Facility: Davis-Besse **Task No:** 115-015-01-0100

Task Title: Calculate a Shutdown Margin with Tave >500°F

K/A Reference: 2.1.43 (4.1) **Job Performance Measure No**: 58

Examinee: _____

NRC Examiner: _____ **Date:** _____

Method of testing:

Simulated Performance ___ Actual Performance _X_

Classroom _X_ Simulator __ Plant ___

Read to the examinee:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

This JPM is not dependant on any specific simulator initial conditions since the task is administrative in nature.

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

Task Standard:

Manually calculate a shutdown margin

Required Materials:

DB-NE-06202, Reactivity Balance Calculations Procedure
DB-NE-06201, Reactor Operator Curve Book Procedure
Straight edge, Calculator

General References:

Initiating Cue:

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

.

Time Critical Task: No

Validation Time: 20 minutes

EXAMINER COPY

INITIAL CONDITIONS:

The plant is in Mode 3 following a reactor trip.

All systems are in their normal lineup.

The START program is not available.

The following conditions exist:

Burnup: 60 EFPD
Boron Conc.: 1875 ppmB
Tave: 555°F
APSRs at 29.5%
There is one known stuck rod.
The Reactor Engineer reports values for the following:
Transient poisons is -2.7% ΔK/K
Correction factor for boron 10 depletion is 0.96
Reactivity Anomaly is zero.

INITIATION CUE:

The Unit Supervisor has directed you to manually calculate a shutdown margin per DB-NE-06202, Reactivity Balance Calculations, and DB-NE-06201, Reactor Operator Curve Book.

(Hand Candidate a copy of the DB-NE-06202, Reactivity Balance Calculations Procedure and make DB-NE-06201, Reactor Operator Curve Book Procedure available.

CANDIDATE COPY

INITIAL CONDITIONS:

The plant is in Mode 3 following a reactor trip.

All systems are in their normal lineup.

The START program is not available.

The following conditions exist:

Burnup: 60 EFPD
Boron Conc.: 1875 ppmB
Tave: 555°F
APSRs at 29.5%
There is one known stuck rod.
The Reactor Engineer reports values for the following:
Transient poisons is -2.7% ΔK/K
Correction factor for boron 10 depletion is 0.96
Reactivity Anomaly is zero.

INITIATION CUE:

The Unit Supervisor has directed you to manually calculate a shutdown margin per DB-NE-06202, Reactivity Balance Calculations, and DB-NE-06201, Reactor Operator Curve Book.

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: _____

1. PERFORMANCE STEP: Locate correct procedure section

   STANDARD: Identifies Section 8 or Attachment 4 of DB-NE-06202, Reactivity Balance Calculations, as the correct section.

   CUE: **None**

SAT UNSAT

2. PERFORMANCE STEP: Determine reactivity worth of the fuel **C**

   STANDARD: From Figure 2, determine value of 12.4 to 12.5 %ΔK/K and enter this value on Attachment 4.

   COMMENTS: Actual value is 12.48 %ΔK/K

   CUE: **None**

SAT UNSAT

3. PERFORMANCE STEP: Determine the reactivity worth due to boron **C**

   STANDARD: From Figure 3, determine value of –12.2 to –12.1 %ΔK/K for ρ(boron) based on ρ(BBOL) = B(RCS) 1875 ppmB x CF(B10) 0.96 x (1-.01) = 1782 ppmB.

   From Figure 4, determine value of 1.007 to 1.009 for the BCF.

   Multiply these two values to obtain between –12.18 and –12.31 %ΔK/K.

   COMMENTS: Actual values: ρ(boron) is -12.15 %ΔK/K, BCF is 1.008 and total boron reactivity worth is –12.25 %ΔK/K

   CUE: **None**

SAT UNSAT

4. PERFORMANCE STEP: Utilize the reactivity worth due to transient poisons

STANDARD: Determine from initial conditions (-2.7 %ΔK/K)

CUE: **None**

SAT UNSAT

5. PERFORMANCE STEP: Determine the reactivity worth due to temperature
C

STANDARD: From DB-NE-06202 Attachment 4, note at bottom of page, and step 8.2 of section 8, determine value of zero due to Mode 3 and > 532°F.

CUE: **None**

SAT UNSAT

6. PERFORMANCE STEP: Determine adjusted rod worth for one known stuck rod
C

STANDARD: From Figure 10, determine worth of -4.24 to -4.26 %ΔK/K

COMMENTS: Actual value is -4.25 %ΔK/K

CUE: **None**

SAT UNSAT

7. PERFORMANCE STEP: Determine APSR worth
C

STANDARD: From Figure 11A, determine APSR worth of -0.13 to -0.14 %ΔK/K

COMMENTS: Actual value is -0.135 %ΔK/K

CUE: **None**

SAT UNSAT

8. PERFORMANCE STEP: Determine Flux Redistribution Penalty (FRP) using Table 1
C

STANDARD: Determine Flux Redistribution Penalty is 0.35 %ΔK/K

CUE: **None**

SAT UNSAT

9. PERFORMANCE STEP: Determine reactivity anomaly worth

STANDARD: Determine zero from Initial Conditions

CUE: **None**

SAT UNSAT

10. PERFORMANCE STEP: Determine Maximum Excess Pu-239 Worth from Figure 20B
C

STANDARD: Determine .159 %ΔK/K to .161 %ΔK/K

COMMENTS: Actual value is .1602%ΔK/K

CUE: **None**

SAT UNSAT

11. PERFORMANCE STEP: Determine the value for shutdown margin
C

STANDARD: Determine that shutdown margin is a value between 6.2 and 6.4 %ΔK/K.

COMMENTS: Actual value is 6.35 %ΔK/K

CUE: **None**

SAT UNSAT

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

END TIME

Verification of Completion

Job Performance Measure No. _____

Examinee's Name: _____

Examiner's Name: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: Satisfactory/Unsatisfactory

Examiner's signature and date: _____

ATTACHMENT 4: SHUTDOWN MARGIN (SDM) CALCULATION WITH Tave ≥ 500°F - SECTION 8.0

EFPD= **60** CF(B10)= **.96** B(RCS)= **1875** ppmB Tave*= **555** °F APSR= **29.5** %wd

Known stuck rod? _____No **X** Yes Data: Date **Today** Time **Now**

Use the **critical reference condition** for all data.

Shutdown Margin (SDM)

[**12.48** (ρ(fuel)) + **-12.25** (ρ(boron)) + **-2.7** (ρ(tp)) + **0** (ρ(temp)) + **-4.25** (R) + **-.135** (ρ(APSR)) + **.35** (FRP) + **0** (ρ(anom)) + **.1602** (ρ(Pu-max))]x[-1]= **6.35** %Δk/k (SDM)

Where:

ρ(fuel) is Fuel Worth from Figure 2 based on EFPD

ρ(boron) is Boron Worth = **-12.15** (ρ(BBOL)) x **1.008** (CF(FBU)) = **-12.25** (ρ(boron)) %Δk/k

Where:

ρ(BBOL) is Boron Worth at Beginning of Life from Figure 3 based on B(ROCB) (Critical curve)

1875 (B(RCS)) x **.96** (CF(B10)) x (1 - .01) = **1782** (B(ROCB)) ppmB

Where: .01 is the Boron Concentration Measurement Uncertainty

(1 - .01) is the Boron Concentration Measurement Correction Factor

CF(FBU) is Correction Factor for Fuel Burnup from Figure 4 based on EFPD (Critical curve)

ρ(tp) is Transient Poison Worth from START program for time of data

ρ(temp)* is Temperature Reactivity = _____ (α_T) x _____ (ΔT) = _____ (ρ(temp)) %Δk/k

Where:

α_T is Temperature Coefficient from Figure 12 based on EFPD and B(ROCB)

ΔT = Tave - 532°F

R is Control Rod Worth from Figure 10 based on EFPD and stuck rod condition

ρ(APSR) is APSR Worth from Figure 11A based on EFPD and APSR position

FRP is Flux Redistribution Penalty from Table 1 of ROCB

* Per Technical Specification 1.1 (see Step 8.2), in Modes 1 and 2, the value of Tave for SDM calculations shall be 532°F. Therefore, zero shall be entered for ρ(temp).
In Mode 3 with RCS Tave > 532°F, zero should be entered for ρ(temp), for conservatism.
In Mode 3 with RCS Tave < 532°F, ρ(temp) shall be calculated based on α_T and ΔT.

ρ(anom) is Reactivity Worth of HFP Anomaly from the Reactor Operating Guidance
(For conservatism, a value of 0 may be used in place of a negative HFP anomaly for calculations of Shutdown Margin and Shutdown Value. See Step 4.2.8.)

ρ(Pu-max) is Maximum Excess Pu-239 Worth from Figure 20B based on EFPD

Calculated by _____ Date _____ Time _____

Checked by _____ Date _____

Facility: Davis-Besse **Task No:** 115-033-01-0100

Task Title: Plot and Evaluate 1/M Data

K/A Reference: 2.1.7 (4.4) **Job Performance Measure No**: NEW

Examinee: _____

NRC Examiner: _____ **Date:** _____

Method of testing:

Simulated Performance ___ Actual Performance _X_

Classroom _X_ Simulator __ Plant ___

Read to the examinee:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

This JPM is not dependant on any specific simulator initial conditions since the task is administrative in nature.

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

Task Standard:

Determine that 1/M data predicts criticality will occur before reaching the Lower Rod Index limit of the ECP and make a recommendation to the SRO to not make the next rod withdrawal

Required Materials:

DB-OP-06912, Approach to Criticality completed up to step 4.2.5.17 with Attachment 1 SR data, listed up to 100 percent rod index
Calculator and ruler/straight edge

General References:

Initiating Cue:

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

.

Time Critical Task: No

Validation Time: 15 minutes

EXAMINER COPY

INITIAL CONDITIONS:

The Plant is in Mode 2.
A reactor startup is in progress.
Group 1-4 rods are withdrawn
Regulating Rods are pulled to 100

INITIATION CUE:

The Shift Manager directs you to perform a peer check of the Reactor Engineer performing the 1/M Plot by performing a separate 1/M Plot using the SR count rate data provided on Attachment 1 of DB-OP-06912, Approach to Criticality. Compare the 1/M data with the predicted ECP data and make a recommendation for further rod withdrawal.

(Hand Candidate a copy of DB-OP-06912, Approach to Criticality and a Straight Edge)

CANDIDATE COPY

INITIAL CONDITIONS:

The Plant is in Mode 2.
A reactor startup is in progress.
Group 1-4 rods are withdrawn
Regulating Rods are pulled to 100

INITIATION CUE:

The Shift Manager directs you to perform a peer check of the Reactor Engineer performing the 1/M Plot by performing a separate 1/M Plot using the SR count rate data provided on Attachment 1 of DB-OP-06912, Approach to Criticality. Compare the 1/M data with the predicted ECP data and make a recommendation for further rod withdrawal.

Document recommendation below.

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: _____

1. PERFORMANCE STEP: Refer to data on Attachment 1

   STANDARD: Refer to data on Attachment 1 for count rate data

   CUE: **None**

SAT UNSAT

2. PERFORMANCE STEP: Plots data SR data on 1/M Plot
   C

   STANDARD: Evaluates count rate data on attachment 1 and plots this data on the 1/M Plot for 25, 50 and 100 Rod Index

   COMMENTS: See attached answer key for 1/M plot values

   CUE: **None**

SAT UNSAT

3. PERFORMANCE STEP: Evaluate 1/M Plot data
   C

   STANDARD: Determines that the 1/M Plot predicts criticality before reaching the Lower Rod Index limit of the ECP listed as 121.7 (- 0.5%Δk/k)

   CUE: **None**

SAT UNSAT

3. PERFORMANCE STEP: **C** Notify SRO that the 1/M Plot predicts criticality before reaching the Lower Rod Index limit of the ECP and recommend no further rod withdrawal.

STANDARD: Notify SRO that the 1/M Plot predicts criticality before reaching the Lower Rod Index limit of the ECP and recommend no further rod withdrawal.

CUE: **None**

SAT UNSAT

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

END TIME

Verification of Completion

Job Performance Measure No. _____

Examinee's Name: _____

Examiner's Name: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: Satisfactory/Unsatisfactory

Examiner's signature and date: _____

ANSWER SHEET

ATTACHMENT 1: 1/M PLOT
Page 2 of 4

Count Rate Source NI1 NI2 Cmptr Point R796 R805
(Circle Source Used)

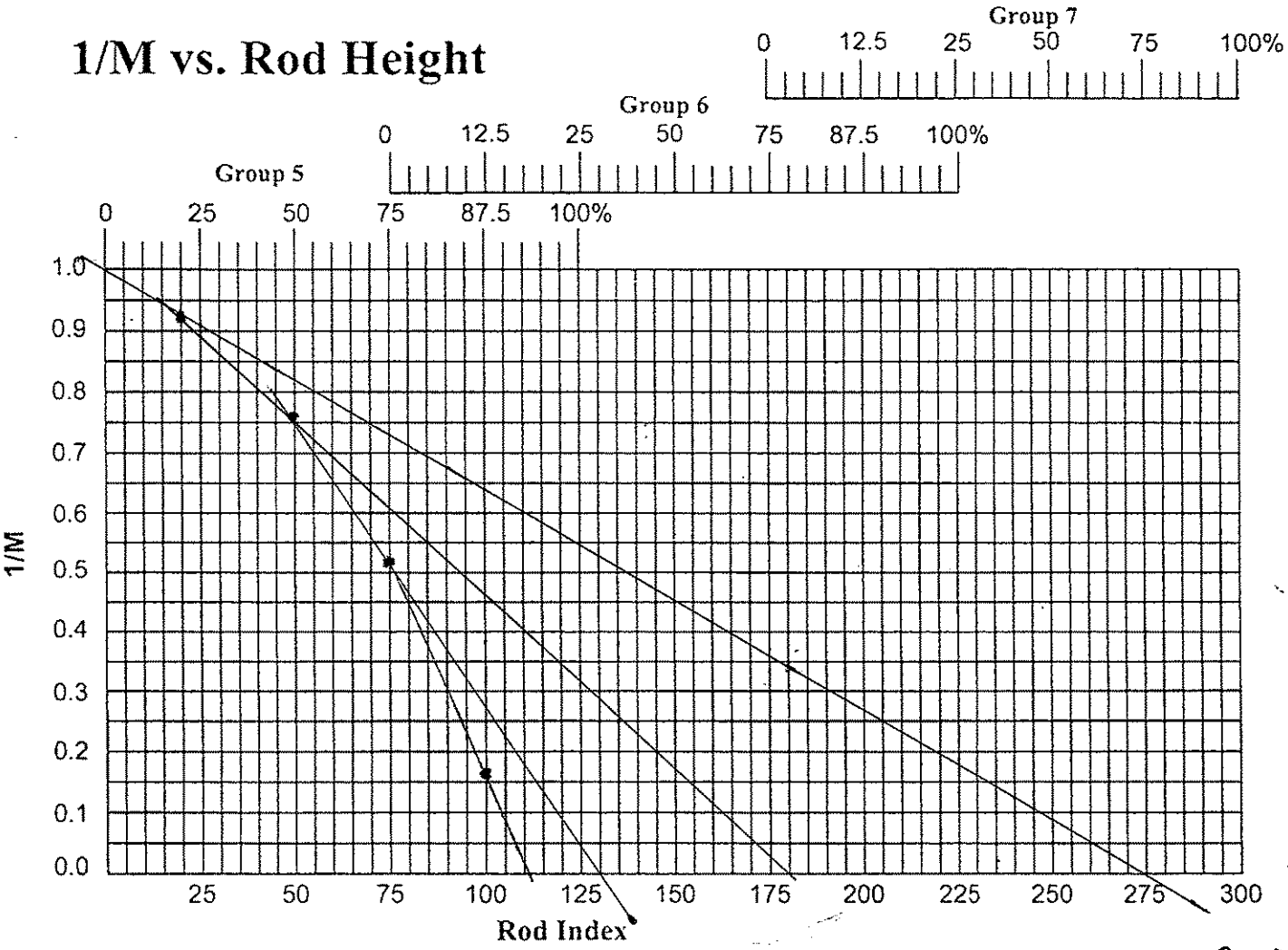
Basic Count Rate 266 cps

1/M = (Base Count Rate)/(Present Count Rate)

Rod Index	Count Rate	1/M	Pred Critical Pos.
25	289	.92	275
50	350	.76	180
75	512	.52	130
100	1662	.16	110
125			
150			
175			
200			
225			
250			
275			

ATTACHMENT 1: 1/M PLOT
Page 1 of 4

1/M vs. Rod Height



Lower Limit 121.7 ECP 165.3 Upper Limit 237.9

Date: TODAY

Time: NOW

Performed By: _____

RCS Boron Concentration: 1719 ppmB

PZR Boron Concentration: 1710 ppmB

MUT Boron Concentration: 1710 ppmB

ANSWER SHEET

Facility: Davis-Besse **Task No:** 115-032-01-0100

Task Title: Calculate RCS Flow with F744 inoperable

K/A Reference: 2.2.12 (3.7) **Job Performance Measure No**: 227

Examinee: _____

NRC Examiner: _____ **Date:** _____

Method of testing:

Simulated Performance ___ Actual Performance _X_

Classroom _X_ Simulator __ Plant ___

Read to the examinee:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

This JPM is not dependant on any specific simulator initial conditions since the task is administrative in nature.

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

Task Standard:

Perform Attachment 7: Calculation of RC Total Flow (Computer Point F744 Inoperable) and determine total flow value between 405 and 407 KGPM

Required Materials:

DB-OP-03006, Miscellaneous Shift Checks, Attachment 7 and step 4.32.1.b
Operator Special Summary RCS FLOW CALC, Page 183 CTRM Steam Table

General References:

Initiating Cue:

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

.

Time Critical Task: No

Validation Time: 13 minutes

EXAMINER COPY

INITIAL CONDITIONS:

The unit is at 100% power.

