Materials:**

DB-OP-06405, Safety Features Actuation System Procedure, Section 5.2

**General References:**

None

**Notes:**

None

**Initial Conditions:**

The plant conditions are specified in the Initial Conditions and Initiating Cues.

**Initiating Cue:**

The Initiating Cues are specified in the Examiner/Student Copy Performance Measure pages.

**SIMULATOR INSTRUCTIONS:**

**INITIAL CONDITION:**

Mode 3 Normal shutdown in progress

RCS temperature is  $\approx 305$  °F

RCS pressure is  $\approx 640$  psig

IC422

**ADDITIONAL SETUP/DEVIATION FROM INITIAL CONDITION:**

SFAS RCS low pressure trips blocked

SFAS Doors unlocked and open

**MALFUNCTIONS/FAILURE TO INSERT:**

None

**EXAMINER COPY**

**INITIAL CONDITIONS:**

The plant is in Mode 3

A plant shutdown and cooldown were in progress in preparation for a refueling outage

SFAS LO PRESS TRIP has been blocked IAW DB-OP-06903, Plant Cooldown

**INITIATING CUES:**

An RCS leak has developed

The Unit Supervisor directs you to manually actuate SFAS levels 1 and 2 in accordance with section 5.2 of DB-OP-06405, Safety Features Actuation System Procedure

The Shift Manager has given permission to manually actuate SFAS

**(Provide the examinee a copy of section 5.2 of DB-OP-06405)**

**CANDIDATE COPY**

**INITIAL CONDITIONS:**

The plant is in Mode 3

A plant shutdown and cooldown were in progress in preparation for a refueling outage

SFAS LO PRESS TRIP has been blocked IAW DB-OP-06903, Plant Cooldown

**INITIATING CUES:**

An RCS leak has developed

The Unit Supervisor directs you to manually actuate SFAS levels 1 and 2 in accordance with section 5.2 of DB-OP-06405, Safety Features Actuation System Procedure

The Shift Manager has given permission to manually actuate SFAS

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**PERFORMANCE INFORMATION**

NOTE: Critical steps denoted with a "C". Failure to meet any one of these standards for this item constitutes failure. Sequence is NOT required unless denoted in the "Comments".

START TIME: _____
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1. PERFORMANCE STEP: Check the status of the RC PRESSURE LO BLOCK Bistables BLOCKED lights in at least two SFAS Channels (Step 5.2.4 a.)

STANDARD: Check RC PRESSURE LO BLOCK Bistables BLOCKED lights are on in at least two SFAS Channels (BA 103, BA 203, BA 303, and BA 403)

CUE: **Prior to signing out keys, "The SFAS doors have been unlocked and opened by another operator."**

SAT UNSAT

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NOTES for JPM Steps 2-5:

1. JPM Steps 2-5 may be performed in any order
2. This JPM is considered failed if the candidate inadvertently actuates any SFAS Level 3, 4, or 5 equipment
3. IF the candidate inadvertently trips an output module, they may be allowed to reset it

- 
2. PERFORMANCE STEP: Actuate SFAS levels 1 and 2 in **Channel 1** (Step 5.2.4 b.)  
**C**

STANDARD: In SFAS cabinet 1, depress the TRIP pushbuttons on all Level 1 and 2 Output Modules

CUE: **None**

SAT UNSAT

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3. PERFORMANCE STEP: Actuate SFAS levels 1 and 2 in **Channel 2** (Step 5.2.4 b.)  
**C**

STANDARD: In SFAS cabinet 2, depress the TRIP pushbuttons on all Level 1 and 2 Output Modules

CUE: **None**

SAT UNSAT

4. PERFORMANCE STEP: Actuate SFAS levels 1 and 2 in **Channel 3** (Step 5.2.4 b.)  
    **C**

STANDARD: In SFAS cabinet 3, depress the TRIP pushbuttons on all Level 1 and 2 Output Modules

CUE: **None**

    SAT  UNSAT    

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5. PERFORMANCE STEP: Actuate SFAS levels 1 and 2 in **Channel 4** (Step 5.2.4 b.)  
    **C**

STANDARD: In SFAS cabinet 4, depress the TRIP pushbuttons on all Level 1 and 2 Output Modules

CUE: **None**

    SAT  UNSAT    

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6. PERFORMANCE STEP: Verify proper SFAS actuation

STANDARD: Verify all SFAS level 1 and 2 equipment actuated properly using table 2 of DB-OP-02000

CUE: **Another Reactor Operator is verifying proper SFAS levels 1 and 2 actuation**

    SAT  UNSAT    

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TERMINATING CUES: This JPM is complete. (Terminated by the evaluator)

    END TIME

# **Simulator JPM**

## **C**

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

Examiner: \_\_\_\_\_

Facility: Davis-Besse JPM No: OPS-JPM-275

Task Title: Boron equalization between Pressurizer (PZR) and the Reactor Coolant System

Task No: 010-018-01-0100 System: 010 PZR Pressure Control

K/A Reference: 010 A4.01 / 3.8 Safety Function: 3 Reactor Pressure Control

Time Critical Task: No Alternate Path: Yes

Validation Time: 10 minutes

**Method of testing:**

Simulated Performance \_\_\_\_ Actual Performance X

Classroom \_\_\_\_ Simulator X Plant \_\_\_\_

**Task Standard:**

- Initiate boron equalization between Pressurizer and the Reactor Coolant System (Turn on Pressurizer Heaters and throttle open the Spray valve)
- Recognize spray valve failure and take required immediate action (Close the Spray Block Valve) prior to a Reactor Trip due to Low RCS Pressure.

**Required Materials:**

DB-OP-06003, Pressurizer Operating Procedure, 4.3 Spraying PZR for Boron Equalization

**General References:**

None

**Notes:**

The stand-by candidate should be allowed to review the procedures and prints prior to entering the simulator to allow the JPM to start ASAP.

**Initial Conditions:**

The plant conditions are specified in the Initial Conditions and Initiating Cues.

**Initiating Cue:**

The Initiating Cues are specified in the Examiner/Student Copy Performance Measure pages.

**SIMULATOR INSTRUCTIONS:**

**INITIAL CONDITION:**

Mode 1 (RX Pwr  $\geq$ 95%)

IC425

**ADDITIONAL SETUP/DEVIATION FROM INITIAL CONDITION:**

Raise RCS Pressure on Narrow Range to ~2160 psig from 2155 psig.

**MALFUNCTIONS/FAILURE TO INSERT:**

HV00E fails to 0.47; RC2, Pressurize Spray, will fail to ~40% on Event 1  
H10I21GL==0; Event 1: when switch taken out of AUTO.

**EXAMINER COPY**

**INITIAL CONDITIONS:**

The plant is operating at 100% power.

Chemistry reports Pressurizer boron is 130 ppmB higher than the RCS boron

**INITIATING CUES:**

The Unit Supervisor directs you to equalize Boron between the Reactor Coolant System and the Pressurizer using Section 4.3 of DB-OP-06003, Pressurizer Operating Procedure, for 4 hours.

Maximize the spray flow rate to expedite equalization.

**(Hand Candidate a copy of DB-OP06003 Section 4.3)**

**CANDIDATE COPY**

**INITIAL CONDITIONS:**

The plant is operating at 100% power.