The crew is performing DB-OP-03006, Miscellaneous Instrument Shift Checks.

The Plant Process Computer is available but Computer Point F744, RC CLG TOTAL FLOW (KGPM), is unavailable.

INITIATION CUE:

The Unit Supervisor directs you to perform Attachment 7: Calculation of RC Total Flow Computer Point F744 Inoperable) in accordance with step 4.32.1.b of DB-OP-03006.

(Hand Candidate a copy of DB-OP-03006, Miscellaneous Shift Checks step 4.32.1.b and Attachment 7)

CANDIDATE COPY

INITIAL CONDITIONS:

The unit is at 100% power.

The crew is performing DB-OP-03006, Miscellaneous Instrument Shift Checks.

The Plant Process Computer is available but Computer Point F744, RC CLG TOTAL FLOW (KGPM), is unavailable.

INITIATION CUE:

The Unit Supervisor directs you to perform Attachment 7: Calculation of RC Total Flow (Computer Point F744 Inoperable) in accordance with step 4.32.1.b of DB-OP-03006.

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: _____

1. PERFORMANCE STEP: Enter Computer Point values on Attachment 7

   STANDARD: Enter values on Attachment 7 from printout
   - F857 74.9 (MPPH) (RC Loop 1 HLG Flow)
   - F858 75.5 (MPPH) (RC Loop 2 HLG Flow)
   - P722 2145.3 (PSIG) (RC Loop 1 NR Press)
   - P729 2155.3 (PSIG) (RC Loop 2 NR Press)
   - T780 559.6 (˚F) (RCP 1-1 Disch NR Temp)
   - T800 560.4 (˚F) (RCP 1-2 Disch NR Temp)
   - T820 559.7 (˚F) (RCP 2-1 Disch NR Temp)
   - T840 560.3 (˚F) (RCP 2-2 Disch NR Temp)

   CUE: **Provide Operator Special Summary with computer points values for F857 and F858 are averages from trend recorder value per * note at bottom of page**

   SAT UNSAT

2. PERFORMANCE STEP: Record Specific Volume using ASME Steam Tables on Attachment 7 **C**

   STANDARD: Record Loop 1 average Tavg: (T780 + T800)/2 = **560**
   Record Loop 1 RCS Pressure: P722 + 14.7 = **2160**
   Interpolate Specific Volume (V1) using Steam Table = **.021676**

   COMMENTS: **Provide ASME Steam Tables**

   CUE: **None**

   SAT UNSAT

3. PERFORMANCE STEP: Calculate Loop 1 Flow
C

STANDARD: Performs calculation:

(F857 reading)(V1)(124.675) = **202.4139** KGPM

COMMENTS: Loop 1 flow calc between **202** and **203** KGPM is satisfactory

CUE: **None**

SAT UNSAT

4. PERFORMANCE STEP: Record Specific Volume using ASME Steam Tables, pg. 183 on ATTACHMENT 7
C

STANDARD: Record Loop 2 average Tavg: (T820 + T840)/2 = **560**

Record Loop 2 RCS Pressure: P729 + 14.7 = **2170**

Interpolate Specific Volume (V2) using Steam Table = .**021672**

CUE: **None**

SAT UNSAT

5. PERFORMANCE STEP: Calculate Loop 2 Flow
C

STANDARD: Performs calculation:

(F858 reading)(V2)(124.675) = **203.9977** KGPM

COMMENTS: Loop 2 flow calc between **203** and **204** KGPM is satisfactory

CUE: **None**

SAT UNSAT

6. PERFORMANCE STEP: Calculate RC Total Flow (Loop 1 + Loop 2)
C

STANDARD: Add Loop 1 and Loop 2 flows
Loop 1 + Loop 2 = **406.412**

COMMENTS: Total Flow between **405** and **407** KGPM is satisfactory

CUE: **None**

SAT UNSAT

7. PERFORMANCE STEP: Complete ATTACHMENT 7

STANDARD: Signs and dates Calculation Performed by

CUE: **None**

SAT UNSAT

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

END TIME

Verification of Completion

Job Performance Measure No. _____

Examinee's Name: _____

Examiner's Name: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: Satisfactory/Unsatisfactory

Examiner's signature and date: _____

ATTACHMENT 7: CALCULATION OF RC TOTAL FLOW
(COMPUTER POINT F744 INOPERABLE)
Page 1 of 2

1.0 Enter the values from the following Computer Points:

F857 = 74.9	MPPH*	T780 = 559.6	°F
F858 = 75.5	MPPH*	T800 = 560.4	°F
P722 = 2145.3	PSIG	T820 = 559.7	°F
P729 = 2155.3	PSIG	T840 = 560.3	°F

2.0 Determine Loop 1 Flow:

2.1 Record the Specific Volume for the following conditions using the ASME Steam Tables, page 183:

$$\text{Temperature} = \frac{T780+T800}{2} = \frac{(559.6)+(560.4)}{2} = 560\ ^\circ F$$

Pressure (P722) = 2145.3 PSIG + 14.7 = 2160 PSIA

Specific Volume (V_1) = .021676 FT^3/LBM, from interpolation

2.2 Calculate Loop 1 Flow:

Loop 1 Flow = (F857)(V_1)(124.675)

Loop 1 Flow = (74.9)(.021676)(124.675) = 202.4139 KGPM

3.0 Determine Loop 2 Flow:

3.1 Record the Specific Volume for the following conditions, using the ASME Steam Tables, page 183:

$$\text{Temperature} = \frac{T820+T840}{2} = \frac{(559.7)+(560.3)}{2} = 560\ ^\circ F$$

Pressure (P729) = 2155.3 PSIG + 14.7 = 2170 PSIA

Specific Volume (V_2) = .021672 FT^3/LBM, from interpolation

* Place value of F857 and F858 on a trend recorder and use the average of the trend recorder value for the calculation. If a trend recorder is not available, find the average of Special Summary or Digital Voltmeter readings.

ATTACHMENT 7: CALCULATION OF RC TOTAL FLOW
(COMPUTER POINT F744 INOPERABLE)
Page 2 of 2

3.2 Calculate Loop 2 Flow:

Loop 2 Flow = (F858)(V_2)(124.675)

Loop 2 Flow = (75.5)(.021672)(124.675) = 203.9977 KGPM

4.0 Calculate RC Total Flow:

Total Flow = Loop 1 Flow + Loop 2 Flow

Total Flow = ( ) + ( ) = 406.412 KGPM

Calculation performed by Signature Date Today

Independent Verification by _____ Date _____

Facility: Davis-Besse **Task No:** 000-067-05-0100

Task Title: Perform Radiation Element Administrative Checks for a Radioactive Liquid Release

K/A Reference: 2.3.5 (2.9) **Job Performance Measure No**: 260

Examinee: _____

NRC Examiner: _____ **Date:** _____

Method of testing:

Simulated Performance ___ Actual Performance _X_

Classroom ___ Simulator _X_ Plant ___

Read to the examinee:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

Set setpoints to initial readings of WARN 1.23 E4 and HIGH 1.23 E5

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

Task Standard:

Set RE1878A Warning and High setpoints

Required Materials:

DB-OP-03011 Attachment 20, Setting Digital Setpoints (N/A RE1878B), Screwdriver

Initiating Cue:

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

.

Time Critical Task: No

Validation Time: 15 minutes

EXAMINER COPY

INITIAL CONDITIONS:

The plant is at 100% power

The Miscellaneous Waste Monitor Tank is recirculating in preparation for a release

INITIATION CUE:

The Unit Supervisor directs you to set RE1878A warning and high alarm setpoints to the values given in item 10.b of DB-OP-03011, Radioactive Batch Release, using DB-OP-03011, Attachment 20, Setting Digital Setpoints

The new setpoint values given in item 10.b of DB-OP-03011 are:

WARNING: 5.10E4

HIGH: 9.53E6

(Hand Candidate a copy of attachment 20 of DB-OP-03011)

CANDIDATE COPY

INITIAL CONDITIONS:

The plant is at 100% power

The Miscellaneous Waste Monitor Tank is recirculating in preparation for a release

INITIATION CUE:

The Unit Supervisor directs you to set RE1878A warning and high alarm setpoints to the values given in item 10.b of DB-OP-03011, Radioactive Batch Release, using DB-OP-03011, Attachment 20, Setting Digital Setpoints

The new setpoint values given in item 10.b of DB-OP-03011 are:

WARNING: 5.10E4

HIGH: 9.53E6

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: _____

---

1. PERFORMANCE STEP: Identifies correct procedure and section

   STANDARD: Identifies DB-OP-03011, Attachment 20 as the correct procedure and section

   CUE: **None**

SAT UNSAT

---

2. PERFORMANCE STEP: Withdraw module RE1878A
   C

   STANDARD: Withdraw module RE1878A far enough to expose FUNCTION SWITCH

   COMMENTS: The switch is on the right side of the module when viewed from the front (small red rotary switch)

   CUE: **None**

SAT UNSAT

---

3. PERFORMANCE STEP: Set WARN Alarm - Place FUNCTION SWITCH to position 1
   C

   STANDARD: Insert screwdriver and rotate the Function Switch to position 1

   COMMENTS: The examinee may elect to do the high range first. If so, go to step 15, then return here for Warning setpoint change

   CUE: **None**

SAT UNSAT

---

4. PERFORMANCE STEP: Depress ENTER pushbutton
C

STANDARD: ENTER pushbutton is depressed once, verifies current setpoint displayed with leftmost digit flashing.

COMMENT: Setup should have current value set to 1.23 E4

CUE: **None**

SAT UNSAT

5. PERFORMANCE STEP: Insert the correct value
C

STANDARD: The VALUE pushbutton is depressed until the first digit reads 5

CUE: **None**

SAT UNSAT

6. PERFORMANCE STEP: Select the next to digit to be changed
C

STANDARD: The DIGIT pushbutton is depressed and the second digit flashes

CUE: **None**

SAT UNSAT

7. PERFORMANCE STEP: Insert the correct value
C

STANDARD: The VALUE pushbutton is depressed until the second digit reads 1

CUE: **None**

SAT UNSAT

8. PERFORMANCE STEP: Select the next to digit to be changed
C

STANDARD: The DIGIT pushbutton is depressed and the third digit flashes

CUE: **None**

SAT UNSAT

9. PERFORMANCE STEP: Insert the correct value
C

STANDARD: The VALUE pushbutton is depressed until the third digit reads 0

CUE: **None**

SAT UNSAT

10. PERFORMANCE STEP: Select the next to digit to be changed
C

STANDARD: The DIGIT pushbutton is depressed and the fourth (exponent) digit flashes

CUE: **None**

SAT UNSAT

11. PERFORMANCE STEP: Insert the correct value
C

STANDARD: The VALUE pushbutton is depressed until the fourth (exponent) digit reads 4

CUE: **None**

SAT UNSAT

12. PERFORMANCE STEP: Depress ENTER
C

STANDARD: The ENTER pushbutton is depressed

CUE:

SAT UNSAT

13. PERFORMANCE STEP: Verify proper WARN ALARM SETPOINT is displayed
C

STANDARD: WARN pushbutton is depressed and held. WARN alarm setpoint is verified to be set at 5.10 E4

CUE: **None**

SAT UNSAT

14. PERFORMANCE STEP: Release WARN pushbutton
C

STANDARD: WARN pushbutton is released

CUE:

SAT UNSAT

15. PERFORMANCE STEP: Set HIGH Alarm - Place FUNCTION SWITCH to position 0
C

STANDARD: Insert screwdriver and rotate the Function Switch to position 0

CUE: **None**

SAT UNSAT

16. PERFORMANCE STEP: Depress ENTER pushbutton
C

STANDARD: ENTER pushbutton is depressed once, verifies current setpoint displayed with leftmost digit flashing.

COMMENT: Setup should have current value set to 1.23 E5

CUE: **None**

SAT UNSAT

17. PERFORMANCE STEP: Insert the correct value
C

STANDARD: The VALUE pushbutton is depressed until the first digit reads 9

CUE: **None**

SAT UNSAT

18. PERFORMANCE STEP: Select the next to digit to be changed
C

STANDARD: The DIGIT pushbutton is depressed and the second digit flashes

CUE: **None**

SAT UNSAT

19. PERFORMANCE STEP: Insert the correct value
C

STANDARD: The VALUE pushbutton is depressed until the second digit reads 5

CUE: **None**

SAT UNSAT

20. PERFORMANCE STEP: Select the next to digit to be changed
C

STANDARD: The DIGIT pushbutton is depressed and the third digit flashes

CUE: **None**

SAT UNSAT

21. PERFORMANCE STEP: Insert the correct value
C

STANDARD: The VALUE pushbutton is depressed until the third digit reads 3

COMMENT: Setup should already have digit selected to 3

CUE: **None**

SAT UNSAT

22. PERFORMANCE STEP: Select the next to digit to be changed
C

STANDARD: The DIGIT pushbutton is depressed and the fourth (exponent) digit flashes

CUE: **None**

SAT UNSAT

23. PERFORMANCE STEP: Insert the correct value
C

STANDARD: The VALUE pushbutton is depressed until the fourth (exponent) digit reads 6

CUE: **None**

SAT UNSAT

24. PERFORMANCE STEP: Depress ENTER
C

STANDARD: The ENTER pushbutton is depressed

CUE: **None**

SAT UNSAT

25. PERFORMANCE STEP: Verify proper HIGH ALARM SETPOINT is displayed
C

STANDARD: HIGH pushbutton is depressed and held. HIGH alarm setpoint is verified to be set at 9.53 E6

CUE: **None**

SAT UNSAT

26. PERFORMANCE STEP: Release HIGH pushbutton
C

STANDARD: The HIGH pushbutton is released

COMMENTS: If the High Alarm was set first return to step 3 for setting the WARN Alarm setpoint

CUE: **None**

SAT UNSAT

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

END TIME

Verification of Completion

Job Performance Measure No. _____

Examinee's Name: _____

Examiner's Name: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: Satisfactory/Unsatisfactory

Examiner's signature and date: _____

Facility: Davis-Besse **Task No:** 115-015-01-0100

Task Title: Shift Manager review of Shutdown Margin with Tave >500°F calculation

K/A Reference: 2.1.43 (4.3) **Job Performance Measure No**: NEW

Examinee: _____

NRC Examiner: _____ **Date:** _____

Method of testing:

Simulated Performance ___ Actual Performance _X_

Classroom _X_ Simulator __ Plant ___

Read to the examinee:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

This JPM is not dependant on any specific simulator initial conditions since the task is administrative in nature.

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

Task Standard:

Identify errors Shutdown Margin with Tave >500°F calculation and determine the correct values for those errors

Required Materials:

Completed Attachment 4 from DB-NE-06202, Reactivity Balance Calculations
DB-NE-06202, Reactivity Balance Calculations Procedure
DB-NE-06201, Reactor Operator Curve Book Procedure
Straight edge, Calculator

General References:

Initiating Cue:

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

Time Critical Task: No

Validation Time: 20 minutes

EXAMINER COPY

INITIAL CONDITIONS:

The plant is in Mode 3 following a reactor trip.

All systems are in their normal lineup.

The START program is not available.

The following conditions exist:

Burnup: 60 EFPD
Boron Conc.: 1875 ppmB
Tave: 555°F
APSRs at 29.5%
There is one known stuck rod.
The Reactor Engineer reports values for the following:
Transient poisons is -2.7% ΔK/K
Correction factor for boron 10 depletion is 0.96
Reactivity Anomaly is zero.

A Reactor Operator has completed performance of Attachment 4 of DB-NE-06202, Reactivity Balance Calculations for Shutdown Margin (SDM) Calculation with Tave >500°F

INITIATION CUE:

You are the Shift Manager. Perform a review for accuracy of the completed Attachment 4 of DB-NE-06202, Reactivity Balance Calculations for Shutdown Margin (SDM) Calculation with Tave >500°F, submitted by the Reactor Operator

(Hand Candidate a copy of the completed Attachment 4 and DB-NE-06202, Reactivity Balance Calculations Procedure and make DB-NE-06201, Reactor Operator Curve Book Procedure available.

CANDIDATE COPY

INITIAL CONDITIONS:

The plant is in Mode 3 following a reactor trip.

All systems are in their normal lineup.

The START program is not available.

The following conditions exist:

Burnup: 60 EFPD
Boron Conc.: 1875 ppmB
Tave: 555°F
APSRs at 29.5%
There is one known stuck rod.
The Reactor Engineer reports values for the following:
Transient poisons is -2.7% ΔK/K
Correction factor for boron 10 depletion is 0.96
Reactivity Anomaly is zero.

A Reactor Operator has completed performance of Attachment 4 of DB-NE-06202, Reactivity Balance Calculations for Shutdown Margin (SDM) Calculation with Tave >500°F

INITIATION CUE:

You are the Shift Manager. Perform a review for accuracy of the completed Attachment 4 of DB-NE-06202, Reactivity Balance Calculations for Shutdown Margin (SDM) Calculation with Tave >500°F, submitted by the Reactor Operator

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: _____

---

1. PERFORMANCE STEP: Reviews Attachment 4 of DB-NE-06202, Reactivity Balance Calculations for Shutdown Margin (SDM) Calculation with Tave >500°F, submitted by the Reactor Operator

   STANDARD: Checks data recorded on Attachment 4 of DB-NE-06202, Reactivity Balance Calculations for Shutdown Margin (SDM) Calculation with Tave >500°F, submitted by the Reactor Operator for accuracy

   CUE: **None**

SAT UNSAT

---

2. PERFORMANCE STEP: Recognize error in ρ (boron) calculation and determine correct value **C**

   STANDARD: Recognize incorrect value used in CF(B10)

   From Figure 3, determine value of –12.2 to –12.1 %ΔK/K for ρ(boron) based on ρ(BBOL) = B(RCS) 1875 ppmB x CF(B10) 0.96 x (1-.01) = 1782 ppmB.

   COMMENTS: Actual values: ρ(boron) is -12.15 %ΔK/K, BCF is 1.008 and total boron reactivity worth is –12.25 %ΔK/K

   CUE: **(if asked) Make corrections on attachment if necessary**

SAT UNSAT

---

3. PERFORMANCE STEP: Recognize error in R (Control Rod Worth from figure 10) and determine correct value **C**

   STANDARD: Recognize incorrect value used for R

   From Figure 10, determine worth of -4.24 to -4.26 %ΔK/K

   COMMENTS: Actual value is -4.25 %ΔK/K

   CUE: **(if asked) Make corrections on attachment if necessary**

	SAT	UNSAT

4. PERFORMANCE STEP: Recognize error in SDM calculation and determine correct value
C

STANDARD: Determine that shutdown margin is a value between 6.2 and 6.4 %ΔK/K.

COMMENTS: Actual value is 6.35 %ΔK/K

CUE: **(if asked) Make corrections on attachment if necessary**

SAT UNSAT

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

END TIME

Verification of Completion

Job Performance Measure No. _____

Examinee's Name: _____

Examiner's Name: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: Satisfactory/Unsatisfactory

Examiner's signature and date: _____

ANSWER KEY

ATTACHMENT 4: SHUTDOWN MARGIN (SDM) CALCULATION WITH Tave ≥ 500°F - SECTION 8.0
Page 1 of 2

EFPD= 60 CF(B10)= .96 B(RCS)= 1875 ppmB Tave*= 555 °F APSR= 29.5 %wd

Known stuck rod? ____ No X Yes Data: Date today Time now

Use the **critical reference condition** for all data.

Shutdown Margin (SDM)

-4.24 to -4.26

[12.48 + (-8.89) + -2.7 + 0 + (-5.41) + -.135 + .35 + 0 + .1602]x[-1]= (-4.14) %Δk/k

ρ(fuel) ρ(boron) ρ(tp) ρ(temp) R ρ(APSR) FRP ρ(anom) ρ(Pu-max) SDM

6.2 to 6.4

Where: -12.2 to -12.1

ρ(fuel) is Fuel Worth from Figure 2 based on EFPD

ρ(boron) is Boron Worth = -8.82 / ρ(BBOL) x 1.008 / CF(FBU) = -8.89 / ρ(boron) %Δk/k

Where:

ρ(BBOL) is Boron Worth at Beginning of Life from Figure 3 based on B(ROCB) (Critical curve)

1875 / B(RCS) x (.69) / CF(B10) .96 x (1 - .01) = 1280.8 / B(ROCB) ppmB

Where: .01 is the Boron Concentration Measurement Uncertainty

(1 - .01) is the Boron Concentration Measurement Correction Factor

CF(FBU) is Correction Factor for Fuel Burnup from Figure 4 based on EFPD (Critical curve)

ρ(tp) is Transient Poison Worth from START program for time of data

ρ(temp)* is Temperature Reactivity = ____ / α_T x ____ / ΔT = ____ / ρ(temp) %Δk/k

Where:

α_T is Temperature Coefficient from Figure 12 based on EFPD and B(ROCB)

ΔT = Tave - 532°F

R is Control Rod Worth from Figure 10 based on EFPD and stuck rod condition

ρ(APSR) is APSR Worth from Figure 11A based on EFPD and APSR position

FRP is Flux Redistribution Penalty from Table 1 of ROCB

* Per Technical Specification 1.1 (see Step 8.2), in Modes 1 and 2, the value of Tave for SDM calculations shall be 532°F. Therefore, zero shall be entered for ρ(temp).
In Mode 3 with RCS Tave > 532°F, zero should be entered for ρ(temp), for conservatism.
In Mode 3 with RCS Tave < 532°F, ρ(temp) shall be calculated based on α_T and ΔT.

ATTACHMENT 4: SHUTDOWN MARGIN (SDM) CALCULATION WITH Tave ≥ 500°F - SECTION 8.0
Page 2 of 2

ρ(anom) is Reactivity Worth of HFP Anomaly from the Reactor Operating Guidance
(For conservatism, a value of 0 may be used in place of a negative HFP anomaly for calculations of Shutdown Margin and Shutdown Value. See Step 4.2.8.)

ρ(Pu-max) is Maximum Excess Pu-239 Worth from Figure 20B based on EFPD

Calculated by Roperator Date today Time now

Checked by _____ Date _____

Facility: Davis-Besse **Task No:** 336-005-03-0300

Task Title: Determine Availability for Call-in (3 ROs)

K/A Reference: 2.1.5 (3.9) **Job Performance Measure No**: NEW

Examinee: _____

NRC Examiner: _____ **Date:** _____

Method of testing:

Simulated Performance ___ Actual Performance _X_

Classroom _X_ Simulator __ Plant ___

Read to the examinee:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

This JPM is not dependant on any specific simulator initial conditions since the task is administrative in nature.

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

Task Standard:

Determine working hour limits of NOP-LP-4011, FENOC Work Hour Control, will be exceeded for ROs Bill and Joe **AND NOT** exceeded for Sam.

Required Materials:

NOP-LP-4011, FENOC Work Hour Control
RO Work hour history

General References:

Initiating Cue:

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

Time Critical Task: No

Validation Time: 25 minutes

EXAMINER COPY

INITIAL CONDITIONS:

The Plant has been in Mode 1 for 100 days. Today is 6/3/13. The dayshift RO, scheduled to start at 0600, has called in sick. It is desired to replace the dayshift RO by assigning an RO to fill this vacancy. The computer system for determining fatigue rule is out of service. Three ROs are available to assume this vacancy, beginning at 0600 on 6/3/13. The available RO replacements have the listed work hour history.

INITIATION CUE:

As the Unit Supervisor, determine which one(s), if any of the available RO replacements are able to work the 12 hour dayshift on 6/3/13 without violating the 10 CFR 26 Work Hour Limits specified in NOP-LP-4011, FENOC Work Hour Control. Explain why or why not. Document your results on the sheet provided.

(Hand Candidate a copy of Working hour history and NOP-LP-4011, FENOC Work Hour Control)

CANDIDATE COPY

INITIAL CONDITIONS:

The Plant has been in Mode 1 for 100 days. Today is 6/3/13. The dayshift RO, scheduled to start at 0600, has called in sick. It is desired to replace the dayshift RO by assigning an RO to fill this vacancy. The computer system for determining fatigue rule is out of service. Three ROs are available to assume this vacancy, beginning at 0600 on 6/3/13. The available RO replacements have the listed work hour history.

INITIATION CUE:

As the Unit Supervisor, determine which one(s), if any of the available RO replacements are able to work the 12 hour dayshift on 6/3/13 without violating the 10 CFR 26 Work Hour Limits specified in NOP-LP-4011, FENOC Work Hour Control. Explain why or why not. Document your results on the sheet provided.

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: _____

---

1. PERFORMANCE STEP: Evaluate work hour history

   STANDARD: Compares work hour history against NOP-LP-4011, FENOC Work Hour Control requirements of section 4.2

   CUE: **None**

SAT UNSAT

---

2. PERFORMANCE STEP: Determines working hour limit will be exceeded for RO Bill, and documents on the sheet provided
   C

   STANDARD:
   1. Determines RO Bill may **NOT** be called in
   2. Determines that RO Bill will exceed 26 hours in 48 hours after working 3 hours on 6/3. (Turnover times are not considered in this determination)
   3. Documents the result in the space provided

   CUE: **None**

SAT UNSAT

---

3. PERFORMANCE STEP: Determines working hour limit will be exceeded for RO Joe, and documents on the sheet provided
   C

   STANDARD:
   1. Determines RO Joe may **NOT** be called in
   2. Determines that RO Joe will exceed 72 hours in 7 days
   3. Documents the result in the space provided

   CUE: **None**

SAT UNSAT

---

4. PERFORMANCE STEP: **C** Determines working hour limit will **NOT** be exceeded for RO Sam, and documents on the sheet provided

STANDARD:
1. Determines that RO Sam may be called in.
2. Determines that RO Sam meets all the call-in requirements
3. Documents the result in the space provided

CUE:

SAT UNSAT

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

END TIME

Verification of Completion

Job Performance Measure No. _____

Examinee's Name: _____

Examiner's Name: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: Satisfactory/Unsatisfactory

Examiner's signature and date: _____

Facility: Davis-Besse **Task No:** 332-004-02-0300

Task Title: SRO Review of Completed Boron Injection Flowpath Boric Acid Pump Test

K/A Reference: 2.2.13 (4.3) **Job Performance Measure No**: NEW

Examinee: _____

NRC Examiner: _____ **Date:** _____

Method of testing:

Simulated Performance ___ Actual Performance _X_

Classroom _X_ Simulator __ Plant ___

Read to the examinee:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

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

Task Standard:

Boric Acid Pump 2 is declared inoperable based on unacceptable Δ P and vibrations.

Required Materials:

Completed DB-SP-03451, Boron Injection Flowpath Boric Acid Pump 2 Test

General References:

NOP-WM-2003, Work Management Surveillance Process
Calculator

Initiating Cue:

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

.

Time Critical Task: No

Validation Time: 30 minutes

EXAMINER COPY

INITIAL CONDITIONS:

- The plant is in Mode 1 with all systems in normal alignment.
- The Operators have just completed the quarterly test of Boric Acid Pump 2 IAW DB-SP-03451, Boron Injection Flowpath Boric Acid Pump 2 Test.

INITIATION CUE:

You are to Review/Approve completed Surveillance DB-SP-03451, Boron Injection Flowpath Boric Acid Pump 2 Test to determine operability as defined by the acceptance criteria. Document the results of your review in the comments section of the Test Cover Sheet.

(Hand Candidate a completed copy of DB-SP-03451 with unacceptable incorrect ΔP and out of spec horizontal and axial vibrations)

CANDIDATE COPY

INITIAL CONDITIONS:

- The plant is in Mode 1 with all systems in normal alignment.
- The Operators have just completed the quarterly test of Boric Acid Pump 2 IAW DB-SP-03451, Boron Injection Flowpath Boric Acid Pump 2 Test.

INITIATION CUE:

You are to Review/Approve completed Surveillance DB-SP-03451, Boron Injection Flowpath Boric Acid Pump 2 Test to determine operability as defined by the acceptance criteria. Document the results of your review in the comments section of the Test Cover Sheet.

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: _____

1. PERFORMANCE STEP: Reviews DB-SP-03451, Boron Injection Flowpath Boric Acid Pump 2 Test.

   STANDARD: Reviews test for completeness and consults the Acceptance Criteria for acceptable performance.

   CUE: **None**

SAT UNSAT

2. PERFORMANCE STEP: MU347, Boric Acid Pump 2 Discharge Check, obtained full forward flow as evidenced by flow greater than or equal to 25 gpm as read on FI MU41.

   STANDARD: Reviews Attachment 1, Section 1 to verify greater than or equal to 25 gpm flow achieved and determines acceptance criteria is met.

   CUE: **None**

SAT UNSAT

3. PERFORMANCE STEP: MU346, Boric Acid Pump 1 Discharge Check, prevented reverse flow as evidenced by flow greater than or equal to 25 gpm as read on FI MU41.

   STANDARD: Reviews Attachment 1, Section 1 to verify greater than or equal to 25 gpm flow achieved and determines acceptance criteria is met.

   CUE: **None**

SAT UNSAT

4. PERFORMANCE STEP: Boric Acid Pump 2 upper motor bearing vertical vibration measurement is less than or equal to 0.684 inches/sec.

STANDARD: Compares Boric Acid Pump 2 actual upper motor vertical vibration recorded on attached Enclosure 1 of DB-MM-05003 to the Acceptable Range and determines acceptance Criteria is met.

COMMENT: Actual recorded value is 0.525 inches/sec.

CUE: **None**

SAT UNSAT

---

5. PERFORMANCE STEP: Boric Acid Pump 2 upper motor bearing horizontal vibration measurement is less than or equal to 0.330 inches/sec.

STANDARD: Compares Boric Acid Pump 2 actual upper motor horizontal vibration recorded on attached Enclosure 1 of DB-MM-05003 to the Acceptable Range and determines acceptance Criteria is met.

COMMENT: Actual recorded value is 0.225 inches/sec.

CUE: **None**

SAT UNSAT

---

6. PERFORMANCE STEP: **C** Boric Acid Pump 2 upper motor bearing axial vibration measurement is less than or equal to 0.391 inches/sec.

STANDARD: Compares Boric Acid Pump 2 actual upper motor axial vibration recorded on attached Enclosure 1 of DB-MM-05003 to the Acceptable Range and determines upper motor bearing axial vibration measurement is greater than the acceptable range.

COMMENT: Actual recorded value is 0.462 inches/sec.

CUE: **None**

SAT UNSAT

---

7. PERFORMANCE STEP: **C** Boric Acid Pump 2 differential pressure was within the quarterly surveillance test acceptance range of 81.69 to 96.61 psid at a flow rate of 25.0 to 25.5 gpm.

STANDARD: Compares Boric Acid Pump 2 differential pressure recorded on Attachment 1 to the Acceptable Range and determines differential pressure is less than the acceptable range.

COMMENT: Actual recorded value is 80.67 psid.

CUE: **None**

SAT UNSAT

8. PERFORMANCE STEP: **C** Document the results of the review in the comments section of the Test Cover Sheet.

STANDARD: Lists the following on the coversheet:

- Upper motor bearing axial vibration measurement does not meet acceptance criteria (greater than the acceptable range - Step 5.5)
- Differential pressure does not meet acceptance criteria (less than the acceptable range – Step 5.6)
- Boric Acid Pump is Inoperable due to any of the above criteria

Comment:

- Candidate may update Test Cover Sheet to identify FAILED test, UNACCEPTABLE Technical Specification Data and NO CREDIT.
- Candidate may specify Condition Report (s) required.

CUE: **None**

SAT UNSAT

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

END TIME

Verification of Completion

Job Performance Measure No. _____

Examinee's Name: _____

Examiner's Name: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: Satisfactory/Unsatisfactory

Examiner's signature and date: _____

ANSWER KEY

DAVIS-BESSE KEY SHUTDOWN DEFENSE IN DEPTH TURNOVER CHECKLIST

NOP-OP-1005-02 Rev. 09 **Date/Time:**_____ **Mode:** _____ **Protected DHR Train (s):** _____

Overall Defense In Depth/Plant Status			
Key Shutdown Defense In Depth Functions	**Description**	**# or True = 1 False = 0**	**Status**
Decay Heat Removal Monitored when fuel is in the core	1) Number of OTSGs available with RCS Filled (0 to 2) 2) Number of DHR trains available (0 to 2) 3) Forced "Feed and Bleed" is available (T/F) 4) Gravity "Feed and Bleed" is available (T/F) 5) Time to Boil ≥ 2 Hours (T/F) Min. requirements of NG-DB-00117 Attachment 1 met? (Yes/No) No = Maximum Defense in Depth Orange	1) 0 2) 2 3) 0 4) 0 5) 1 Total 3	≤ 1 Red 2 Orange 3 Yellow ≥ 4 Green YELLOW
Reactor Coolant Inventory Control Monitored when fuel is in the core	1) Number of HPI train flow paths available (0 to 2) 2) Number of MU train flow paths available (0 to 2) 3) BWST Gravity flow path avail. and RCS vented (T/F) 4) CWRT and Pump flow path available (T/F) 5) RCS Water level ≥ 80 in. (T/F) 6) Refueling Canal ≥ 23 ft. (T/F) Maximum Defense in Depth is Yellow when RCS Water level is below flange (except during plenum operations). per NG-DB-00117, Shutdown Defense in Depth Assessment. Min. requirements of NG-DB-00117 Attachment 1 met? (Yes/No) No = Maximum Defense in Depth Orange	1) 0 2) 2 3) 0 4) 0 5) 1 6) 0 Total 3	≤ 1 Red 2 Orange 3 Yellow ≥ 4 Green ORANGE

Facility: Davis-Besse **Task No:** 333-008-01-0300

Task Title: Perform Rad Liquid Release Admin Checks

K/A Reference: 2.3.6 (3.8) **Job Performance Measure No**: NEW

Examinee: _____

NRC Examiner: _____ **Date:** _____

Method of testing:

Simulated Performance ___ Actual Performance _X_

Classroom _X_ Simulator __ Plant ___

Read to the examinee:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

This JPM is not dependant on any specific simulator initial conditions since the task is administrative in nature.

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

Task Standard:

Complete Section 4.2, Miscellaneous Waste Monitor Tank (MWMT) Release Administrative Checks, of DB-OP-03011, Radioactive Liquid Batch Release.

Required Materials:

DB-OP-03001, Radioactive Liquid Batch Release, sections for MWMT Release, completed through step 4.2.6

General References:

Offsite Dose Calculation Manual (ODCM)

Initiating Cue:

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

.

Time Critical Task: No

Validation Time: 20 minutes

EXAMINER COPY

INITIAL CONDITIONS:

A Radioactive Liquid Batch Release permit is in progress for releasing the Miscellaneous Waste Monitor tank. Sampling and Analysis is complete. Chemistry has approved the Release and returned the permit to Operations. Section 4.2, Miscellaneous Waste Monitor Tank (MWMT) Release Administrative Checks, is in progress for approving the Release Valve Lineup. The current status of the surveillance requirements has been performed and it has just been determined computer point F201 and all inputs are non functional.

INITIATION CUE:

Perform section 4.2, Miscellaneous Waste Monitor Tank (MWMT) Release Administrative Checks

(Hand Candidate a copy of the in progress DB-OP-03011 for releasing the MWMT)

CANDIDATE COPY

INITIAL CONDITIONS:

A Radioactive Liquid Batch Release permit is in progress for releasing the Miscellaneous Waste Monitor tank. Sampling and Analysis is complete. Chemistry has approved the Release and returned the permit to Operations. Section 4.2, Miscellaneous Waste Monitor Tank (MWMT) Release Administrative Checks, is in progress for approving the Release Valve Lineup. The current status of the surveillance requirements has been performed and it has just been determined computer point F201 and all inputs are non functional.