Chemistry reports Pressurizer boron is 130 ppmB higher than the RCS boron

**INITIATING CUES:**

The Unit Supervisor directs you to equalize Boron between the Reactor Coolant System and the Pressurizer using Section 4.3 of DB-OP-06003, Pressurizer Operating Procedure, for 4 hours.

Maximize the spray flow rate to expedite equalization.

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**PERFORMANCE INFORMATION**

NOTE: Critical steps denoted with a "C". Failure to meet any one of these standards for this item constitutes failure. Sequence is NOT assumed unless denoted in the Comments".

START TIME: _____
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1. PERFORMANCE STEP: Review prerequisites of DB-OP-06003  
Section 4.3

STANDARD: Reviews prerequisites of DB-OP-06003 Section 4.3

Note: Prerequisites are signed off

**CUE: (If Asked) Nuclear Engineering has determined rods will be within Reactor Operator Guidance for Rod Index**

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SAT UNSAT

2. PERFORMANCE STEP: Place desired Pressurizer (PZR) heater banks in ON (Step 4.3.3)

**C**

STANDARD: Rotate selected PZR heater switches clockwise to ON

Note: The Standard is to place additional heater(s) in service. Candidate may not start with all heaters ON but may leave some OFF to provide additional confidence of pressure control. The number of heaters placed in service is not Critical for this JPM

**CUE: None**

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SAT UNSAT

3. PERFORMANCE STEP: Throttle open RC2, PZR Spray, when RCS pressure is between 2170 and 2200 psig (Step 4.3.4)

**C**

STANDARD: Rotate HISRC2-1 clockwise momentarily then return it to AUTO

**CUE: None**

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SAT UNSAT

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**Alternate Path starts here.**  
**Operator must recognize the spray valve is failed to 40% and not responding and take appropriate actions to isolate.**

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4. PERFORMANCE STEP: Recognize RCS pressure is lowering

STANDARD: Observe RCS pressure indication. May turn on more heaters.

CUE: **None**

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SAT UNSAT

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5. PERFORMANCE STEP: Close RC 2, Pressurizer Spray Valve  
(DB-OP-02513 IA Step 3.2.1)

STANDARD: Rotate RC2-1 counterclockwise and hold until CLOSE light comes ON

NOTE: RC 2 will fail to close

CUE: **None**

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SAT UNSAT

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6. PERFORMANCE STEP: Close RC 10, PZR Spray Block valve  
(DB-OP-02513 IA Step 3.2.1 RNO)

**C**

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STANDARD: Depress HIS RC 10 CLOSE button

NOTE: Candidate performs DB-OP-02513 Immediate actions to close RC2, Pzr Spray and then RC10 Pzr Spray Block valve

The block valve must be closed prior to a reactor trip due to Low RCS Pressure.

CUE: **None**

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SAT UNSAT

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TERMINATING CUES: This JPM is complete. (Terminated by the evaluator)

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END TIME

# **Simulator JPM d**

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

Examiner: \_\_\_\_\_

Facility: Davis-Besse JPM No: OPS-JPM-187

Task Title: Establish flow to the RCS from HPI Pump 1 upon a Loss of Decay Heat

Task No: 005-012-04-0100 System: 005 Decay Heat Removal System

K/A Reference: 005 K1.13 (4.2) Safety Function: 004P Decay Heat Removal

Time Critical Task: No Alternate Path: Yes

Validation Time: 30 minutes

**Method of testing:**

Simulated Performance \_\_\_\_ Actual Performance X

Classroom \_\_\_\_ Simulator X Plant \_\_\_\_

**Task Standard:**

- Align DH Train 1 for RCS Cooling
- Initiate flow to the RCS from HPI Pump 1 when DH Pump 1 fails to start

**Required Materials:**

DB-OP-02527 Attachment 1, Attachment 5, and Attachment 7  
Curves CC6.2 and CC6.4

**General References:**

None

**Notes:**

None

**Initial Conditions:**

The plant conditions are specified in the Initial Conditions and Initiating Cues.

**Initiating Cue:**

The Initiating Cues are specified in the Examiner/Student Copy Performance Measure pages.

**SIMULATOR INSTRUCTIONS**

**INITIAL CONDITION:**

RCS Drained to 80 inches, DH Loop 2 in Service

IC428

**ADDITIONAL SETUP/DEVIATION FROM INITIAL CONDITION:**

- Display SPDS Decay Heat Removal Screen per initial conditions.
- Verify DH14B and DH13B are closed.
- Hang Yellow Caution Tags on HPI Pumps 1 & 2 control switches.
- Place Ops Info tags on DH 1517, DH 1518, DH 63, DH 64, DH 2733, and DH 2734 stating "breaker open per DB-OP-06012".
- Place OPEN placards on DH 1517 and DH 1518.
- Place CLOSED placards on DH 63, DH 64, DH 2733, and DH 2734.

**Do not take Simulator to run until student is ready to begin JPM**

**MALFUNCTIONS/FAILURE TO INSERT:**

Insert malfunction to fail Decay Heat Pump 2's breaker open (**IMF BDP2C**).

Insert malfunction to fail Decay Heat Pump 1's breaker open (**IMF BDP1C**).

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**EXAMINER COPY**

**INITIAL CONDITIONS:**

The plant is in Mode 5.

RCS temperature is 108°F.

RCS level is approximately 81 inches on LI 10577A and B, RCS level indication.

SGs Upper Primary Manways are removed.

Time to boil is 30 minutes.

Decay Heat Train 1 is in standby.

No RCS boron dilution is in progress.

The SPDS Decay Heat Removal Screen is not functioning.

**INITIATING CUES:**

Decay Heat Pump 2 has tripped on overcurrent.

The Crew has entered DB-OP-02527, Section 4.1 Loss of Decay Heat Removal Pump(s).

CTMT has been evacuated.

CTMT closure has been established.

The Shift Manager directs you to start Decay Heat Pump 1 IAW DB-OP-02527, Attachment 1, Starting Decay Heat Pump 1.

You have permission to operate any locked valves required.

Desired decay heat flow is 1500 gpm.

**(Provide a copy of DB-OP-02527 Attachment 1)**

**CANDIDATE COPY**

**INITIAL CONDITIONS:**

The plant is in Mode 5.

RCS temperature is 108°F.

RCS level is approximately 81 inches on LI 10577A and B, RCS level indication.

SGs Upper Primary Manways are removed.

Time to boil is 30 minutes.

Decay Heat Train 1 is in standby.

No RCS boron dilution is in progress.

The SPDS Decay Heat Removal Screen is not functioning.

**INITIATING CUES:**

Decay Heat Pump 2 has tripped on overcurrent.

The Crew has entered DB-OP-02527, Section 4.1 Loss of Decay Heat Removal Pump(s).

CTMT has been evacuated.

CTMT closure has been established.

The Shift Manager directs you to start Decay Heat Pump 1 IAW DB-OP-02527, Attachment 1, Starting Decay Heat Pump 1.

You have permission to operate any locked valves required.

Desired decay heat flow is 1500 gpm.

**PERFORMANCE INFORMATION**

NOTE: Critical steps denoted with a "C". Failure to meet any one of these standards for this item constitutes failure. Sequence is NOT assumed unless denoted in the "Comments".

START TIME: _____
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**NOTE: Do not take Simulator to run until student is ready to begin JPM.**

1. PERFORMANCE STEP: Verify the correct procedure attachment.

STANDARD: Identify Attachment 1, as the correct procedure attachment.