INITIATION CUE:

Perform section 4.2, Miscellaneous Waste Monitor Tank (MWMT) Release Administrative Checks

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: _____

1. PERFORMANCE STEP: Complete step 4.2.7. Record ODCM action statements on Step 5.a. and sign item 4.i. **C**

   STANDARD: Refers to the Off-site Dose Calculation Manual, Table 2-1. Documents Instrument 2.b. Action B, required on Attachment 1, Radioactive Liquid Batch Release Permit, step 5.a. Signs item 4.i. on attachment 5.

   CUE: **None**

   SAT UNSAT

2. PERFORMANCE STEP: Refer to Attachment 1, step 11.a and record step 4.2.8 as N/A

   STANDARD: Refers to Attachment 1, step 11.a and determines 4.2.8 is N/A

   CUE: **None**

   SAT UNSAT

3. PERFORMANCE STEP: Complete step 4.2.9. Set the high alarm for computer point F671 at 90 gpm **C**

   STANDARD: Assigns an Operator to set the high alarm setpoint to 90 gpm

   CUE: **The high alarm for computer point F671 has been set to 90 gpm.**

   SAT UNSAT

4. PERFORMANCE STEP: Record step 4.2.10 as N/A due to F201 being non functional

   STANDARD: Mark step 4.2.10 as N/A

   CUE: **None**

   SAT UNSAT

5. PERFORMANCE STEP: Record step 4.2.11 as N/A due to RE1878A and 1878B being functional

   STANDARD: Refer to steps 4.2.2, 4.2.4, 4.2.5, 4.2.6 and step 4.b. on Attachment 1 and determine RE1878A and 1878B are functional. Record step 4.2.11 as N/A

   CUE: **None**

SAT UNSAT

6. PERFORMANCE STEP: Complete step 4.2.12. Perform Attachment 20
   C

   STANDARD: Assigns Operator to perform Attachment 20.

   CUE: **Attachment 20 is complete**

SAT UNSAT

7. PERFORMANCE STEP: Complete step 4.2.13. Perform Attachment 24, EAL Release Limit Worksheet
   C

   STANDARD: Refer to step 10.c. on Attachment 1, Radioactive Liquid Batch Release Permit
   - Record RE1770A and RE1770B as N/A
   - Record 2.8E5 in high setpoint blocks for RE1878A and RE1878B
   - Record 5.6E5 in RU1 Limit blocks for RE1878A and RE1878B
   - Record 8.0E6 in RA1 Limit blocks for RE1878A and RE1878B

   Request Independent Verification

   CUE: **If necessary, direct candidate to complete Attachment 24**

SAT UNSAT

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

END TIME

Verification of Completion

Job Performance Measure No. _____

Examinee's Name: _____

Examiner's Name: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: Satisfactory/Unsatisfactory

Examiner's signature and date: _____

ANSWER KEY

ATTACHMENT 1: RADIOACTIVE LIQUID BATCH RELEASE PERMIT

5.

a. Remarks: ODCM ACTION For F201 NON-FUNCTIONAL: perform ACTION B For INSTRUMENT 2.b. Estimate Dilution Flow at least once per 4 hours during release

b. Circle flow totalizer used:

FQI1887A FQI1700A

FQI1887B FQI1700B

6. RELEASE STARTED _____
date time level volume

7. RELEASE STOPPED _____
date time level volume

8.a RELEASE TIME _____ minutes b. volume _____ gallons

9. Available dilution flowrate information obtained

a. Available dilution flowrate _____ GPM

b. From _____ _____
name date/time

c. Low Dilution Flowrate Setpoint _____ GPM

d. Dilution flowrate established _____ GPM

e. Total Station Effluent Volume During Release _____
Gallons

ANSWER KEY

~~171~~

ATTACHMENT 24: EAL RELEASE LIMIT WORKSHEET

This worksheet provides the setpoints that are used in RA-EP-01500, Emergency Classification, EALs RU1 and RA1. This sheet is maintained in the Control Room for the duration of the release.

Release # XX-XXX (Monitors not used for the release may be marked N/A)

RE1770A

			IV of setpoints and calculations:
HIGH SETPOINT (from Item 10.c)	N/A	CPM	N/A
RU1 LIMIT (HIGH SETPOINT X 2)	|	CPM	|
RA1 LIMIT (HIGH SETPOINT X 200)*	N/A	CPM	N/A

RE1770B

HIGH SETPOINT (from Item 10.c)	N/A	CPM	N/A
RU1 LIMIT (HIGH SETPOINT X 2)	|	CPM	|
RA1 LIMIT (HIGH SETPOINT X 200)*	N/A	CPM	N/A

RE1878A

HIGH SETPOINT (from Item 10.c)	2.80 E5	CPM	
RU1 LIMIT (HIGH SETPOINT X 2)	5.60 E5	CPM	
RA1 LIMIT (HIGH SETPOINT X 200)*	8.0 E6	CPM	

RE1878B

HIGH SETPOINT (from Item 10.c)	2.80 E5	CPM	
RU1 LIMIT (HIGH SETPOINT X 2)	5.60 E5	CPM	
RA1 LIMIT (HIGH SETPOINT X 200)*	8.0 E6	CPM	

Completed by _____ Date XX/XX/XX

Independent Verification by _____ Date XX/XX/XX

* Not to exceed 8.0E6

Facility: Davis-Besse **Task No:** 334-005-05-0300

Task Title: Make Protective Action Recommendations

K/A Reference: 2.4.44 (4.4) **Job Performance Measure No**: 150

Examinee: _____

NRC Examiner: _____ **Date:** _____

Method of testing:

Simulated Performance ___ Actual Performance _X_

Classroom ___ Simulator _X_ Plant ___

Read to the examinee:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

This JPM is not dependant on any specific simulator initial conditions since the task is administrative in nature.

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

Task Standard:

Determine protective action recommendation to evacuate Subareas 1,2,6 and 12 and pick up the 4 way ringdown phone to begin notification

Required Materials:

- RA-EP-01900, General Emergency
- RA-EP-02110, Emergency Notification
- RA-EP-02245, Protective Action Guidelines
- E-Plan Implementation Forms envelope

General References:

Initiating Cue:

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

.

Time Critical Task: Yes

Validation Time: 15 minutes

EXAMINER COPY

INITIAL CONDITIONS:

A large break LOCA is in progress with no indications of a core melt sequence.

Station Isolation is not declared

A Containment-to-Annulus leak has resulted in a release from the Station Vent.

As the Emergency Director you have just declared a General Emergency per EAL RG1.

The Emergency Response Organization is being notified of the General Emergency.

Wind direction is from 300°.

Assume all independent verifications completed satisfactory

INITIATION CUE:

You are the Emergency Director.

The following off-site dose assessment data is provided.

TEDE RATE		TOTAL TEDE RELEASE
3.0 Rem/hr at 0.75 Miles	X 2 hour estimated release duration	6.0 Rem at 0.75 Miles
0.6 Rem/hr at 2 Miles		1.2 Rem at 2 Miles
0.2 Rem/hr at 5 Miles		0.4 Rem at 5 Miles
0.075 Rem/hr at 10 Miles		0.15 Rem at 10 Miles

Determine the off-site protective action recommendations in accordance with RA-EP-01900, General Emergency, starting at step 6.1.1.h, using the TEDE values only and make all required offsite notifications.

This is a time critical JPM

CANDIDATE COPY

INITIAL CONDITIONS:

A large break LOCA is in progress with no indications of a core melt sequence.

Station Isolation is not declared

A Containment-to-Annulus leak has resulted in a release from the Station Vent.

As the Emergency Director you have just declared a General Emergency per EAL RG1.

The Emergency Response Organization is being notified of the General Emergency.

Wind direction is from 300°.

Assume all independent verifications completed satisfactory

INITIATION CUE:

You are the Emergency Director.

The following off-site dose assessment data is provided.

TEDE RATE		TOTAL TEDE RELEASE
3.0 Rem/hr at 0.75 Miles	X 2 hour estimated release duration	6.0 Rem at 0.75 Miles
0.6 Rem/hr at 2 Miles		1.2 Rem at 2 Miles
0.2 Rem/hr at 5 Miles		0.4 Rem at 5 Miles
0.075 Rem/hr at 10 Miles		0.15 Rem at 10 Miles

Determine the off-site protective action recommendations in accordance with RA-EP-01900, General Emergency, starting at step 6.1.1.h, using the TEDE values only and make all required offsite notifications.

This is a time critical JPM

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: _____

1. PERFORMANCE STEP: Refer to RA-EP-01900, General Emergency

   STANDARD: Refer to RA-EP-01900, General Emergency step 6.1.1.h and determine requirement to refer to RA-EP-02245, Protective Action Guidelines.

   CUE: **None**

SAT UNSAT

2. PERFORMANCE STEP: Refer to RA-EP-02245, Protective Action Guidelines and refer to Attachment 1

   STANDARD: Obtains RA-EP-02245 and refers to Attachment 1

   CUE: **None**

SAT UNSAT

3. PERFORMANCE STEP: Determine PAR using page 1 of Attachment 1
   C

   STANDARD: Determines a General Emergency IS declared
   Determines Core Melt Sequence NOT in progress
   Determines Station Isolation NOT in progress
   Determines a release IS in progress
   Determines the release is NOT terminable by operator action
   Determines TEDE projected doses are < 1 Rem at 5 miles

   CUE: **None**

SAT UNSAT

4. PERFORMANCE STEP: Determine PAR using page 2 of Attachment 1
C

STANDARD: Goes to Column A on Page 2 of Attachment 1.

Using the unknown wind direction, determines the affected subareas for 2 mile radius and 5 miles down wind are 1, 2, 6 and 12 and are recommended to be evacuated.

CUE: **None**

SAT UNSAT

5. PERFORMANCE STEP: Make notifications to offsite agencies
C

STANDARD: Refers to RA-EP-02110, Emergency Notification

CUE: **None**

SAT UNSAT

6. PERFORMANCE STEP: Complete an Initial Notification Form (DBEP-010) and a Davis-Besse Notification Cover Sheet (DBEP-012).
C

STANDARD: Completes critical items 1 through 6 on the Initial Notification form and the header information on the Cover Sheet then signs the Cover Sheet

CUE: **Provide copy of Notification Form and Cover Sheet when located.**

If asked, independent check of the data entered complete

SAT UNSAT

7. PERFORMANCE STEP: Make Initial Notification using the 4-Way Ring-Down Circuit
C

STANDARD: Picks up the 4-Way Ring-Down phone in the Control Room.

COMMENTS: Notification must be made within 15 minutes of the event declaration time; the clock stops and the JPM is complete when the 4-Way Ring-Down phone is picked up.

CUE: **None**

SAT UNSAT

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

END TIME

Verification of Completion

Job Performance Measure No. _____

Examinee's Name: _____

Examiner's Name: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: Satisfactory/Unsatisfactory

Examiner's signature and date: _____

DAVIS-BESSE EMERGENCY NOTIFICATION COVER SHEET

DBEP-012-07

☒ **INITIAL NOTIFICATION** **USE FOR:** ▪ **INITIAL CLASSIFICATIONS,** ▪ **CHANGES IN CLASSIFICATION,** ▪ **CHANGES IN PROTECTIVE ACTION RECOMMENDATIONS.** ☐ **PERIODIC UPDATE** **USE ONLY FOR UPDATING STATUS OF CURRENT CLASSIFICATION. DO NOT USE FOR CHANGING CLASSIFICATIONS OR CHANGING PROTECTIVE ACTION RECOMMENDATIONS.**	☐ **ACTUAL EMERGENCY** **(Check Actual Emergency only if a real plant emergency exists)** ☒ **DRILL**
Form completed by: _____	**Verification of form accuracy performed by:** _____

COMMENTS:

☐ Continued on back

1. Emergency Director verification of information and approval to release information: _____ .
   ED Initials
2. Initiate the 4-Way Ringdown.
3. As parties answer, identify yourself and your facility.
4. Obtain and fill in information below:

	EOC	LAW ENFORCEMENT	TIME CONTACTED	4-WAY RINGDOWN USED? YES	NO	TIME OF CALLBACK (IF 4-WAY NOT USED)	INDIVIDUAL CALLING BACK (IF 4-WAY NOT USED)
OTTAWA COUNTY	☐	☐	____	☐	☐	____	
LUCAS COUNTY	☐	☐	____	☐	☐	____	
STATE OF OHIO	☐	☐	____	☐	☐	____	

5. Transmit information on the attached Initial Notification Form / Periodic Update Form.

NOTE: This coversheet should NOT be FAXED offsite.

- **Initial Notification Form: Read information over the phone, and then fax the form to Ottawa Co, Lucas Co, and the State of Ohio.**
- **Periodic Update Form: Fax the form to Ottawa Co, Lucas Co, and the State of Ohio, and then verify the information over the phone.**

☐ Control Room
☐ Emergency Operations Facility

Signature of Communicator

FENOC NUCLEAR POWER PLANT INITIAL NOTIFICATION FORM
Davis Besse
DBEP-010-10

USE FOR:
- **INITIAL CLASSIFICATIONS,**
- **CHANGES IN CLASSIFICATIONS,**
- **CHANGES IN PROTECTIVE ACTION RECOMMENDATIONS.**
- **EVENT TERMINATION**

STATE / COUNTY USE ONLY
DATE: _____ TIME: _____
MESSAGE NO: _____

1. This is the: Davis-Besse Nuclear Power Station

2. This is: ☐ An Actual Emergency ☒ A Drill

3. ☒ a. A(n) ☒ GENERAL EMERGENCY ☐ SITE AREA EMERGENCY ☐ ALERT ☐ UNUSUAL EVENT
was declared at: **NOW** (TIME) on **TODAY** (DATE) based on EAL: **RG1**

☐ b. The Emergency situation has been terminated at: _____ (TIME) on _____ (DATE)

☐ c. The Protective Action Recommendation is being changed at: _____ (TIME) on _____ (DATE)

4. Brief non-technical description of event: Offsite dose resulting from an actual or IMMINENT release of gaseous radioactivity greater than 1000 mRem TEDE or 5000 mRem Child Thyroid CDE for the actual or projected duration of the release using actual meteorology.

5. The radiological conditions are:

☒ a. A non-routine release of radioactive material, as a result of this event, is in progress

☐ b. The release of radioactive material associated with this event has been terminated.

☐ c. NO Radiological Release in progress as a result of this event.

6. Utility Protective Action Recommendations (PAR's):

☒ a. Evacuation:

(check applicable subareas)

☒ 1 ☒ 2 ☐ 3 ☐ 4 ☐ 5 ☒ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 ☐ 11 ☒ 12

AND that potassium iodide (KI) be administered to the general public in accordance with State procedures. The general public in unaffected areas should be advised to go indoors and monitor EAS broadcasts.

☐ b. Sheltering:

(check applicable subareas)

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 11

AND that potassium iodide (KI) be administered to the general public in accordance with State procedures. The general public in unaffected areas should be advised to go indoors and monitor EAS broadcasts.

☐ c. None

For Utility Use Only

Approved: _____

ANSWER KEY

FENOC NUCLEAR POWER PLANT INITIAL NOTIFICATION FORM
Davis Besse
DBEP-010-10

USE FOR:
- **INITIAL CLASSIFICATIONS,**
- **CHANGES IN CLASSIFICATIONS,**
- **CHANGES IN PROTECTIVE ACTION RECOMMENDATIONS.**
- **EVENT TERMINATION**

STATE / COUNTY USE ONLY
DATE: _____ TIME: _____
MESSAGE NO: _____

1. This is the: Davis-Besse Nuclear Power Station C

2. This is: ☐ An Actual Emergency ☒ A Drill

3. ☒ a. A(n) C ☒ GENERAL EMERGENCY ☐ SITE AREA EMERGENCY ☐ ALERT ☐ UNUSUAL EVENT
was declared at: **NOW** C (TIME) on **TODAY** (DATE) based on EAL: **RG1** C

☐ b. The Emergency situation has been terminated at: _____ (TIME) on _____ (DATE)

☐ c. The Protective Action Recommendation is being changed at: _____ (TIME) on _____ (DATE)

4. Brief non-technical description of event: Offsite dose resulting from an actual or IMMINENT release of gaseous radioactivity greater than 1000 mRem TEDE or 5000 mRem Child Thyroid CDE for the actual or projected duration of the release using actual meteorology.

5. The radiological conditions are:

C ☒ a. A non-routine release of radioactive material, as a result of this event, is in progress

☐ b. The release of radioactive material associated with this event has been terminated.

☐ c. NO Radiological Release in progress as a result of this event.

6. Utility Protective Action Recommendations (PAR's):

C ☒ a. Evacuation:

(check applicable subareas)

☒ 1 ☒ 2 ☐ 3 ☐ 4 ☐ 5 ☒ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 ☐ 11 ☒ 12
C C C C

AND that potassium iodide (KI) be administered to the general public in accordance with State procedures. The general public in unaffected areas should be advised to go indoors and monitor EAS broadcasts.

☐ b. Sheltering:

(check applicable subareas)

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 11

AND that potassium iodide (KI) be administered to the general public in accordance with State procedures. The general public in unaffected areas should be advised to go indoors and monitor EAS broadcasts.