CUE: **None**

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SAT UNSAT

2. PERFORMANCE STEP: Close DH 14B. (Attachment 1 Step 1.1)  
.....**C**.....

STANDARD: Depress AUTO on HIS DH 14B  
Verify zero demand is indicated on HIC DH14B  
May also check Green light ON at HIS DH 14B

CUE: **None**

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SAT UNSAT

3. PERFORMANCE STEP: Close DH 13B. (Attachment 1 Step 2.1)  
.....**C**.....

STANDARD: Depress AUTO on HIS DH 13B  
Verify zero demand is indicated on HIC DH 13B  
May also check Green light is ON at HIS DH 13B

COMMENT: Operator should GOTO Step 6.0 (per Attachment 1 Step 3.0)

CUE: **(If asked) No signs of cavitation were present.**

**(If necessary) Venting Decay Heat Pump 1 is NOT required.**

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SAT UNSAT

4. PERFORMANCE STEP: Verify open DH 1517. (Attachment 1 Step 6.1)

STANDARD: Checks placard or INFO Tag on HIS 1517 to verify position.

CUE: **None**

SAT UNSAT

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5. PERFORMANCE STEP: Verify open DH 11 and DH 12.  
(Attachment 1 Step 6.2 first bullet)

STANDARD: Visual verification of Red light on HIS DH11 and HIS DH12.

COMMENT: DH 21 and DH 23 are locally operated manual valves in CTMT

CUE: **(If asked) DH 21 and DH 23 are not to be used per SM discretion.**

SAT UNSAT

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6. PERFORMANCE STEP: Verify CCW and SW cooling is available, Open CC 1467  
.....**C**..... (Attachment 1 Step 6.3 and 6.4)

STANDARD: Check CCW Pump 1 is running (**Not Critical**)  
Depress OPEN on HIS 1467, check RED light is LIT, GREEN is OFF  
Check SW Pump 1 is running (**Not Critical**)

COMMENT: May also check SW36 open by placard and SW1424 position.

CUE: **(If asked) CC172, CCW From DH Cooler 1 Outlet has been throttled to maintain CCW flow within limit.**  
**(If asked after CC 1467 is open) flow is at 7200 gpm**

SAT UNSAT

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7. PERFORMANCE STEP: Verify open DH 1B, (Attachment 1 Step 6.6 second bullet)

STANDARD: Visual verification of Red light is LIT on HIS DH1B.

COMMENT: Step 6.5 is not applicable because DHP 1 will be aligned to DH Train 1

NOTE: Student may read ahead prior to starting DHP 1, refer to curves CC6.2 and CC6.4

CUE: **(When found) Hand a copy of curves CC6.2 and CC6.4 to the candidate**  
**(If asked) Decay Heat Pump suction pressure is 13 psig.**

SAT UNSAT

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**Alternate Path starts here.  
DH Pump 1 fails to start. Candidate should perform a crew update.**

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8. PERFORMANCE STEP: Start DH Pump 1 using HIS DH 6B. (Attachment 1 Step 6.7)  
.....**C**.....

STANDARD: Recognize DH Pump 1 does not start.

CUE: **What is your recommendation?**

**The Shift Manager directs you to perform Attachment 5, Establish Feed and Bleed Cooling, start HPI Pump 1 and establish forced flow to the RCS.**

**(Hand a copy of Attachment 5 to the candidate)**

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SAT UNSAT

9. PERFORMANCE STEP: Continue efforts to establish SG Heat Transfer if possible.  
REFER TO Attachment 3, Establish SG Heat Transfer.  
(Attachment 5 Step 1.)

STANDARD: N/A

CUE: **Another operator will perform Attachment 3.**

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SAT UNSAT

10. PERFORMANCE STEP: Verify Containment is evacuated prior to establishing feed and bleed cooling. (Attachment 5 Step 2.)

STANDARD: Sign step as complete based on initial cue

CUE: **IF required, CTMT has been evacuated**

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SAT UNSAT

11. PERFORMANCE STEP: Select AND implement one OR more Inventory Injection Sources.  
(Attachment 5 Step 3. 2<sup>nd</sup> Bullet)

STANDARD: Identify Attachment 7, Using High Pressure Injection System to Inject Water, as the correct procedure attachment.

CUE: **(When identified) Hand Candidate a copy of Attachment 7.**

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SAT UNSAT

12. PERFORMANCE STEP: Complete Attachment 7 Step 1 based on earlier cue.

STANDARD: Fill in the blank (High Pressure Injection Pump 1) and initial step 1 as complete

CUE: **(If asked)**

- **The Shift Manager has given permission to remove tags from AC111 breaker for HPI pump 1 and HIS1524.**
- **The System Status File and Safety Tagging file for HPI show the system valve lineup is complete for Mode 3 entry.**
- **The HPI system is being credited as an inventory source per NOP-OP-1005, Shutdown Defense in Depth**

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SAT UNSAT

13. PERFORMANCE STEP: Verify the HPI Pump Suction from the BWST is available by .....**C**..... opening DH7B, BWST Outlet Line 1. (Attachment 7 Step 2.a.)

STANDARD: Communicate with an EO to remove tags from and close BE1157.  
OPEN DH7B, BWST Outlet Line 1.

CUE: **(I/F) DH7B breaker, BE1157, is closed**

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SAT UNSAT

14. PERFORMANCE STEP: Verify HPI Pump 1 breaker (AC111) is racked in with close .....**C**..... power fuses installed (Attachment 7 Step 2.b.)

STANDARD: Communicate with an EO to remove tags and rack in AC111.

CUE: **(If asked) The Shift Manager has given permission to remove tags from AC111 breaker for HPI pump 1 and HIS1524.**

**(I/F) HPI 1 breaker, AC111, is RACKED IN and the close power fuses installed**

---

SAT UNSAT

15. PERFORMANCE STEP: Close High Pressure Injection valves HP 2C and 2D.  
(Attachment 7 Step 2.c.)

STANDARD: Visual verification of Green light is LIT on HIS HP2C and HIS HP2D.

CUE: **None**

---

SAT UNSAT

16. PERFORMANCE STEP: Start HPI Pump 1. (Attachment 5, Step 2.d)  
.....**C**.....

STANDARD: Place HIS 1524 to START, then release. Observe the Red light goes ON and the Green light goes OFF.

CUE: **None.**

---

SAT UNSAT

17. PERFORMANCE STEP: Throttle HP 2C, and 2D to establish injection flow.  
.....**C**..... (Attachment 7 Step 2.e)

STANDARD: Press the open pushbutton on HP 2C and/or HP 2D using HIS HP2C and HIS HP2D until flow is established.

COMMENT: Actual flow rate is not critical at this step, provided some flow is provided. Not required to open both valves.

CUE: **Another operator will complete the procedure.**

---

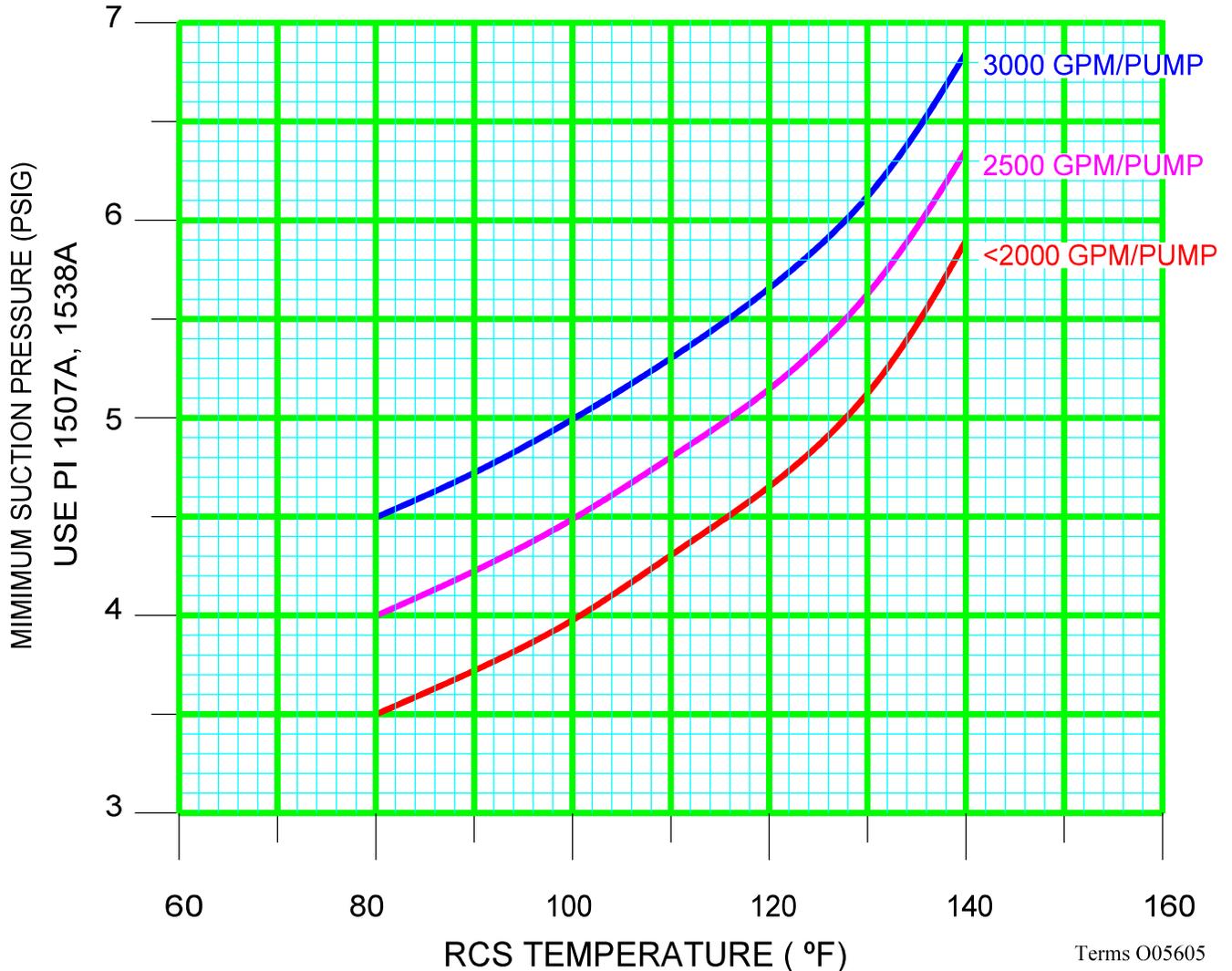
SAT UNSAT

TERMINATING CUES: This JPM is complete. (Terminated by the evaluator).

---

END TIME

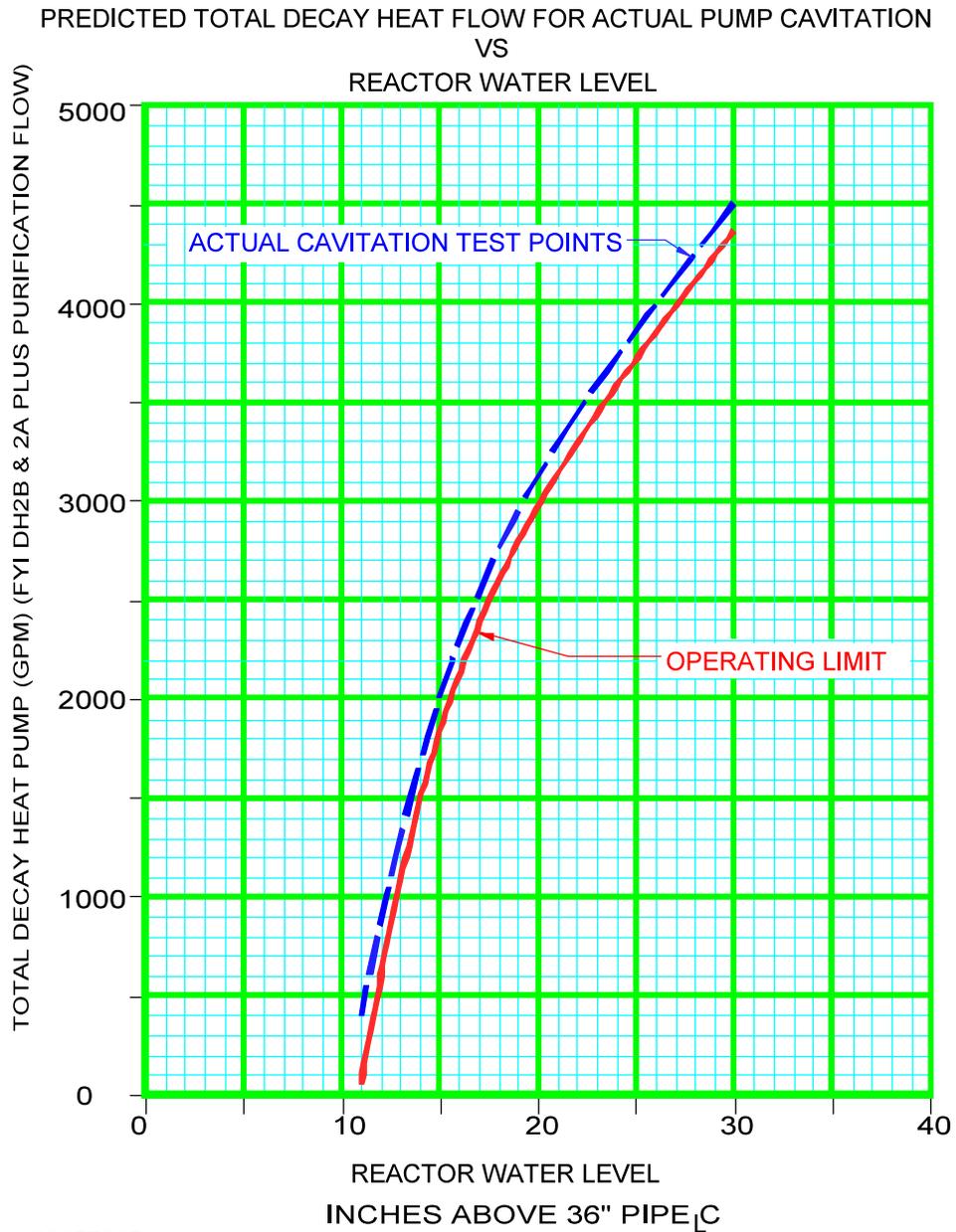
## DECAY HEAT MINIMUM SUCTION PRESSURE VS. RCS TEMPERATURE



Terms O05605

Note 1: This is only a guide. If any unusual noise or discharge pressure variation occurs, the suction pressure should be raised, or the pump tripped. Pump performance should still follow pump head curve. No instrument error was included.