☐ c. None

For Utility Use Only

Approved: _____

ANSWER KEY

DAVIS-BESSE EMERGENCY NOTIFICATION COVER SHEET

DBEP-012-07

☒ **INITIAL NOTIFICATION** USE FOR: ▪ INITIAL CLASSIFICATIONS, ▪ CHANGES IN CLASSIFICATION, ▪ CHANGES IN PROTECTIVE ACTION RECOMMENDATIONS. ☐ **PERIODIC UPDATE** USE ONLY FOR UPDATING STATUS OF CURRENT CLASSIFICATION. DO NOT USE FOR CHANGING CLASSIFICATIONS OR CHANGING PROTECTIVE ACTION RECOMMENDATIONS.	☐ **ACTUAL EMERGENCY** **(Check Actual Emergency only if a real plant emergency exists)** ☒ **DRILL**
Form completed by: _____	Verification of form accuracy performed by: _____

COMMENTS:

☐ Continued on back

1. Emergency Director verification of information and approval to release information: _____ .
   ED Initials
2. Initiate the 4-Way Ringdown.
3. As parties answer, identify yourself and your facility.
4. Obtain and fill in information below:

	EOC	LAW ENFORCEMENT	TIME CONTACTED	4-WAY RINGDOWN USED? YES	NO	TIME OF CALLBACK (IF 4-WAY NOT USED)	INDIVIDUAL CALLING BACK (IF 4-WAY NOT USED)
OTTAWA COUNTY	☐	☐	____	☐	☐	____	
LUCAS COUNTY	☐	☐	____	☐	☐	____	
STATE OF OHIO	☐	☐	____	☐	☐	____	

5. Transmit information on the attached Initial Notification Form / Periodic Update Form.

NOTE: This coversheet should NOT be FAXED offsite.

- **Initial Notification Form: Read information over the phone, and then fax the form to Ottawa Co, Lucas Co, and the State of Ohio.**
- **Periodic Update Form: Fax the form to Ottawa Co, Lucas Co, and the State of Ohio, and then verify the information over the phone.**

☐ Control Room
☐ Emergency Operations Facility

_____
Signature of Communicator

Facility: Davis-Besse **Task No:** 004-013-01-0100

Task Title: Initiate Deboration Using the Deboration Demineralizers

K/A Reference: (004) A4.07 3.9/3.7 **Job Performance Measure No**: NEW

Examinee: _____

NRC Examiner: _____ **Date:** _____

Method of testing:

Simulated Performance ___ Actual Performance _X_

Classroom ___ Simulator _X_ Plant ___

Read to the examinee:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

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

Task Standard:

Initiate Deboration Using the Deboration Demineralizers and isolate letdown when MU 40 fails closed.

Required Materials:

DB-OP-06001, Rev. 18, Section 3.5 steps 3.5.1 and 3.5.2 marked N/A
DB-OP-02002, Rev. 8 page 11 for Panel 2 item 2-2-A.

General References: None

Initiating Cue:

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

Time Critical Task: No **Alternate Path:** Yes

Validation Time: 20 minutes

SIMULATOR INSTRUCTIONS

TASK DESCRIPTION:

Initiate Deboration Using the Deboration Demineralizers

INITIAL CONDITION:

Any at power IC

ADDITIONAL SETUP/DEVIATION FROM INITIAL CONDITION:

Verify the Clean Liquid Radwaste System is lined up for deboration using the Deborating Demineralizer

After each JPM reset the batch size on the Batch Controller to 150 gallons
- Depress BATCH SET
- Depress 150
- Depress ENTER
- Depress DISPLAY (lower)
- Depress BATCH/4

MALFUNCTIONS/FAILURE TO INSERT:

De-energize the Boronometer Recorder (OOS)

EXAMINER COPY

INITIAL CONDITIONS:

The core is near the end of life

RCS boron concentration is approximately 15 ppmB

The Boronometer is OOS

This is **NOT** the first time the deborating demineralizers have been placed in service following resin replacement.

INITIATING CUES:

Reactor Engineering has determined the need to process 2000 gallons of water through the Deborating Demineralizers.

The Unit Supervisor directs you to deborate the RCS using the deborating demineralizers in accordance with DB-OP-06001, Section 3.5 beginning with step 3.5.3

(Provide examinee a copy of section 3.5 DB-OP-06001)

CANDIDATE COPY

INITIAL CONDITIONS:

The core is near the end of life

RCS boron concentration is approximately 15 ppmB

The Boronometer is OOS

This is **NOT** the first time the deborating demineralizers have been placed in service following resin replacement.

INITIATING CUES:

Reactor Engineering has determined the need to process 2000 gallons of water through the Deborating Demineralizers.

The Unit Supervisor directs you to deborate the RCS using the deborating demineralizers in accordance with DB-OP-06001, Section 3.5 beginning with step 3.5.3

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: _____

1. PERFORMANCE STEP: Check ICS Feed and Bleed permissive is enabled

   STANDARD: Verifies ICS IL-MU11 amber light LIT.

   CUE: **None**

   _____
   SAT UNSAT

---

2. PERFORMANCE STEP: Verify Boric Acid Pumps and Concentrate Transfer Pump NOT in service

   STANDARD: Verifies HIS MU50A green light lit, red light not lit
   Verifies HIS MU50B green light lit, red light not lit
   Communicates with an Equipment Operator to verify Concentrate Transfer Pump NOT in service

   CUE: **Equipment Operator reports the Concentrates Transfer Pump is NOT in service**

   _____
   SAT UNSAT

---

3. PERFORMANCE STEP: Verify WC 3526, BOOSTER SYSTEM BYPASS, is closed using HIS 3526

   STANDARD: Verifies WC 3526, BOOSTER SYSTEM BYPASS, green light lit, red light not lit

   CUE: **None**

   _____
   SAT UNSAT

---

4. PERFORMANCE STEP: Determine MU 39, BATCH FLOW CONTROL VALVE, position

   STANDARD: Depresses and releases:
   a. DISPLAY (lower)
   b. VALVE (CE)
   c. Verifies 0

   COMMENT: MU 39 position should indicate 0; Step 3.5.7 may be N/A'd

   CUE: **None**

   _____
   SAT UNSAT

---

5. PERFORMANCE STEP: Verify MU 23, FLOW CONTROL, is closed using HC MU 23

   STANDARD: Verifies HC MU 23 at zero demand

   CUE: **None**

   _____
   SAT UNSAT

---

6. PERFORMANCE STEP: Verify the Makeup Tank level is above the low level alarm point

   STANDARD: Verifies LR MU16 indicates >55 inches

   CUE: **None**

   _____
   SAT UNSAT

---

7. PERFORMANCE STEP: Verifies RCS flow greater than or equal to 2800 gpm

   STANDARD: Verifies RCS flow greater than or equal to 2800 gpm

   Comment: May also verify flow on RCS total flow indicator or any RCP running

   CUE: **(If asked) The Shift manager has determined that Boron concentration trending is not required – Step 3.5.11 N/A**

   _____
   SAT UNSAT

---

8. PERFORMANCE STEP: Record volume of water

   STANDARD: Records 2000 gallons on step 3.5.12, per initial conditions

   CUE: **(If asked) independent verification sat**

   _____
   SAT UNSAT

---

9. PERFORMANCE STEP: Set the desired batch size
   .....C.....

   STANDARD: Depress and release:
   a. BATCH SET
   b. # keys equating to batch size, in gallons (2000)
   c. ENTER
   d. DISPLAY (lower)
   e. BATCH 4
   f. Verifies 2000 gallons or repeats steps

   CUE: **(If asked) Sign as independent verification sat**

   _____
   SAT UNSAT

---

10. PERFORMANCE STEP: Reset the indicated total
.....C.....

STANDARD: Depresses and releases
a. DISPLAY (lower)
b. TOTAL 7
c. TOTAL RESET 6
d. Verifies reading ZERO or repeats steps

CUE: **None**

SAT UNSAT

11. PERFORMANCE STEP: Display FLOW RATE in the upper display
.....C.....

STANDARD: Depresses and releases:
a. DISPLAY (upper)
b. RATE 8

CUE: **None**

SAT UNSAT

12. PERFORMANCE STEP: Notify the Unit Supervisor that deboration through the deborating demineralizer is about to begin

STANDARD: Communicates with the Unit Supervisor

CUE: **Repeat back (or acknowledge) report and/or provide approval, if necessary**

SAT UNSAT

13. PERFORMANCE STEP: Enable the Batch Controller
.....C.....

STANDARD: Depresses RUN on the Batch Controller

CUE: **None**

SAT UNSAT

14. PERFORMANCE STEP: Open MU 40, BATCH ISO
.....C.....

STANDARD: Depress OPEN on HIS40. Verifies red light lit, green light not lit .

CUE: **None**

SAT UNSAT

15. PERFORMANCE STEP: Open WC 3526, BOOSTER SYSTEM BYPASS, using HIS 3526
.....C.....

STANDARD: Depresses open on WC 3526, BOOSTER SYSTEM BYPASS, verifies red light lit, green light not lit.

CUE: **None**

SAT UNSAT

16. PERFORMANCE STEP: Place MU 11 in the CLN WST position
.....C.....

STANDARD: Depresses CLN WST pushbutton on HISMU 11. Verifies indicates CLN WST light is lit.

CUE: **None**

SAT UNSAT

17. PERFORMANCE STEP: Monitor Letdown pressure

STANDARD: Calls up computer point P719 on the PPC. Verifies ≤ 150 psig

CUE: **None**

SAT UNSAT

NOTE:
Alternate Path Starts here. 2 minutes after MU-11 is placed to CLN WST position, MU 40 will FAIL closed and MU 11 will FAIL as is. This will cause pressure in the letdown line to rise and annunciator 2-2-A, Letdown Press Hi will alarm. It may take several minutes before the alarm actuates since it is being generated by the computer and the computer scan rate is 30 seconds.

18. PERFORMANCE STEP: Reference Alarm Response Procedure (ARP) for annunciator 2-2-A Letdown Press Hi.

STANDARD: Refers to ARP for annunciator 2-2-A Letdown Press Hi.

CUE: **If necessary, roleplay the Unit Supervisor and direct the candidate to respond to the alarm.**

Comment: Candidate may attempt to re-open MU 40 and/or reposition MU 11

SAT UNSAT

20. PERFORMANCE STEP: Verify MU 4, PRESSURE REDUCING VALVE, is closed.
.....C.....

STANDARD: Depresses close on MU 4 and verifies green light lit, red light not lit

CUE: **None**

_____
SAT UNSAT

---

21. PERFORMANCE STEP: Verify MU 6, LETDOWN FLOW CONTROL VALVE, is closed.
.....C.....

STANDARD: Depresses close on MU 6 and verifies green light lit, red light not lit

CUE: **None**

_____
SAT UNSAT

---

22. PERFORMANCE STEP: Monitor Letdown pressure

STANDARD: Calls up computer point P719 on the PPC. Verifies reducing to ≤ 150 psig

CUE: **None**

_____
SAT UNSAT

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

_____
END TIME

Verification of Completion

Job Performance Measure No. _____

Examinee's Name: _____

Examiner's Name: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: Satisfactory/Unsatisfactory

Examiner's signature and date: _____

Facility: Davis-Besse **Task No:** 013-020-04-0100

Task Title: De-energize SFAS RCS Pressure transmitter

K/A Reference: (013) K2.01 3.6/3.8 **Job Performance Measure No**: NEW

Examinee: _____

NRC Examiner: _____ **Date:** _____

Method of testing:

Simulated Performance ___ Actual Performance _X_

Classroom ___ Simulator _X_ Plant ___

Read to the examinee:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

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

Task Standard:

De-energize SFAS Channel 4 RCS Pressure Transmitter

Required Materials:

DB-OP-06405 Rev. 13 Section 4.9 (step 4.9.1 and 4.9.2 completed) and Attachment 3

General References: None

Initiating Cue:

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

Time Critical Task: No **Alternate Path:** No

Validation Time: 20 minutes

SIMULATOR INSTRUCTIONS

TASK DESCRIPTION:

De-energize SFAS Channel 4 RCS Pressure Transmitter

INITIAL CONDITION:

Mode 1

ADDITIONAL SETUP/DEVIATION FROM INITIAL CONDITION:

None

MALFUNCTIONS/FAILURE TO INSERT:

None

EXAMINER COPY

INITIAL CONDITIONS:

The plant is in Mode 1

The Shift Manager has declared PTRC2A3, SFAS Channel 4 RCS pressure transmitter, inoperable.

INITIATING CUES:

The Unit Supervisor directs you to de-energize PTRC2A3 in accordance with section 4.9 of DB-OP-06405, Safety Features Actuation System procedure.

(Provide examinee a copy of section 4.9 (step 4.9.1 and 4.9.2 completed) and attachment 3 of DB-OP-06405)

CANDIDATE COPY

INITIAL CONDITIONS:

The plant is in Mode 1

The Shift Manager has declared PTRC2A3, SFAS Channel 4 RCS pressure transmitter, inoperable.

INITIATING CUES:

The Unit Supervisor directs you to de-energize PTRC2A3 in accordance with section 4.9 of DB-OP-06405, Safety Features Actuation System procedure.

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: Obtain the door and Test Trip Bypass Switch (TTBS) keys

   STANDARD: From the SM key cabinet, obtains SFAS Channel 4 door key (Key 28) and TTBS key (Key 24).

   CUE: **None**

   SAT UNSAT

2. PERFORMANCE STEP: Determine which fuse to pull to de-energize SFAS Channel 4 RCS Pressure Transmitter

   STANDARD: Uses Attachment 3 to determine fuse PS-02 is the correct fuse

   CUE: **None**

   SAT UNSAT

3. PERFORMANCE STEP: Verify RC PRESSURE LO LO TRIP and RC PRESSURE LO TRIP Bistables are NOT tripped in the other three SFAS channels

   STANDARD: Verifies Red Lights NOT LIT on SFAS CH1 BA104, BA106, CH2 BA204 BA206, CH3 BA304, BA306.

   CUE: **None**

   SAT UNSAT

4. PERFORMANCE STEP: Open Doors to SFAS CH4
   .....C.....

   STANDARD: Inserts key and rotates, then opens the doors.

   CUE: **(if asked) The Shift Manager is referring to Tech Specs**

   SAT UNSAT

5. PERFORMANCE STEP: Place the TTBS to the REACTOR COOLANT PRESSURE position.
.....C.....

STANDARD: Inserts key and rotates TTBS to REACTOR COOLANT PRESSURE position

COMMENT: This step causes a portion of SFAS to be inoperable.

CUE: **(if asked) The Shift Manager is referring to Tech Specs**

NOTE: Expected annunciator alarm will be heard from the CTRM.

_____
SAT UNSAT

---

6. PERFORMANCE STEP: Remove fuse PS-02
.....C.....

STANDARD: Rotates fuse holder CCW and pulls to remove

COMMENT: Verification that the correct bistables are tripped will occur in steps 10 & 11 of the JPM

CUE: **The Shift Manager is referring to Tech Specs**

(If asked) Shift Manager directs you to N/A Steps 4.9.10 and 4.9.11

_____
SAT UNSAT

---

7. PERFORMANCE STEP: Return the TEST TRIP BYPASS SWITCH to OPERATE
.....C.....

STANDARD: Rotates TTBS to OPERATE
Verifies SFAS CH1, 2, & 3 ½ trips on LO RCS Pressure

CUE: **None**

_____
SAT UNSAT

---

8. PERFORMANCE STEP: Verify BA 406, RC PRESSURE LO LO TRIP Bistable tripped

STANDARD: Verifies BA 406 RC PRESSURE LO LO Bistable Red TRIP light ON

CUE: **None**

_____
SAT UNSAT

---

9. PERFORMANCE STEP: Verify RC LO PRESSURE TRIP Bistable tripped

   STANDARD: Verifies BA 404 RC LO PRESSURE Bistable Red TRIP light ON

   CUE: **None**

_____
SAT UNSAT

10. PERFORMANCE STEP: Close and lock SFAS cabinet doors

    STANDARD: Closes and locks

    CUE: **None**

_____
SAT UNSAT

11. PERFORMANCE STEP: Return SFAS cabinet door and TTBS keys

    STANDARD: Returns keys to key cabinet

    CUE: **None**

_____
SAT UNSAT

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

_____
END TIME

Verification of Completion

Job Performance Measure No. _____

Examinee's Name: _____

Examiner's Name: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: Satisfactory/Unsatisfactory

Examiner's signature and date: _____

Facility: Davis-Besse **Task No:** 000-047-05-0100

Task Title: Perform HPI Flow Balancing

K/A Reference: (006) A4.02 4.0/3.8 **Job Performance Measure No**: NEW

Examinee: _____

NRC Examiner: _____ **Date:** _____

Method of testing:

Simulated Performance ___ Actual Performance _X_

Classroom ___ Simulator _X_ Plant ___

Read to the examinee:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

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

Task Standard:

Balance HPI flow with 1 HPI Pump Failed

Required Materials:

Attachment 8, Attachment 11 and Figure 3 from DB-OP-02000, EOP, Rev. 26,

General References: None

Initiating Cue:

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

Time Critical Task: Yes (10 Minutes – Terminates when Operator has throttled high flow line until either low flow line is acceptable or high flow line reaches lower limit of acceptable region.)

Alternate Path: Yes

Validation Time: 10 minutes

SIMULATOR INSTRUCTIONS

TASK DESCRIPTION:

Balance HPI flow with 1 HPI Pump Failed

INITIAL CONDITION:

LOCA with Loss of SCM. HPI 1 and MUP 1 are off. RCS Pressure is below 1480 psig

Section 5 of DB-OP-02000 complete up to step 5.3 which is in progress directing performance of ATTACHMENT 8: PLACE HPI/LPI/MU IN SERVICE of DB-OP-02000.

Leave frozen at end of setup until instructor directs that the simulator is unfrozen

ADDITIONAL SETUP/DEVIATION FROM INITIAL CONDITION:

None

MALFUNCTIONS/FAILURE TO INSERT:

Fail open HPI Pump 1 breaker (**IMF BFP1C**)
Insert small break LOCA on the 2-2 HPI discharge line (**IMF BFLB 0.25**)

EXAMINER COPY

INITIAL CONDITIONS:

The reactor has tripped on low pressure due to a small break LOCA

Section 5 of DB-OP-02000 complete up to step 5.3 which is in progress directing performance of ATTACHMENT 8: PLACE HPI/LPI/MU IN SERVICE of DB-OP-02000.

INITIATING CUES:

The Unit Supervisor directs you to place HPI/LPI/MU in service in accordance with DB-OP-02000 Attachment 8 PLACE HPI/LPI/MU IN SERVICE.