Note 2: This curve is based on DH11 and DH12 flow path. Flow through DH21 and DH23 may require a lower flow for a given suction pressure versus temperature. The minimum suction pressures on the curve should be observed.



CC6.4  
Notification 60057605

**CAUTION:** This curve is for guidance only. This curve should not be exceeded or loss of pump NPSH may occur. The actual test points are points at which either pump NPSH was lost or pump suction pressure was low causing excessive pump cavitation.

Rx Water Level	Actual Test Point	Adjusted Operating Limit Curve
30"	4500	4360 GPM
18"	2750	2590
11"	400	50

# **Simulator JPM**

## **e**

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

Examiner: \_\_\_\_\_

Facility: Davis-Besse JPM No: OPS-JPM-284

Task Title: Commence a Rapid Cooldown of the RCS via TBVs and AVVs

Task No: 000-081-04-0100 System: 041 Steam Dump / Turbine Bypass Control

K/A Reference: 041 K3.01 (3.7) R3 Safety Function: 4S Heat Removal from the Core

Time Critical Task: No Alternate Path: Yes

Validation Time: 20 minutes

**Method of testing:**

Simulated Performance \_\_\_\_\_ Actual Performance X

Classroom \_\_\_\_\_ Simulator X Plant \_\_\_\_\_

**Task Standard:**

- Commence a Rapid Cooldown of the RCS via Both Trains of TBVs in hand
- Transfer cooldown to Both AVVs when the TBVs fail close prior to SFRCS Actuation

**Required Materials:**

- DB-OP-02543 pg. 10-12
- DB-OP-02000 Attachment 3 (Operator Aid)

**General References:**

None

**Notes:**

- Time will be needed for trace to erase from SPDS
- Verify DB-OP-02000 Attachment 3 operator aid is clean prior to performing JPM

**Initial Conditions:**

The plant conditions are specified in the Initial Conditions and Initiating Cues.

**Initiating Cue:**

The Initiating Cues are specified in the Examiner/Student Copy Performance Measure pages.

## **SIMULATOR INSTRUCTIONS**

### **INITIAL CONDITION:**

Reactor tripped with the Main Condenser available

Supplemental actions of DB-OP-02000 complete

IC424

### **ADDITIONAL SETUP/DEVIATION FROM INITIAL CONDITION:**

DB-OP-02543 complete up through 4.12.1

*PLACE COOLDOWN CURVE ON SPDS AND SELECT TO FRONT SCREEN-100°F/Hr*

### **MALFUNCTIONS/FAILURE TO INSERT:**

3 minutes after TBVs taken to HAND - Fail all TBVs closed

Event File

Event 1

L2012ah==1&&L2012bh==1

Schedule File

**Insert malfunction SA34B after 180 on event 1**

**SP13B3 ATO VLV FAIL CLOSED**

**Insert malfunction SA33B after 180 on event 1**

**SP13B2 ATO VLV FAIL CLOSE**

**Insert malfunction SA32B after 180 on event 1**

**SP13B1 ATO VLV FAIL CLOSE**

**Insert malfunction SA46B after 180 on event 1**

**SP13A3 ATO VLV FAIL CLOSE**

**Insert malfunction SA45B after 180 on event 1**

**SP13A2 ATO VLV FAIL CLOSE**

**Insert malfunction SA44B after 180 on event 1**

**SP13A1 ATO VLV FAIL CLOSE**

**EVALUATOR COPY**

**INITIAL CONDITIONS:**

The Reactor was tripped and the supplemental actions of DB-OP-02000 have been completed.

Preparations to place the Motor Driven Feed Pump in service are in progress.

The Shift Manager has determined a Rapid Cooldown to mode 5 is required. DB-OP-02543, Rapid Cooldown is in progress.

**INITIATING CUES:**

The CSRO has directed you to establish an 80-100°F/Hr Cooldown Rate starting at step 4.12.2 of DB-OP-02543, Rapid Cooldown.

**(Provide DB-OP-02543, Rapid Cooldown, Step 12 to the examinee.)**

**CANDIDATE COPY**

**INITIAL CONDITIONS:**

The Reactor was tripped and the supplemental actions of DB-OP-02000 have been completed.

Preparations to place the Motor Driven Feed Pump in service are in progress.

The Shift Manager has determined a Rapid Cooldown to mode 5 is required. DB-OP-02543, Rapid Cooldown is in progress.

**INITIATING CUES:**

The CSRO has directed you to establish an 80-100°F/Hr Cooldown Rate starting at step 4.12.2 of DB-OP-02543, Rapid Cooldown.

**PERFORMANCE INFORMATION**

NOTE: Critical steps denoted with a "C". Failure to meet any one of these standards for this item constitutes failure. Sequence is NOT critical unless denoted in the "Comments".

START TIME: _____
-------------------

1. PERFORMANCE STEP: Place the Turbine Bypass Valves in HAND  
.....**C**.....

STANDARD: Depresses hand pushbutton for side 1 and side 2 TBVs.  
Verifies White light lit, red light off

CUE: **None**

\_\_\_\_\_  
SAT UNSAT

2. PERFORMANCE STEP: Open Turbine Bypass Valves to commence cooldown  
.....**C**.....

STANDARD: Toggle Turbine Bypass valves side 1 and side 2 to open  
Verifies Amber lights lit above ICS control station

CUE: **If necessary, Another Operator will respond to ICS Mismatch alarm and control RCS inventory and pressure during RCS cooldown.**

\_\_\_\_\_  
SAT UNSAT

3. PERFORMANCE STEP: Attempts to establish 80 - 100 °F Cooldown of the RCS

STANDARD: Depresses open on TBV controls to attempt to establish cooldown of 80 - 100 °F/hr Monitors SPDS Cooldown graph. (~ 1.33 – 1.67 °F/min).

COMMENT: Actual Cooldown rate of 80 - 100 °F not critical as TBVs will fail closed

CUE: **None**

\_\_\_\_\_  
SAT UNSAT

**Alternate Path Starts here.**

**3 minutes after TBVs are placed in hand, the TBVs will fail closed. This will stop the RCS cooldown. The Examinee must recognize the failure and refer to step 4.12.2 RNO or step 4.12.3 which provides guidance on the use of the AVVs to continue the cooldown.**

---

4. PERFORMANCE STEP: Recognizes Turbine Bypass Valves fail to maintain cooldown  
.....**C**.....

STANDARD: Observes amber lights not lit. Plant commences to heat up. TBVs do not respond to control station.

CUE: (The operator may initially try to troubleshoot TBVs)

**If necessary, ask examinee what other methods are available for cooldown?  
Once examinee IDs AVVs are available, CUE Unit Supervisor directs you to continue with the Cooldown in accordance with step 4.12 of DB-OP-02543, Rapid Cooldown using AVVs (RNO step).**

SAT UNSAT

---

5. PERFORMANCE STEP: Place SG 1 AVV Hand/Auto Station in HAND  
.....**C**.....

STANDARD: Positions slider up to hand on PIC ICS11B

COMMENT: It is acceptable to place SG 2 AVV in HAND prior to SG 1 AVV  
For procedural guidance may refer to DB-OP-02000, Attachment 3:  
Operation of AVVs which includes the following additional steps which are NOT CRITICAL:

1. Reduce SG 1 AVV demand to zero
2. Press SG 1 AVV BLOCK pushbutton
3. Press AUTO SG 1 AVV Hand Indicating Switch

CUE: **None**

SAT UNSAT

---

6. PERFORMANCE STEP: Begin to control Steam Generator Pressure as required to  
.....**C**..... establish a cooldown

STANDARD: Incrementally increases PIC ICS11B demand controller output  
Monitor SPDS Cooldown graph to establish a cooldown

CUE: **None**

SAT UNSAT

---

7. PERFORMANCE STEP: Place SG 2 AVV Hand/Auto Station in HAND  
.....**C**.....

STANDARD: Positions slider up to hand on PIC ICS11A

COMMENTS: For procedural guidance may refer to DB-OP-02000, Attachment 3:  
Operation of AVVs which includes the following additional steps which are  
NOT CRITICAL:

1. Reduce SG 2 AVV demand to zero
2. Press SG 2 AVV BLOCK pushbutton
3. Press AUTO SG 2 AVV Hand Indicating Switch

CUE: **None**

          
SAT UNSAT

---

8. PERFORMANCE STEP: Begin to control Steam Generator Pressure as required to  
.....**C**..... establish a cooldown

STANDARD: Incrementally increases PIC ICS11A demand controller output  
Monitor SPDS Cooldown graph to establish a cooldown

CUE: **None**

          
SAT UNSAT

---

TERMINATING CUES: This JPM is complete (Terminated by the examiner)

          
END TIME

**NOTE: Wipe clean Attachment 3 operator aid if used.**

# **Simulator JPM f**

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

Examiner: \_\_\_\_\_

Facility: Davis-Besse JPM No: OPS-JPM-338 (NEW)

Task Title: Manually start both CSS trains after SFAS Level 4 signal

Task No: 026-002-05-0100 System: 026 Containment Spray System

K/A Reference: 026 A4.01 (3.9) R3 Safety Function: 5 Containment Integrity

Time Critical Task: No Alternate Path: No

Validation Time: 10 minutes

**Method of testing / Location:**

Simulated Performance \_\_\_\_ Actual Performance X  
Classroom \_\_\_\_ Simulator X Plant \_\_\_\_

**Task Standard:**

Start both Containment Spray Pumps and open their respective discharge valves.

**Required Materials:**

DB-OP-06013 R29 Section 5.2 and 5.3.

**General References:**

None

**Notes:**

None.

**Initial Conditions:**

The plant conditions are specified in the Initial Conditions and Initiating Cues.

**Initiating Cue:**

The Initiating Cues are specified in the Examiner/Student Copy Performance Measure pages.

**SIMULATOR INSTRUCTIONS:**

**INITIAL CONDITION:**

A LOCA has occurred

Containment pressure has exceeded the SFAS Level 4 setpoint

Containment Spray Pumps have not started

IC427

**ADDITIONAL SETUP/DEVIATION FROM INITIAL CONDITION:**

Insert malfunction that inhibits start of both containment spray pumps and opening of CS discharge valves.

Both containment spray pump discharge valves, (CS1530 and CS1531) are closed.

**MALFUNCTIONS/FAILURE TO INSERT:**

None

**EXAMINER COPY**

**INITIAL CONDITIONS:**

A LOCA has occurred

Containment pressure has exceeded the SFAS Level 4 setpoint

Containment Spray pumps have not started

**INITIATING CUES:**

The Command SRO has directed you to manually start Containment Spray pumps 1 and 2 and spray containment in accordance with DB-OP-06013, Section 5.2 and 5.3.

**(Provide examinee a copy of DB-OP-06013, Section 5.2 and 5.3)**

**CANDIDATE COPY**

**INITIAL CONDITIONS:**

A LOCA has occurred

Containment pressure has exceeded the SFAS Level 4 setpoint

Containment Spray pumps have not started

**INITIATING CUES:**

The Command SRO has directed you to manually start Containment Spray pumps 1 and 2 and spray containment in accordance with DB-OP-06013, Section 5.2 and 5.3.

---

**PERFORMANCE INFORMATION**

NOTE: Critical steps denoted with a "C". Failure to meet any one of these standards for this item constitutes failure. Sequence is NOT critical unless denoted in the "Comments".

START TIME: _____
-------------------

**Note: Spray pumps can be started in either sequence.**

- 
1. PERFORMANCE STEP: Step 5.2.1: Verify DH7B, BWST ISOLATION VALVE, is OPEN  
STANDARD: Observes DH7B RED light ON, GREEN light OFF  
CUE: **None**

SAT UNSAT

- 
2. PERFORMANCE STEP: Step 5.2.2: OPEN CS1530, CTMT SPRAY DISCH  
.....**C**.....

NOTE: It is not required to depress the BLOCK pushbutton.

STANDARD: Presses OPEN on HIS 1530. Observes RED light ON, GREEN light OFF

CUE: **None**

SAT UNSAT

- 
3. PERFORMANCE STEP: Step 5.2.3: Start CTMT SPRAY PUMP 1  
.....**C**.....

STANDARD: Rotates HIS 1533 to Start and releases. Observes amp increase, RED light ON and GREEN light OFF.

CUE: **None**

SAT UNSAT

- 
4. PERFORMANCE STEP: Step 5.2.4: Verify flow indicated on FI1547, CS PUMP 1 DISCH FLOW

STANDARD: Observe flow indication between 1100 GPM and 1900 GPM. Acknowledge Alarms 3-1-J, CS PMP 1 DISCH FLOW LO, and/or 3-3-J CS PMP 1 DISCH FLOW HI, as applicable. Observe alarm annunciators extinguish.

CUE: **None**

SAT UNSAT

5. PERFORMANCE STEP: Step 5.3.1: Verify DH7A, BWST ISOLATION VALVE, is OPEN

STANDARD: At SFAS panel verifies that DH7A GREEN light OFF and RED light ON

CUE: **None**

SAT UNSAT

---

6. PERFORMANCE STEP: Step 5.3.2: OPEN CS1531, CTMT SPRAY DISCH

.....**C**.....

NOTE: It is not required to depress the BLOCK pushbutton.

STANDARD: Presses OPEN on HIS 1531. Observes RED light ON, GREEN light OFF

CUE: **None**

SAT UNSAT

---

7. PERFORMANCE STEP: Step 5.3.3: Start CTMT SPRAY PUMP 2

.....**C**.....

STANDARD: Rotates HIS 1532 to Start and releases. Observes amp increase, RED light ON and GREEN light OFF

CUE: **None**

SAT UNSAT

---

8. PERFORMANCE STEP: Step 5.3.4: Verify flow indicated on FI1535, CS PUMP 2 DISCH FLOW

STANDARD: Observe flow indication between 1100 GPM and 1900 GPM. Acknowledge Alarms 3-2-J, CS PMP 2 DISCH FLOW LO, and/or 3-4-J, CS PMP 2 DISCH FLOW HI, as applicable. Observe alarm annunciators extinguish.

CUE: **None**

SAT UNSAT

---

TERMINATING CUE: Another operator will complete the procedure. The JPM is complete.