This JPM is time critical.

(Provide the examinee a copy of Attachment 8 of DB-OP-02000 R26)

CANDIDATE COPY

INITIAL CONDITIONS:

The reactor has tripped on low pressure due to a small break LOCA

Section 5 of DB-OP-02000 complete up to step 5.3 which is in progress directing performance of ATTACHMENT 8: PLACE HPI/LPI/MU IN SERVICE of DB-OP-02000.

INITIATING CUES:

The Unit Supervisor directs you to place HPI/LPI/MU in service in accordance with DB-OP-02000 Attachment 8 PLACE HPI/LPI/MU IN SERVICE.

This JPM is time critical.

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: Verify both HPI Trains are in service

   STANDARD: Determines only one train of HPI is in service.

   COMMENT: HPI pump 1 is tripped and will not start.

   CUE: **None**

   SAT UNSAT

NOTE:
Alternate Path Starts here. ONLY 1 HPI pump is operating which requires the use of Attachment 11 to determine if flow balancing will be required. There is a leak on one of the injection lines which will require flow balancing. This is a 10 minute time critical action to balance HPI flow.

2. PERFORMANCE STEP: IF only one HPI train is available, AND SCM is NOT adequate, THEN REFER TO Attachment 11,HPI Flow Balancing. (Time Critical Action = 10 minutes)

   STANDARD: Verifies HPI 2 red light lit, green light not lit
   Verifies HPI 1 green light lit, red light not lit.
   Verifies Subcooling Margin Meter indicates less than 20 °F

   CUE: **None**

   SAT UNSAT

3 PERFORMANCE STEP: Determine if HPI flow balancing is required

   STANDARD: Verifies HIS RC2A green light lit, red light not lit which verifies MU/HPI/PORV Cooling not inservice.
   Verifies Subcooling Margin Meter indicates less than 20 °F

   CUE: **None**

   SAT UNSAT

4 PERFORMANCE STEP: Locate the correct step of Attachment 11

STANDARD: Identifies step 3 as the correct step since HPI Pump 2 is operating

CUE: **None**

SAT UNSAT

TIME CRITICAL START TIME: _____

5. PERFORMANCE STEP: Stop Makeup flow through HPI train 2
.....C.....

STANDARD: Depresses close on HIS 6422
Verifies red light not lit, green light lit

CUE: **None**

SAT UNSAT

6. PERFORMANCE STEP: Verify HP 2A and HP 2B are open

STANDARD: Verifies HIS HP 2A and HP 2B red lights lit, green lights not lit

CUE: **None**

SAT UNSAT

7. PERFORMANCE STEP: Refer to figure 3 and determine if each HPI flow is in the Acceptable region or not.

STANDARD: Circle selected pressure instrument on figure 3 and Verifies current RCS pressure. Verifies flow on FYI-HP3B and FYI-HP3A. Determines FYI-HP3A flow is in the Unacceptable region.

CUE: **None**

SAT UNSAT

8. PERFORMANCE STEP: IF only a single flow line is NOT in the acceptable region,
.....C..... THEN throttle the higher flow line until the lower flow line is in the acceptable region

STANDARD: Depresses the close pushbutton on the high flow line until the low flow line is within the acceptable region of Figure 3

CUE: **None**

SAT UNSAT

TIME CRITICAL STOP TIME: _____

9. PERFORMANCE STEP: Re-establish Makeup flow through HPI train 2
.....C.....

STANDARD: Depresses open on HIS 6422
Verifies red light lit, green light not lit

CUE: **None**

_____
SAT UNSAT

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

_____
END TIME

Verification of Completion

Job Performance Measure No. _____

Examinee's Name: _____

Examiner's Name: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: Satisfactory/Unsatisfactory

Examiner's signature and date: _____

Facility: Davis-Besse **Task No:** 000-081-04-0100

Task Title: Rapid Cooldown of the RCS

K/A Reference: (041) A3.01 3.2/3.2 **Job Performance Measure No**: NEW

Examinee: _____

NRC Examiner: _____ **Date:** _____

Method of testing:

Simulated Performance ___ Actual Performance _X_

Classroom ___ Simulator _X_ Plant ___

Read to the examinee:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

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

Task Standard:

Perform a Rapid Cooldown of the RCS 80-100°F/hr; First with the TBVs and then with the AVVs when the TBVs fail closed.

Required Materials:

DB-OP-02543, Rapid Cooldown Rev 8 signed off through step 4.1.9.a
DB-OP-02000 Attachment 3 Rev 26

General References: None

Initiating Cue:

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

Time Critical Task: No **Alternate Path:** Yes

Validation Time: 13 minutes

SIMULATOR INSTRUCTIONS

TASK DESCRIPTION:

Commence a Rapid Cooldown of the RCS

INITIAL CONDITION:

Reactor tripped with the Main Condenser available
Supplemental actions of DB-OP-02000 complete

ADDITIONAL SETUP/DEVIATION FROM INITIAL CONDITION:

DB-OP-02543 complete up through 4.1.9.a

MALFUNCTIONS/FAILURE TO INSERT:

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

EXAMINER COPY

INITIAL CONDITIONS:

The Reactor has been 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 up through step 4.1.9.a.

INITIATING CUES:

The Unit Supervisor has directed you to establish an 80-100 °F/Hr Cooldown starting at step 4.1.9.b of DB-OP-02543, Rapid Cooldown.

(Provide a copy of DB-OP-02543, Rapid Cooldown, signed off through step 4.1.9.a, to the examinee)

CANDIDATE COPY

INITIAL CONDITIONS:

The Reactor has been 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 up through step 4.1.9.a

INITIATING CUES:

The Unit Supervisor has directed you to establish an 80-100 °F/Hr Cooldown starting at step 4.1.9.b 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 button. Verifies White light lit, red light not lit

   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**

SAT UNSAT

3. PERFORMANCE STEP: Establish 80 - 100 °F Cooldown of the RCS
……..C…….

   STANDARD: Monitors SPDS Cooldown graph. Establishes Cooldown of 80 - 100 °F/hr (~ 1.33 – 1.67 °F/min).

   CUE: **None**

SAT UNSAT

NOTE:
Alternate Path Starts here. 8 minutes after TBVs are place in hand, the TBVs will fail closed. This will stop the RCS cooldown. The candidate must recoginize the failure and refer back to step 4.1.9.d which provides guidance on the use of the AVVs to continue the cooldown.

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

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

   CUE: **(if asked) The Unit Supervisor directs you to continue with the Cooldown in accordance with step 4.1.9 of DB-OP-02543, Rapid Cooldown.**

SAT UNSAT

5. PERFORMANCE STEP: Refers to DB-OP-02000 Attachment 3: Operation Of Atmospheric Vent Valves (AVVS)

   STANDARD: Locates DB-OP-02000 Attachment 3

   COMMENT: Candidate may also refer to ICS Procedure DB-OP-06401 sect. 3.20 which contains similar steps for AVV operation.

   CUE: **(If necessary), Provide candidate a clean copy of DB-OP-02000 Attachment 3**

SAT UNSAT

6. PERFORMANCE STEP: IF Instrument Air is NOT available because D2 Bus is de-energized, THEN restore power to D2.

   STANDARD: Determines that this step is N/A

   CUE: **None**

SAT UNSAT

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

   STANDARD: Positions slider up to hand on PIC ICS11B

   CUE: **None**

SAT UNSAT

8. PERFORMANCE STEP: Reduce SG 1 AVV demand to zero

   STANDARD: Rotates PIC ICS11B demand controller output to zero

   CUE: **None**

SAT UNSAT

9. PERFORMANCE STEP: Press SG 1 AVV BLOCK pushbuttons
……..C…….

STANDARD: Depresses HIS ICS11D AVV BLOCK pushbutton

CUE: **None**

SAT UNSAT

---

10. PERFORMANCE STEP: Press AUTO SG 1 AVV(s) Hand Indicating Switch
……..C…….

STANDARD: Depresses Auto on HIS ICS11B

CUE: **None**

SAT UNSAT

---

11. PERFORMANCE STEP: Control Steam Generator Pressure as required to establish
……..C……. Cooldown of 80 -100 °F/hr.

STANDARD: Incrementally increases PIC ICS11B demand controller output
Monitor SPDS Cooldown graph to establish Cooldown of 80 -100 °F/hr.

CUE: **None**

SAT UNSAT

---

12. PERFORMANCE STEP: Place SG 2 AVV Hand/Auto Station in HAND
……..C…….

STANDARD: Positions slider up to hand on PIC ICS11A

CUE: **None**

SAT UNSAT

---

13. PERFORMANCE STEP: Reduce SG 2 AVV demand to zero

STANDARD: Rotates PIC ICS11A demand controller output to zero

CUE: **None**

SAT UNSAT

---

14. PERFORMANCE STEP: Press SG 2 AVV BLOCK pushbuttons
……..C…….

STANDARD: Depresses HIS ICS11C AVV BLOCK pushbutton

CUE: **None**

SAT UNSAT

---

15. PERFORMANCE STEP: Press AUTO SG 2 AVV(s) Hand Indicating Switch
……..C…….

STANDARD: Depresses Auto on HIS ICS11A

CUE: **None**

SAT UNSAT

---

16. PERFORMANCE STEP: Control Steam Generator Pressure as required to establish
……..C……. Cooldown of 80 -100 °F/hr.

STANDARD: Incrementally increases PIC ICS11A demand controller output
Monitor SPDS Cooldown graph to establish Cooldown of 80 -100 °F/hr.

CUE: **None**

SAT UNSAT

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

END TIME

Verification of Completion

Job Performance Measure No. _____

Examinee's Name: _____

Examiner's Name: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: Satisfactory/Unsatisfactory

Examiner's signature and date: _____

Facility: Davis-Besse **Task No:** 022-002-01-0100

Task Title: Shift Containment Air Cooler 1 from Slow Speed to Fast Speed

K/A Reference: (022) A4.01 3.6/3.6 **Job Performance Measure No**: JPM 151

Examinee: _____

NRC Examiner: _____ **Date:** _____

Method of testing:

Simulated Performance ___ Actual Performance _X_

Classroom ___ Simulator _X_ Plant ___

Read to the examinee:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

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

Task Standard:

Shift Containment Air Cooler 1 from Slow Speed to Fast Speed

Required Materials:

DB-OP-06016 R29, Section 4.5

General References:

Initiating Cue:

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

Time Critical Task: No

Validation Time: 10 minutes

SIMULATOR INSTRUCTIONS

TASK DESCRIPTION:

Shift Containment Air Cooler 1 from Slow Speed to Fast Speed

INITIAL CONDITION:

Mode 5

ADDITIONAL SETUP/DEVIATION FROM INITIAL CONDITION:

Start CAC 1 in slow speed

Stop CAC 2 and CAC 3

Place temporary CAC TICs in the cabinet with the GMAC controllers

Set TIC 1356 to 75°F

MALFUNCTIONS/FAILURE TO INSERT:

None

EXAMINER COPY

INITIAL CONDITIONS:

The plant is Mode 5

Containment Air Cooler 1 is running is slow speed

INITIATING CUES:

The Unit Supervisor directs you to transfer Containment Air Cooler 1 from slow speed to fast speed in accordance with section 4.5 of DB-OP-06016, Containment Air Cooling System procedure

(Provide the examinee a copy of section 4.5 of DB-OP-06016)

CANDIDATE COPY

INITIAL CONDITIONS:

The plant is Mode 5

Containment Air Cooler 1 is running is slow speed

INITIATING CUES:

The Unit Supervisor directs you to transfer Containment Air Cooler 1 from slow speed to fast speed in accordance with section 4.5 of DB-OP-06016, Containment Air Cooling System procedure

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: Initial prerequisite and circle Containment Air Cooler (CAC) Fan 1

   STANDARD: Initials prerequisite and circles Containment Air Cooler Fan 1 in step 4.5.2

   COMMENT: Candidate may pre N/A non-applicable steps in procedure section.

   CUE: **None**

   SAT UNSAT

2 PERFORMANCE STEP: Stop Containment Air Cooler Fan 1
……..C…….

   STANDARD: Depresses stop on HIS 5031 and records time CAC 1 stopped
   Verifies green light lit, blue light not lit

   CUE: **None**

   SAT UNSAT

3. PERFORMANCE STEP: Open SW 1356, CAC 1 Outlet Temperature Control Valve

   STANDARD: Depresses OPEN on HIS 1356. Verifies red light lit, green light not lit

   CUE: **None**

   SAT UNSAT

4. PERFORMANCE STEP: Set SW 1356, CAC 1 Temperature Control Valve to desired
.....C..... setpoint

   STANDARD: Adjust TIC 1356 thumbwheel to 90°F

   CUE: **(If asked) The Shift Manager desires a setpoint of 90°F for TIC 1356**

   (If asked) Identify the location of the CAC TICs temporarily installed on the simulator (this is not where it is located in the control room).

   SAT UNSAT

5. PERFORMANCE STEP: Restore SW 1356, CAC 1 Outlet Temperature Control Valve to Automatic control **.....C.....**

   STANDARD: Depresses CLOSE/AUTO on HIS 1356
   Verifies red light lit and green light not lit

   CUE: **None**

_____
SAT UNSAT

6. PERFORMANCE STEP: Start CAC 1 in fast speed 5 minutes after stopping **.....C.....**

   STANDARD: Rotates HIS 5031 to FAST. Verifies red light lit, green light not lit

   COMMENT: Annunciator 1-6-A, INV YV1 YV3 TRBL or 1-6-K, INV YV2 YV4 TRBL may come in when starting a Containment Air Cooler Fan due to momentary out of sync alarm on the respective essential inverters.

   CUE: **(If Operator states waiting 5 minutes and it is desired for time compression) 5 minutes has elapsed since the Containment Air Cooler was stopped**

_____
SAT UNSAT

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

_____
END TIME

Verification of Completion

Job Performance Measure No. _____

Examinee's Name: _____

Examiner's Name: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: Satisfactory/Unsatisfactory

Examiner's signature and date: _____

Facility: Davis-Besse **Task No:** 000-064-05-0100

Task Title: Remote Live Bus Transfer of 13.8 KV Bus A & B to the Auxiliary Transformer

K/A Reference: (062) A4.01 (3.3/3.1) **Job Performance Measure No**: NEW

Examinee: _____

NRC Examiner: _____ **Date:** _____

Method of testing:

Simulated Performance ___ Actual Performance _X_

Classroom ___ Simulator _X_ Plant ___

Read to the examinee:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

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

Task Standard:

Perform a Live Bus Transfer of 13.8 KV Bus A & B to the Auxiliary Transformer, transfer back to the Startup Transformers when the Annunciators indicate a problem with the Auxiliary Transformer.

Required Materials:

DB-OP-06314 R12, Sections 3.8 and 3.9
DB-OP-02001 R25, Annunciator 1-3-F
DB-OP-02100 R05, Annunciator 100-1-A

General References:

Initiating Cue:

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

Time Critical Task: No **Alternate Path:** Yes

Validation Time: 19 minutes

SIMULATOR INSTRUCTIONS

TASK DESCRIPTION:

Perform a Remote Live Bus Transfer of 13.8 KV Bus A & B to the Auxiliary Transformer

INITIAL CONDITION:

Mode 1
Startup Transformers supplying A and B Buses
Backfeed is **NOT** in progress

ADDITIONAL SETUP/DEVIATION FROM INITIAL CONDITION:

None

MALFUNCTIONS/FAILURE TO INSERT:

Insert Annunciator Alarm 1-3-F (AUX XFMR 11 TRBL) when the second 13.8KV bus is transferred to the Auxiliary Transformer

EXAMINER COPY

INITIAL CONDITION:

Mode 1
Startup Transformers supplying A and B Buses
AUX 11 transformer is **NOT** Backfeeding

INITIATING CUES:

The Unit Supervisor directs you to perform a remote live transfer of the 13.8 KV Bus A, followed by 13.8 KV Bus B, from the Startup Transformer to the Auxiliary Transformer to in accordance with Section 3.8 and 3.9 of DB-OP-06314, 13.8 KV Buses Switching Procedure.

(Provide the trainee a copy of DB-OP-06314 Section 3.8 and 3.9)

CANDIDATE COPY

INITIAL CONDITION:

Mode 1
Startup Transformers supplying A and B Buses
AUX 11 transformer is **NOT** Backfeeding

INITIATING CUES:

The Unit Supervisor directs you to perform a remote live transfer of the 13.8 KV Bus A, followed by 13.8 KV Bus B, from the Startup Transformer to the Auxiliary Transformer to in accordance with Section 3.8 and 3.9 of DB-OP-06314, 13.8 KV Buses Switching Procedure.