END TIME

# **Simulator JPM g**

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

Examiner: \_\_\_\_\_

Facility: Davis-Besse JPM No: OPS-JPM-163

Task Title: Restore Power to D2 from EDG 2 following a LOOP and SBODG Failure

Task No: 000-032-05-0100 System: 062 AC Distribution System

K/A Reference: 062 K6.13 (3.4) Safety Function: 6 Electrical

Time Critical Task: No Alternate Path: Yes

Validation Time: 12 minutes

**Method of testing:**

Simulated Performance \_\_\_\_ Actual Performance X

Classroom \_\_\_\_ Simulator X Plant \_\_\_\_

**Task Standard:**

- Lineup to restore power to D2 from the SBODG
- When the SBODG fails to start, repower D2 from EDG 2

**Required Materials:**

- Attachment 5 of DB-OP-02000 R33 Section A: MDFP
- Attachment 6 of DB-OP-02000 R33 Section 2.0

**General References:**

None

**Notes:**

None

**Initial Conditions:**

The plant conditions are specified in the Initial Conditions and Initiating Cues.

**Initiating Cue:**

The Initiating Cues are specified in the Examiner/Student Copy Performance Measure pages.

**SIMULATOR INSTRUCTIONS**

**INITIAL CONDITION:**

Mode 3

IC426

**ADDITIONAL SETUP/DEVIATION FROM INITIAL CONDITION:**

1. Loss of offsite power
2. SBODG Fail to start
3. Loss of both AFPs
4. EFW Pump OOS

**MALFUNCTIONS/FAILURE TO INSERT:**

1. Loss of offsite power – **IMF P8RFC**
2. AFW pump 1 fails to start - **IMF SFEHB**
3. AFW pump 2 fails to start - **IMF SFEPB**
4. SBODG fails to start -

**ACTION/CUES:**

Place/Remove Caution Tag on EFW Pump Start Switch

**EXAMINER COPY**

**INITIAL CONDITIONS:**

A loss of offsite power has occurred from 100% power

Both AFW pumps have failed to start and deliver flow to the Steam Generators

The EFW Pump is OOS

**INITIATING CUES:**

You are the BOP Reactor Operator.

You have been directed by the CSRO to repower bus D2 and place the MDFP in service.

**REFER TO**

- Attachment 5: Guidelines for Restoring Feedwater
- Attachment 6: Reenergization of Buses D2, F7, AND MCC F71

All other plant actions are being performed by other operators

**Provide the examinee**

1. **Attachment 5 of DB-OP-02000 Section A: Motor Driven Feedwater Pump**
2. **Attachment 6 of DB-OP-02000**

**CANDIDATE COPY**

**INITIAL CONDITIONS:**

A loss of offsite power has occurred from 100% power

Both AFW pumps have failed to start and deliver flow to the Steam Generators

The EFW Pump is OOS

**INITIATING CUES:**

You are the BOP Reactor Operator.

You have been directed by the CSRO to repower bus D2 and place the MDFP in service.

**REFER TO**

- Attachment 5: Guidelines for Restoring Feedwater
- Attachment 6: Reenergization of Buses D2, F7, AND MCC F71

All other plant actions are being performed by other operators

---

**PERFORMANCE INFORMATION**

NOTE: Critical steps denoted with a "C". Failure to meet any one of these standards for this item constitutes failure. Sequence is NOT assumed unless denoted in the "Comments".

START TIME: _____
-------------------

1. PERFORMANCE STEP: Locate the correct Section of Attachment 5

STANDARD: Identifies Section A as the correct Section

CUE: **None**

---

SAT UNSAT

2. PERFORMANCE STEP: Route to Attachment 6 to energize Bus D2 and start the MDFP (Attachment 5 Section A Step 1)

STANDARD: Identifies D2 as deenergized and routes to Attachment 6

CUE: **None**

---

SAT UNSAT

3. PERFORMANCE STEP: Determine source of power for D2 bus (Attachment 6 description)

STANDARD: Consult with the Command SRO to determine most desirable source for Bus D2 that is available  
Routes to Section 2.0 of Attachment 6

CUE: **If asked, the CSRO concurs the most desirable source for Bus D2 is the SBODG**

---

SAT UNSAT

4. PERFORMANCE STEP: Check AD213 is closed (Attachment 6 Section 2 Step 2.1)

STANDARD: Observe AD213 Red light is LIT on HS 11118

CUE: **None**

---

SAT UNSAT

5. PERFORMANCE STEP: Verify ABDD2 is open (Attachment 6 Section 2 Step 2.2)  
.....**C**.....

STANDARD: Rotate HIS 6228, ABDD2, BUS TIE XFMR BD, to TRIP, Observe Green light is LIT, Red light goes OFF

CUE: **None**

SAT UNSAT

---

6. PERFORMANCE STEP: Verify AD110 is open (Attachment 6 Section 2 Step 2.3)

STANDARD: Observes Breaker AD110 GREEN light is lit on HIS 6233

CUE: **None**

SAT UNSAT

---

**ALTERNATE PATH STARTS HERE**  
**The SBODG will NOT start, D2 will be powered from EDG 2 via D1.**

---

7. PERFORMANCE STEP: Attempt to start the SBODG (Attachment 6 Section 2 Step 2.4)  
.....**C**.....

STANDARD: Press START pushbutton, HS 11085 on Panel C5740 in the Control Room.  
Recognizes the speed remains at 0 RPM  
Reports SBODG failed to start to Shift Supervisor  
Route to Section 3.0 of Attachment 6: Reenergization of Bus D2 from Bus D1

CUE: **SM acknowledges the SBODG failed to start**  
**If asked, concur with restoring power to D2 from D1.**  
**If necessary,**

- **then direct the BOP to restore feedwater, by use of Attachment 5 and 6 of DB-OP-02000.**
- **The SBODG failed to start locally.**

SAT UNSAT

---

8. PERFORMANCE STEP: Verify AD301, SBODG BKR is open

NOTE: JPM Steps 8-15 can be performed in any order.  
(Attachment 6 Section 3 Step 3.1 1). bulleted steps)

STANDARD: Observes Breaker AD301 GREEN light is lit

CUE: **None**

SAT UNSAT

---

9. PERFORMANCE STEP: Verify AD205, XFMR BDF6 is open

STANDARD: Observes Breaker AD205 GREEN light is lit

CUE: **None**

---

SAT UNSAT

10. PERFORMANCE STEP: Verify AD206, CLNG WTR PMP 2 is open

STANDARD: Observes Breaker AD206 GREEN light is lit

CUE: **None**

---

SAT UNSAT

11. PERFORMANCE STEP: Verify AD201, STA AIR CMPSR 2 is open or place in lock out

STANDARD: Observes Breaker AD201 GREEN light is lit or place HIS in lock out

CUE: **None**

---

SAT UNSAT

12. PERFORMANCE STEP: Verify AD202, CLNG TWR MU PMP 2 is open

STANDARD: Observes Breaker AD202 GREEN light is lit

CUE: **None**

---

SAT UNSAT

13. PERFORMANCE STEP: Verify AD204, HTR DRN PMP 2 is open

STANDARD: Observes Breaker AD204 GREEN light is lit

CUE: **None**

---

SAT UNSAT

14. PERFORMANCE STEP: Verify AD207, CNDS PMP 2 is open

STANDARD: Observes Breaker AD207 GREEN light is lit

CUE: **None**

---

SAT UNSAT

15. PERFORMANCE STEP: Verify AD210, MOTOR DRIVEN FEED PUMP is open

STANDARD: Observes Breaker AD210 GREEN light is lit

CUE: **None**

SAT UNSAT

---

16. PERFORMANCE STEP: Verify Open ABDD2 using HIS 6228  
(Attachment 6 Section 3 Step 3.1 2.)

STANDARD: Observes Breaker ABDD2 GREEN light is lit

NOTE: Performed in JPM Step 5

CUE: **None**

SAT UNSAT

---

17. PERFORMANCE STEP: Place D1 SYNC SELECT in the BKR to D2 position  
.....**C**..... (Attachment 6 Section 3 Step 3.1 3.)