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: Perform prerequisites for section 3.8

   STANDARD: Places a check mark in space for Aux 11 Transformer for step 3.8.1
   Mark steps 3.8.2.a, b and c as N/A

   CUE: **(if asked) Aux 11 Transformer is not in backfeed alignment**

   SAT UNSAT

2. PERFORMANCE STEP: Turn HS6293, BUS A SYNC CHECK, to the selected power source and wait 15 seconds
   .....C.....

   STANDARD: Turns HS6293, BUS A SYNC CHECK switch to X11 position

   CUE: **None**

   SAT UNSAT

3. PERFORMANCE STEP: After 15 seconds have elapsed, close HX11A
   .....C.....

   STANDARD: Places HIS6200, to the CLOSE position and releases
   Verify HX11A red light ON, green light OFF

   CUE: **None**

   SAT UNSAT

4. PERFORMANCE STEP: Verify HX01A has tripped

   STANDARD: Verifies HX01A green light lit, red light not lit

   COMMENT: If HX11A switch release from close to normal takes longer than 0.25 seconds, the automatic trip will not occur (operator will have to open HX01A at switch)

   CUE: **None**

   SAT UNSAT

5. PERFORMANCE STEP: Turn HS6293, BUS A SYNC CHECK switch to, OFF

   STANDARD: Turns HS6293, BUS A SYNC CHECK switch to OFF

   CUE: **None**

SAT UNSAT

6. PERFORMANCE STEP: Verify normal A Bus Voltage

   STANDARD: Verifies EI 6256, A Bus kilovolts indicates approximately 13.8 KV

   CUE: **None**

SAT UNSAT

7. PERFORMANCE STEP: Verify appropriate reserve power source selected **.....C.....**

   STANDARD: Turns HS6294, BUS A RESERVE SOURCE selected to X01 position

   CUE: **The Unit Supervisor directs the Bus A reserve source selector switch to be placed in X01 position**

SAT UNSAT

8. PERFORMANCE STEP: Select 10/Local Reserve Source Selector Switch (RSSS) A Bus to the X01 position

   STANDARD: Direct equipment operator to reposition the A bus local RSSS to X01

   CUE: **Equipment Operator has repositioned the A bus local RSSS to X01**

SAT UNSAT

9. PERFORMANCE STEP: Perform prerequisites for section 3.9

   STANDARD: Places a check mark in space for Aux 11 Transformer for step 3.9.1
   Mark steps 3.9.2.a, b and c as N/A

   CUE: **(if asked) Aux 11 Transformer is not in backfeed alignment**

SAT UNSAT

10. PERFORMANCE STEP: Turn HS6296, BUS B SYNC CHECK, to the selected power source and wait 15 seconds

    .....C.....

    STANDARD: Turns HS6296, BUS B SYNC CHECK switch to X11 position

    CUE: **None**

    SAT UNSAT

11. PERFORMANCE STEP: After 15 seconds have elapsed, close HX11B

    .....C.....

    STANDARD: Takes HIS6208, to the CLOSE position and releases
    Verifies HX11B red light lit, green light not lit

    CUE: **None**

    SAT UNSAT

NOTE:
Alternate Path Starts here. When HX02B trips, Annunciator Alarm 1-3-F, AUX XFMR 11 TRBL will alarm. The candidate will respond to the alarm and dispatch local operators to investigate. Local operators will report high winding temperatures with all available cooler groups in operation. SRO direction may be required to direct the candidate to place the startup transformers back in service.

12. PERFORMANCE STEP: Verify HX02B has tripped

    STANDARD: Verifies HX02B green light lit, red light not lit

    COMMENT: If HX11B switch release from close to normal takes longer than 0.25 seconds, the automatic trip will not occur (operator will have to open HX02B at switch)

    Action: **Annunciator Alarm 1-3-F, AUX XFMR 11 TRBL alarms**

    CUE: **When located, provide DB-OP-02001, Annunciator 1-3-F to Candidate**

    SAT UNSAT

13. PERFORMANCE STEP: Send Operator to Aux Transformer 11

    STANDARD: Sends Operator to Aux Transformer 11

    CUE: **Operator reports Local alarm 100-1-A in alarm. Winding Temperature 115°C and rising. Idle Cooler Group fans will not start.**
    When located, provide DB-OP-02100, Annunciator 100-1-A to Candidate

    SAT UNSAT

14. PERFORMANCE STEP: Determine Auxiliary Transformer load should be transferred back to a Startup Transformer

    STANDARD: Determines B bus should be transferred back to X02

    Comment: May also determine A bus should be transferred back to X01

    CUE: **Unit Supervisor directs transfer of B bus to X02 Transformer followed by A Bus to X01 Transformer**

    (if asked) Provide clean copy of DB-OP-06314, Section 3.8 and 3.9

    SAT UNSAT

15. PERFORMANCE STEP: Perform prerequisites for section 3.9

    STANDARD: Place check mark in space for 02 Startup Transformer for step 3.9.1
    Mark steps 3.9.2.a, and b N/A

    CUE: **Computer points for 02 Startup Transformer indicate ≥ 339.2 KV (Step 3.9.2.c) Electrical connection check not required**

    SAT UNSAT

16. PERFORMANCE STEP: Turn HS6296, BUS B SYNC CHECK, to the selected power source and wait 15 seconds

    .....C.....

    STANDARD: Turns HS6296, BUS B SYNC CHECK switch to X02 position

    CUE: **None**

    SAT UNSAT

17. PERFORMANCE STEP: After 15 seconds have elapsed, close HX02B

    .....C.....

    STANDARD: Takes HIS6210, to the CLOSE position and releases
    Verify HX02B red light lit, green light not lit

    COMMENT: Expected annunciator alarm 1-5-G, BUS B BKRS NTNM, will occur

    CUE: **None**

    SAT UNSAT

18. PERFORMANCE STEP: Verify HX011B has tripped

    STANDARD: Verifies HX011B green light lit, red light not lit

    COMMENT: If HX02B switch release from close to normal takes longer than 0.25 seconds, the automatic trip will not occur (operator will have to open HX11B at switch)

    CUE: **None**

SAT UNSAT

19. PERFORMANCE STEP: Turn HS6296, BUS B SYNC CHECK, to OFF
    .....C.....

    STANDARD: Turns HS6296, BUS B SYNC CHECK switch to OFF position

    CUE: **None**

SAT UNSAT

20. PERFORMANCE STEP: Verify normal B Bus Voltage

    STANDARD: Verifies EI 6257, B Bus kilovolts indicates approximately 13.8 KV

    CUE: **None**

SAT UNSAT

21. PERFORMANCE STEP: Verify appropriate reserve power source selected
    .....C.....

    STANDARD: Verifies HS6295, BUS B RESERVE SOURCE selected to X01 position

    CUE: **The Unit Supervisor directs the BUS B reserve source selector switch to be placed in X01 position**

SAT UNSAT

22. PERFORMANCE STEP: Select 10/Local Reserve Source Selector Switch (RSSS) B Bus to the X01 position

    STANDARD: Direct equipment operator to verify the local RSSS B Bus to X01

    CUE: **Equipment Operator has verified the local RSSS B Bus to X01**

SAT UNSAT

23. PERFORMANCE STEP: Perform prerequisites for section 3.8

    STANDARD: Place check mark in space for 01 Startup Transformer for step 3.8.1
    Mark steps 3.8.2.a, and c N/A

    CUE: **Computer points for 01 Startup Transformer indicate ≥ 339.2 KV (Step 3.8.2.b)**
    Electrical connection check not required

    SAT UNSAT

24. PERFORMANCE STEP: Turn HS6293, BUS A SYNC CHECK, to the selected power source and wait 15 seconds

    .....C.....

    STANDARD: Turns HS6293, BUS A SYNC CHECK switch to X01 position

    CUE: **None**

    SAT UNSAT

25. PERFORMANCE STEP: After 15 seconds have elapsed, close HX01A

    .....C.....

    STANDARD: Takes HIS6203, to the CLOSE position and releases
    Verify HX01A red light lit, green light not lit

    COMMENT: Expected annunciator alarm 1-5-E, BUS A BKRS NTNM, will occur

    CUE: **None**

    SAT UNSAT

26. PERFORMANCE STEP: Verify HX11A has tripped

    STANDARD: Verifies HX11A green light lit, red light not lit

    COMMENT: If HX01A switch release from close to normal takes longer than 0.25 seconds, the automatic trip will not occur (operator will have to open HX11A at switch)

    CUE: **None**

    SAT UNSAT

27. PERFORMANCE STEP: Turn HS6293, BUS A SYNC CHECK, to OFF

    .....C.....

    STANDARD: Turns HS6293, BUS A SYNC CHECK switch to OFF position

    CUE: **None**

    SAT UNSAT

28. PERFORMANCE STEP: Verify normal A Bus Voltage

    STANDARD: Verifies EI 6256, A Bus kilovolts indicates approximately 13.8 KV

    CUE: **None**

_____
SAT UNSAT

29. PERFORMANCE STEP: Verify appropriate reserve power source selected **.....C.....**

    STANDARD: Turns HS6294, BUS A RESERVE SOURCE selected to X02 position

    CUE: **The Unit Supervisor directs the Bus A reserve source selector switch to be placed in X02 position**

_____
SAT UNSAT

30. PERFORMANCE STEP: Select 10/Local Reserve Source Selector Switch (RSSS) A Bus to the X02 position

    STANDARD: Direct equipment operator to reposition the local RSSS A Bus to X02

    CUE: **Equipment Operator has repositioned the local RSSS to X02**

_____
SAT UNSAT

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

_____
END TIME

Verification of Completion

Job Performance Measure No. _____

Examinee's Name: _____

Examiner's Name: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: Satisfactory/Unsatisfactory

Examiner's signature and date: _____

Facility: Davis-Besse **Task No:** 040-012-04-0100

Task Title: Bypass SFRCS Logic Channel Trips

K/A Reference: (012) A4.03 3.6/3.6 **Job Performance Measure No**: JPM 108

Examinee: _____

NRC Examiner: _____ **Date:** _____

Method of testing:

Simulated Performance ___ Actual Performance _X_

Classroom ___ Simulator _X_ Plant ___

Read to the examinee:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

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

Task Standard:

SFRCS Logic Channels 1 & 3 bypassed

Required Materials:

DB-OP-06406, Rev 12 sections 3.13 & 3.15

General References: None

Initiating Cue:

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

Time Critical Task: No

Alternate Path: No

Validation Time: 16 minutes

SIMULATOR INSTRUCTIONS

TASK DESCRIPTION:

Bypass SFRCS Logic Channel Trips

INITIAL CONDITION:

Mode 5

ADDITIONAL SETUP/DEVIATION FROM INITIAL CONDITION:

None

MALFUNCTIONS/FAILURE TO INSERT:

None

EXAMINER COPY

INITIAL CONDITIONS:

The plant is operating in Mode 5

All plant systems are in a normal alignment

INITIATING CUES:

I&C is preparing to perform SFRCS component response time testing

The Unit Supervisor directs you to bypass ALL of the logic channel trips in SFRCS channels 1 and 3 in accordance with sections 3.13 and 3.15 of DB-OP-06406, Steam and Feedwater Rupture Control System Operation Procedure

(Provide the examinee a copy of sections 3.13 and 3.15 of DB-OP-06406)

CANDIDATE COPY

INITIAL CONDITIONS:

The plant is operating in Mode 5

All plant systems are in a normal alignment

INITIATING CUES:

I&C is preparing to perform SFRCS component response time testing

The Unit Supervisor directs you to bypass ALL of the logic channel trips in SFRCS channels 1 and 3 in accordance with sections 3.13 and 3.15 of DB-OP-06406, Steam and Feedwater Rupture Control System Operation Procedure

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: Obtain SFRCS keys and open SFRCS Channel 1/3 door

   STANDARD: Obtain keys from the Control Room key locker
   Cabinet C5761A door key is key 17
   KS-1 is the key for Channel 1 (key 14)
   KS-3 is the key for Channel 3 (key 16)

   CUE: **None**

   _____
   SAT UNSAT

2. PERFORMANCE STEP: Opens cabinet C5761A door

   STANDARD: Inserts key 17 into cabinet C5761A door and rotates to unlock and opens.

   CUE: **None**

   _____
   SAT UNSAT

3. PERFORMANCE STEP: Enable the SFRCS Logic Channel 1 in bypass switches **.....C.....**

   STANDARD: Inserts Key KS-1 and rotates to BYP position

   CUE: **None**

   _____
   SAT UNSAT

4. PERFORMANCE STEP: Bypass SFRCS Logic Channel 1 SG Low Pressure trips **.....C.....**

   STANDARD: SB-031 toggle switch placed in the BYP position
   SB-041 toggle switch placed in the BYP position
   Verifies red lights are lit

   CUE: **None**

   _____
   SAT UNSAT

5. PERFORMANCE STEP: Bypass SFRCS Logic Channel 1 SG DP trips
.....C.....

STANDARD: SB-051 toggle switch placed in the BYP position
SB-061 toggle switch placed in the BYP position
Verifies red lights remain lit

CUE: **None**

SAT UNSAT

6. PERFORMANCE STEP: Bypass SFRCS Logic Channel 1 SG High Level trips
.....C.....

STANDARD: SB-071 toggle switch placed in the BYP position
SB-081 toggle switch placed in the BYP position
Verifies red lights are lit

CUE: **None**

SAT UNSAT

7. PERFORMANCE STEP: Bypass SFRCS Logic Channel 1 SG Low Level trips
.....C.....

STANDARD: SB-091 toggle switch placed in the BYP position
SB-101 toggle switch placed in the BYP position
Verifies red lights remain lit

CUE: **None**

SAT UNSAT

8. PERFORMANCE STEP: Bypass SFRCS Logic Channel 1 RCPM trips
.....C.....

STANDARD: SB-111 toggle switch placed in the BYP position
Verifies red light is lit

CUE: **None**

SAT UNSAT

9. PERFORMANCE STEP: Enable the SFRCS Logic Channel 3 in bypass switches
.....C.....

STANDARD: Inserts Key KS-3 and rotates to BYP position

CUE: **None**

SAT UNSAT

10. PERFORMANCE STEP: Bypass SFRCS Logic Channel 3 SG Low Pressure trips
.....C.....

STANDARD: SB-033 toggle switch placed in the BYP position
SB-043 toggle switch placed in the BYP position
Verifies red lights are lit

CUE: **None**

_____
SAT UNSAT

11. PERFORMANCE STEP: Bypass SFRCS Logic Channel 3 SG DP trips
.....C.....

STANDARD: SB-053 toggle switch placed in the BYP position
SB-063 toggle switch placed in the BYP position
Verifies red lights remain lit

CUE: **None**

_____
SAT UNSAT

12. PERFORMANCE STEP: Bypass SFRCS Logic Channel 3 SG High Level trips
.....C.....

STANDARD: SB-073 toggle switch placed in the BYP position
SB-083 toggle switch placed in the BYP position
Verifies red lights are lit

CUE: **None**

_____
SAT UNSAT

13. PERFORMANCE STEP: Bypass SFRCS Logic Channel 3 SG Low Level trips
.....C.....

STANDARD: SB-093 toggle switch placed in the BYP position
SB-103 toggle switch placed in the BYP position
Verifies red lights remain lit

CUE: **None**

_____
SAT UNSAT

14. PERFORMANCE STEP: Bypass SFRCS Logic Channel 3 RCPM trips
.....C.....

STANDARD: SB-113 toggle switch placed in the BYP position
Verifies red light is lit

CUE: **None**

_____
SAT UNSAT

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

_____
END TIME

Verification of Completion

Job Performance Measure No. _____

Examinee's Name: _____

Examiner's Name: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: Satisfactory/Unsatisfactory

Examiner's signature and date: _____

Facility: Davis-Besse **Task No:** 008-011-04-0100

Task Title: CCW Essential Header Leak Isolation

K/A Reference: (008) A2.02 3.2/3.5 **Job Performance Measure No**: JPM 125

Examinee: _____

NRC Examiner: _____ **Date:** _____

Method of testing:

Simulated Performance ___ Actual Performance _X_

Classroom ___ Simulator _X_ Plant ___

Read to the examinee:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

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

Task Standard:

CCW Non-Essential Header Isolated and all start signals for CCW Pump 2 and EDG-2 are BLOCKED.

Required Materials:

DB-OP-02523, Component Cooling Water Malfunctions, Attachment 1, CCW Non-Essential Header Isolation and Attachment 2, Shutdown of a Leaking CCW Essential Header

General References: None

Initiating Cue:

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

Time Critical Task: No **Alternate Path:** Yes

Validation Time: 10 minutes

SIMULATOR INSTRUCTIONS

TASK DESCRIPTION:

CCW Non-Essential Header Isolation and Shutdown of a Leaking CCW Essential Header

INITIAL CONDITION:

100% Power

ADDITIONAL SETUP/DEVIATION FROM INITIAL CONDITION:

1. CCW Pump 2 is running, CCW Pump 1 in standby
2. Trip the Reactor, Stop all RCPs
3. Close CC1495, CC1328, CC 1411B and CC 1460

MALFUNCTIONS/FAILURE TO INSERT:

Fail LT 1402 to 35 inches
KAI5E 0.57

Fail Lt 1403 to 35 inches
KAI9E 0.575

Fail closed
CC 5095, CC 5097, CC 2645, CC 5096, CC 5098, CC 2649

Ramp LT 1403 to 0 inches over 5 minutes when CC 1338 GREEN light is lit
KAI9E 0.0 (00:05:00) 0.575

EXAMINER COPY

INITIAL CONDITIONS:

The plant was at 100% power

A leak has developed in the Component Cooling Water System

The Reactor has been tripped

The Reactor Coolant Pumps have been tripped

INITIATING CUES:

The Unit Supervisor directs you to perform Attachment 1, CCW Non-Essential Header Isolation of DB-OP-02523, Component Cooling Water Malfunctions

(Provide the examinee a copy of Attachment 1 of DB-OP-02523)

CANDIDATE COPY

INITIAL CONDITIONS:

The plant was at 100% power

A leak has developed in the Component Cooling Water System

The Reactor has been tripped

The Reactor Coolant Pumps have been tripped

INITIATING CUES:

The Unit Supervisor directs you to perform Attachment 1, CCW Non-Essential Header Isolation of DB-OP-02523, Component Cooling Water Malfunctions

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: Verify CC 1495, CCW TO AUX BLDG NON-ESSEN HEADER is closed

   STANDARD: Verifies HIS 1495 green light lit, red light not lit

   CUE: **None**

   _____
   SAT UNSAT

2. PERFORMANCE STEP: Verify CC 5095, Loop 1 SUPPLY is closed

   STANDARD: Verifies HIS 5095 green light lit, red light not lit

   CUE: **None**

   _____
   SAT UNSAT

3. PERFORMANCE STEP: Verify CC 5097, Loop 1 CTMT BLDG RETURN is closed

   STANDARD: Verifies HIS 5097 green light lit, red light not lit

   CUE: **None**

   _____
   SAT UNSAT

4. PERFORMANCE STEP: Verify CC 2645, Loop 1 AUX BLDG RETURN is closed

   STANDARD: Verifies HIS 2645 green light lit, red light not lit

   CUE: **None**

   _____
   SAT UNSAT

5. PERFORMANCE STEP: Verify CC 5096, Loop 2 SUPPLY is closed

   STANDARD: Verifies HIS 5096 green light lit, red light not lit

   CUE: **None**

   _____
   SAT UNSAT

6. PERFORMANCE STEP: Verify CC 5098, Loop 2 CTMT BLDG RETURN is closed

   STANDARD: Verifies HIS 5098 green light lit, red light not lit

   CUE: **None**

   _____
   SAT UNSAT

7. PERFORMANCE STEP: Verify CC 2649, LOOP2 AUX BLDG RETURN is closed

   STANDARD: Verifies HIS 2649 green light lit, red light not lit

   CUE: **None**

   _____
   SAT UNSAT

8. PERFORMANCE STEP: Verify CC 1328, CCW TO CRD CLNG BOOSTER PMP 1 SUCT is closed

   STANDARD: Verifies HIS 1328 green light lit, red light not lit

   CUE: **None**

   _____
   SAT UNSAT

NOTE:
Alternate Path Starts here. In the next 4 steps of the JPM CC 1338 and 1411A failed to automatically close. The candidate will need to recognize these failures and manually close the valves.