STANDARD: Install knob and rotate D1 SYNC SELECT to the BKR to D2 position

CUE: **If needed, SM concurs DG 2 SYNC is the D1 SYNC SELECT switch**

SAT UNSAT

---

18. PERFORMANCE STEP: Close AD110, HIS 6233 (Attachment 6 Section 3 Step 3.1 4.)  
.....**C**.....

STANDARD: Close AD110 using HIS 6233  
Check indicating lights change to Red ON and Green OFF  
Verify D2 is energized by observing correct voltage (Step 3.1 5.)

CUE: **None**

SAT UNSAT

---

19. PERFORMANCE STEP: Place D1 SYNC SELECT in the OFF position  
(Attachment 6 Section 3 Step 3.1 6.)

STANDARD: Rotate D1 SYNC SELECT to the OFF position

CUE: **None**

SAT UNSAT

---

20. PERFORMANCE STEP: Verify AD2DF7 is closed (Attachment 6 Section 3 Step 3.1 7).)

STANDARD: Observe AD2DF7 Red light is LIT

CUE: None

SAT UNSAT

---

21. PERFORMANCE STEP: Verify BDF7 is closed (Attachment 6 Section 3 Step 3.1 8).)

STANDARD: Observe BDF7 Red light is LIT

CUE: None

SAT UNSAT

---

22. PERFORMANCE STEP: Check load on EDG 2 (Attachment 6 Section 3 Step 3.2)

STANDARD: Check load on EDG 2 is less than 2250 KW.  
GO TO Attachment 5, Section A, MDFP (Attachment 6 Section 3 Step 3.3)

CUE: **None**

SAT UNSAT

---

TERMINATING CUES: This JPM is complete. (Terminated by the evaluator)

END TIME

# **Simulator JPM h**

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

Examiner: \_\_\_\_\_

Facility: Davis-Besse JPM No: OPS-JPM-080

Task Title: Perform the actions for the BOP RO for a Serious Control Room Fire

Task No: 000-068-05-0100 System: 086 Fire Protection System

K/A Reference: 068 AA1.06 / 3.7 Safety Function: 8 Plant Service Systems

Time Critical Task: No Alternate Path: No

Validation Time: 4 minutes

**Method of testing / Location:**

Simulated Performance \_\_\_\_ Actual Performance X

Classroom \_\_\_\_ Simulator X Plant \_\_\_\_

**Task Standard:**

Trip MUP 1 and Close RC11 prior to CTRM evacuation

**Required Materials:**

DB-OP-02519 R28, ATTACHMENT 4: BOP RO Actions Prior To Leaving the Control Room

**General References:**

None

**Notes:**

The stand-by candidate should be allowed to review the procedures and prints prior to entering the simulator to allow the JPM to start ASAP.

**Initial Conditions:**

The plant conditions are specified in the Initial Conditions and Initiating Cues.

**Initiating Cue:**

The Initiating Cues are specified in the Examiner/Student Copy Performance Measure pages.

**SIMULATOR INSTRUCTIONS**

**INITIAL CONDITION:**

100% power with MUP 1 running

IC423

**ADDITIONAL SETUP/DEVIATION FROM INITIAL CONDITION:**

Trip the Reactor, Initiate and Isolate SFRCS

**MALFUNCTIONS/FAILURE TO INSERT:**

None

**EXAMINER COPY**

**INITIAL CONDITIONS:**

You are the BOP RO

A serious Control Room fire exists.

The Fire Brigade has been activated to respond to the Fire

The Command SRO has determined that transfer of control to the Auxiliary Shutdown Panel is required to protect the health and safety of the general public (prevent core damage).

The Reactor has been Tripped and the SFRCS has been Initiated and Isolated.

Conditions permit the Reactor Operators to perform their Control Room actions prior to abandoning the Control Room.

**INITIATING CUES:**

The Command SRO has directed you to perform DB-OP-02519, Serious Control Room Fire, Attachment 4, BOP Reactor Operator Actions Prior To Leaving The CTRM.

**(Provide the examinee a copy of DB-OP-02519, Attachment 4)**

**CANDIDATE COPY**

**INITIAL CONDITIONS:**

You are the BOP RO

A serious Control Room fire exists.

The Fire Brigade has been activated to respond to the Fire

The Command SRO has determined that transfer of control to the Auxiliary Shutdown Panel is required to protect the health and safety of the general public (prevent core damage).

The Reactor has been Tripped and the SFRCS has been Initiated and Isolated.

Conditions permit the Reactor Operators to perform their Control Room actions prior to abandoning the Control Room.

**INITIATING CUES:**

The Command SRO has directed you to perform DB-OP-02519, Serious Control Room Fire, Attachment 4, BOP Reactor Operator Actions Prior To Leaving The CTRM.

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**PERFORMANCE INFORMATION**

NOTE: Critical steps denoted with a "C". Failure to meet any one of these standards for this item constitutes failure. Sequence is NOT required unless denoted in the "Comments".

START TIME: _____
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1. PERFORMANCE STEP: Reviews DB OP 02519, Attachment 4

STANDARD: Identifies DB-OP-02519, Attachment 4, as the correct procedure.

CUE: **None**

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SAT UNSAT

2. PERFORMANCE STEP: Check the Main Turbine is Tripped. (ATTACHMENT 4 Step 1)

STANDARD: Observe Main Turbine Stop and Control Valves are closed.

NOTE: May N/A step based on Initial Cue.

CUE: **None**

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SAT UNSAT

3. PERFORMANCE STEP: Close RC 11, PORV BLOCK, HIS RC11, PORV BLOCK.  
.....**C**..... (ATTACHMENT 4 Step 2)

STANDARD: Depress the CLOSE pushbutton for HIS RC11, PORV Block.  
Observe Green light LIT, Red light OFF.

CUE: **None**

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SAT UNSAT

4. PERFORMANCE STEP: Check Makeup Pump 2 is OFF (ATTACHMENT 4 Step 3)

STANDARD: Observe HIS MU24B for MUP 2 Green light is LIT

CUE: **None**

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SAT UNSAT

5. PERFORMANCE STEP: Stop Makeup Pump 1 (ATTACHMENT 4 Step 4)  
.....**C**.....

STANDARD: Turn HIS MU24A, Makeup Pump 1 hand switch, counterclockwise to STOP.  
Observe HIS MU24A for MUP 1 Green light is LIT, Red light is OFF

CUE: **None**

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SAT UNSAT

TERMINATING CUES: This JPM is complete. (Terminated by evaluator)

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END TIME