9. PERFORMANCE STEP: Verify CC 1338, CCW TO CRD CLNG BOOSTER PMP 2 SUCT is closed

   STANDARD: Determines that CC1338 is still OPEN by verifying HIS 1338 red light lit and green light not lit

   CUE: **(If required) Unit Supervisor acknowledges CC 1338 failed to automatically close**

   _____
   SAT UNSAT

10. PERFORMANCE STEP: Verify CC 1338, CCW TO CRD CLNG BOOSTER PMP 2 SUCT **.....C.....** is closed

    STANDARD: Depresses CLOSE on HIS 1338
    Verifies HIS 1338 green light lit, red light not lit

    CUE: **None**

    _____
    SAT UNSAT

11. PERFORMANCE STEP: Verify CC 1411A, CCW TO CTMT is closed

    STANDARD: Determines that CC1411A is still OPEN by verifying HIS 1411A red light lit and green light not lit

    CUE: **(If required) Unit Supervisor acknowledges CC 1411A failed to automatically close**

    _____
    SAT UNSAT

12. PERFORMANCE STEP: Verify CC 1411A, CCW TO CTMT is closed **.....C.....**

    STANDARD: Depresses CLOSE HIS 1411A
    Verifies HIS 1411A green light lit, red light not lit

    CUE: **None**

    _____
    SAT UNSAT

13. PERFORMANCE STEP: Verify CC1411B, CCW TO CTMT is closed

    STANDARD: Verifies HIS 1411B green light lit, red light not lit

    CUE: **None**

    _____
    SAT UNSAT

14. PERFORMANCE STEP: Verify CC1460, CCW TO MU PMP CLRS is closed

    STANDARD: Verifies HIS 1460 green light lit, red light not lit

    CUE: **None**

    _____
    SAT UNSAT

15. PERFORMANCE STEP: Monitor CCW Surge Tank Level

    STANDARD: Checks level on LI 1402 and LI 1403

    CUE: **None**

    _____
    SAT UNSAT

16. PERFORMANCE STEP: Monitor CCW Surge Tank Level

    STANDARD: Determines LI 1403 is lowering and less than 33 inches and Attachment 2 performance will be required

    CUE: **None**

    _____
    SAT UNSAT

17. PERFORMANCE STEP: Notify the Command SRO of CCW Surge Tank levels and trend

    STANDARD: Verbal communication with the Unit Supervisor

    CUE: **Unit Supervisor repeats back the communication**
    (If asked) The Unit Supervisor directs you to continue with Attachment 2, Shutdown of a Leaking CCW Essential Header (provide Attachment 2)

    _____
    SAT UNSAT

18. PERFORMANCE STEP: Determine which CCW Essential Header is faulted

    STANDARD: Determine Loop 2 is faulted due to LI 1403 is lowering and less than 33 inches

    CUE: **(If asked) The Unit Supervisor concurs with your determination of the faulted CCW Loop**

    _____
    SAT UNSAT

19. PERFORMANCE STEP: Start the Standby CCW Pump
    .....C.....

    STANDARD: Rotates HIS 1414 to START for CCW Pump 1
    Verifies amps rise and CCW Pump 1 red light lit, green light not lit

    CUE: **None**

    _____
    SAT UNSAT

20. PERFORMANCE STEP: Stop the running CCW Pump
.....C.....

STANDARD: Rotates HIS 1418 to TRIP and pull switch to LOCKOUT for CCW Pump 2
Verifies amps drop to 0 amps with green light lit, red light not lit

CUE: **None**

_____
SAT UNSAT

---

21. PERFORMANCE STEP: Verify Emergency Diesel Generators are not running

STANDARD: Verifies EDG speeds at 0 RPM

CUE: **None**

_____
SAT UNSAT

---

22. PERFORMANCE STEP: Monitor CCW Surge Tank Level

STANDARD: Verifies level on LI 1402 and LI 1403 are less than 35 inches

CUE: **None**

_____
SAT UNSAT

---

23. PERFORMANCE STEP: Prevent automatic start of CCW Pump 2
.....C.....

STANDARD: Verifies CCW Pump 2 control switch in lockout and directs an Equipment Operator to pull CCW Pump 2 close power fuses

CUE: **Equipment Operator reports CCW Pump 2 close power fuses have been pulled**

_____
SAT UNSAT

---

24. PERFORMANCE STEP: Close BOTH air starts for Emergency Diesel Generator 2
.....C.....
STANDARD: Directs an Equipment Operator to close DA 31 and DA 45

CUE: **Equipment Operator reports DA 31 and DA 45 are closed**
If necessary, report SM will refer to Tech Specs 3.8.1, 3.8.2, & 3.8.3

_____
SAT UNSAT

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

_____
END TIME

Verification of Completion

Job Performance Measure No. _____

Examinee's Name: _____

Examiner's Name: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: Satisfactory/Unsatisfactory

Examiner's signature and date: _____

Facility: Davis-Besse **Task No:** 000-078-05-0100

Task Title: Actions outside the Control Room of the Primary Side Reactor Operator for a Serious Control Room Fire

K/A Reference: 068 AA1.21(3.9,4.1) **Job Performance Measure No**: 003

Examinee: _____

NRC Examiner: _____ **Date:** _____

Method of testing:

Simulated Performance _X_ Actual Performance ___

Classroom___ Simulator ___ Plant _X_

Read to the examinee:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

This JPM is not dependant on any specific simulator initial conditions since the task is administrative in nature.

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

Task Standard:

Perform steps 3.0, 4.0 and 5.0 of Attachment 3 of DB-OP-02519, Actions outside the Control Room of the Primary Side Reactor Operator for a Serious Control Room Fire

Required Materials:

Attachment 3 of DB-OP-02519, Actions outside the Control Room of the Primary Side Reactor Operator for a Serious Control Room Fire

General References:

Initiating Cue:

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

.

Time Critical Task: No

Validation Time: 23 minutes

EXAMINER COPY

INITIAL CONDITIONS:

The Control Room has been evacuated due to a serious Control Room fire.

INITIATION CUE:

The Shift Manager directs you to perform steps 3.0, 4.0 and 5.0 of Attachment 3 of DB-OP-02519, Actions outside the Control Room of the Primary Side Reactor Operator for a Serious Control Room Fire.

Steps 1.0 through 2.0 of Attachment 3 have been completed.

You have a Captain's lantern, a radio with a fresh battery, an emergency key ring and emergency dosimetry.

(Hand Candidate a copy of Attachment 3 of DB-OP-02519, completed up through step 2.0, to the examinee)

CANDIDATE COPY

INITIAL CONDITIONS:

The Control Room has been evacuated due to a serious Control Room fire.

INITIATION CUE:

The Shift Manager directs you to perform steps 3.0, 4.0 and 5.0 of Attachment 3 of DB-OP-02519, Actions outside the Control Room of the Primary Side Reactor Operator for a Serious Control Room Fire.

Steps 1.0 through 2.0 of Attachment 3 have been completed.

You have a Captain's lantern, a radio with a fresh battery, an emergency key ring and emergency dosimetry.

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: _____

---

1. PERFORMANCE STEP: Open BE 1160, SG 1 AFW Iso Valve Starter 1 Via E12E Starter 2 AF608 on E11E
   C

   STANDARD: Press down on handle to open BE 1160 on E11E

   Comment: Entry through Emergency entrance to RRA not required

   CUE: **Breaker handle pulled down and indicates OFF**

SAT UNSAT

---

2. PERFORMANCE STEP: Place disconnect switch RC 110 in LOCAL at CDE16B
   C

   STANDARD: Rotate RC 110 LOCAL/REMOTE knob to the LOCAL position

   CUE: **Switch (for RC 110) has been rotated clockwise to the LOCAL position**

SAT UNSAT

---

3. PERFORMANCE STEP: Close RC 11, PORV Block Valve
   C

   STANDARD: At BKR BE1602 on E16B Press the CLOSE button. Check Green light ON Red light OFF

   CUE: **The CLOSED button (on BE 1602) has been depressed**
   Green light ON Red light OFF

SAT UNSAT

---

4. PERFORMANCE STEP: Place disconnect switches to LOCAL on CD E11E
C

STANDARD: Place AF 3869 and DH 64 disconnect switches in the LOCAL position

CUE: **Disconnect switch (for AF 3869) has been placed in the LOCAL position**
Disconnect switch (for DH 64) has been placed in the LOCAL position

SAT UNSAT

5. PERFORMANCE STEP: Verify CRD Trip BKR D is open

STANDARD: Check CRD Trip BKR D OPEN/CLOSE position. Verify OPEN

CUE: **The position indicating window indicates OPEN**

SAT UNSAT

6. PERFORMANCE STEP: Check power is dropping in the source range at C4808, GAMMA METRICS CABINET

STANDARD: Observe Neutron level is in the source range using NY-5874C

CUE: **(NY-5874C) Power range is 10^{-7}**
Source range indicated 10^{2} and lowering
Source range Startup rate is -0.33 dpm

SAT UNSAT

7. PERFORMANCE STEP: Inform the Shift Manager of source range level

STANDARD: Using Gaitronics or radio call the Shift Manager and report source range level

CUE: **Shift Manager acknowledges source range level**

SAT UNSAT

8. PERFORMANCE STEP: In MPR 3 close MU215, RCP Seal Inj Flow Control Outlet Iso
C

STANDARD: Rotate MU215 in the clockwise direction until valve stem is down

CUE: **(MU215) Valve has been rotated in the Clockwise direction until valve stem is down and handwheel will NOT turn**

SAT UNSAT

9. PERFORMANCE STEP: Open BE 1180 on E11B
C

STANDARD: OPEN breaker BE 1180 for YE2 240 VAC MCC on E11B

CUE: **(BE 1180) breaker handle has been pulled down and indicates OFF (OPEN)**

SAT UNSAT

10. PERFORMANCE STEP: Place disconnect switches to LOCAL on CDE11B-2
C

STANDARD: Place the following disconnect switches in LOCAL at CDE11B-2, MU 59C, MU 59D, RC 240A, CC1407A, and DH 12

CUE: **(MU 59C) disconnect switch is placed in LOCAL**
(MU 59D) disconnect switch is placed in LOCAL
(RC 240A) disconnect switch is placed in LOCAL
(CC 1407A) disconnect switch is placed in LOCAL
(DH 12) disconnect switch is placed in LOCAL

SAT UNSAT

11. PERFORMANCE STEP: Place disconnect switches to LOCAL on CDE11B-1
C

STANDARD: Place all CDE11B-1 disconnect switches in LOCAL position

CUE: **Disconnect switch has been placed in the LOCAL position (on CDE11B-1)**

SAT UNSAT

12. PERFORMANCE STEP: Place disconnect switches to LOCAL on CDE11C
C

STANDARD: Place all CDE11C disconnect switches in LOCAL position

CUE: **Disconnect switch has been placed in the LOCAL position (on CDE11C)**

SAT UNSAT

13. PERFORMANCE STEP: Place disconnect switches to LOCAL on CDE11A
C

STANDARD: Place all CDE11A disconnect switches in LOCAL position

CUE: **Disconnect switch has been placed in the LOCAL position (on CDE11A)**

SAT UNSAT

14. PERFORMANCE STEP: Place disconnect switches to LOCAL on CDYE2
C

STANDARD: Place all CDYE2 disconnect switches in the LOCAL

CUE: **Disconnect switch has been placed in the LOCAL position (on CDYE2)**

SAT UNSAT

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

END TIME

Verification of Completion

Job Performance Measure No. _____

Examinee's Name: _____

Examiner's Name: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: Satisfactory/Unsatisfactory

Examiner's signature and date: _____

Facility: Davis-Besse **Task No:** 076-014-04-0400

Task Title: Service Water Primary header Pressure Control

K/A Reference: 076 K1.01 (3.4/3.3) **Job Performance Measure No**: NEW

Examinee: _____

NRC Examiner: _____ **Date:** _____

Method of testing:

Simulated Performance _X_ Actual Performance ___

Classroom ___ Simulator __ Plant _X_

Read to the examinee:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

This JPM is not dependant on any specific simulator initial conditions since the task is administrative in nature.

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

Task Standard:

Required Materials:

General References:

Initiating Cue:

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

.

Time Critical Task: No

Validation Time: 17 minutes

EXAMINER COPY

INITIAL CONDITIONS:

Plant is in MODE 1
Component Cooling Water Pump 1 is in service
Component Cooling Water Pump 2 is in standby
Component Cooling Water Pump and Heat Exchanger 3 are in spare status lined up as 1

INITIATION CUE:

The Field Supervisor directs you to perform Section 3.8, Service Water header Pressure Control during Low Service Water Load Conditions Using Primary Loads

(Hand Candidate a copy of Section 3.8 of DB-OP-06261 Service Water System Procedure)

CANDIDATE COPY

INITIAL CONDITIONS:

Plant is in MODE 1
Component Cooling Water Pump 1 is in service
Component Cooling Water Pump 2 is in standby
Component Cooling Water Pump 3 is in spare status as Pump 1

INITIATION CUE:

The Field Supervisor directs you to perform Section 3.8, Service Water header Pressure Control during Low Service Water Load Conditions Using Primary Loads

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: Determine step 3.8.1 is not applicable

   STANDARD: Contact the Control Room and verify Service water temperature (T413) is less than 50 °F and record step 3.8.1 as N/A

   CUE: **T413 indicates 47°F**

SAT UNSAT

---

2. PERFORMANCE STEP: **C** Determine the minimum Service water header pressure after throttling the spare CCW Heat Exchanger Discharge Valve.

   STANDARD: Contact the Control Room and request P945 indication:

   1. Record the 120 psig for P945 and record N/A for P946
   2. Record 120 psig – 20 psig = 100 psig
   3. Enter 100 psig in step 3.8.11

   CUE: **P945 indicates 120 psig**

SAT UNSAT

---

3. PERFORMANCE STEP: **C** Prepare an Operations Information Tag stating “SW (36,37,38) has been throttled to establish SW header pressure control on the primary loop. If SW (36,37,38) is throttled open beyond the current position SW Loop 1 will be rendered Inoperable”

   STANDARD: Requests preparation of an Operations Information Tag stating SW37 as the correct valve

   CUE: **The tagging RO has prepared the correct tag (simulate tag)**

SAT UNSAT

---

4. PERFORMANCE STEP: Verify SW2929 or SW2930 is open
C

STANDARD: Call the Control Room and verify SW2929 or SW2930 is open

CUE: **SW2929 is open**

SAT UNSAT

5. PERFORMANCE STEP: Set computer point High Alarm Value for T413 to 48°F
C

STANDARD: Request the Control Room set computer point High Alarm Value for T413 to 48°F

CUE: **T413 High Alarm is set to 48°F**

SAT UNSAT

6. PERFORMANCE STEP: Place information placards directing restoration as soon as possible if T413 rises to 50°F or an SFAS actuation occurs:
C
    1. On the CCW Heat Exchanger Outlet Valve
    2. Next to the control switch for the Temperature Control valve for the spare CCW heat exchanger (in control room)
    3. On the associated temperature controller

STANDARD: Place information placards:
1. On SW37
2. Next to HIS1429 (call control room to place)
3. On TIC1429

COMMENTS: Simulate placards

CUE: **Placard has been placed**

SAT UNSAT

7. PERFORMANCE STEP: Determine step 3.8.6 is N/A due to T413 being less than 50°F

STANDARD: Record step 3.8.6 as N/A

CUE: **None**

SAT UNSAT

8. PERFORMANCE STEP: Verify CCW Pump 3 is in spare status as Pump 1

STANDARD: Refer to initial conditions

CUE: **None**

SAT UNSAT

9. PERFORMANCE STEP: Verify the spare CCW Heat Exchanger Temperature Control Valve is open

C

STANDARD: Verify SW1429 local mechanical indicator points to open or control room verifies red light on and green light off at HIS1429.

CUE: **(if asked) Control Room reports SW1429 indicates open**

SAT UNSAT

10. PERFORMANCE STEP: Throttle SW37 to between the calculated minimum of 100 psig and 115 psig

STANDARD: Communicate with the Control Room, loosen locking mechanism and throttle open SW37 until P945 indicates between 100 and 115 psig.

CUE: **P945 indicates 105 psig**

SAT UNSAT

11. PERFORMANCE STEP: Hang the Operations Information Tag created in step 3.8.3

STANDARD: Hang the Operations Information Tag on SW37

CUE: **Simulate placard hanging**

SAT UNSAT

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

END TIME

Verification of Completion

Job Performance Measure No. _____

Examinee's Name: _____

Examiner's Name: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: Satisfactory/Unsatisfactory

Examiner's signature and date: _____

Facility: Davis-Besse **Task No:** 064-008-05-0401

Task Title: Emergency Idle Start Emergency Diesel Generator

K/A Reference: 064 A3.06 (3.3/3.4) **Job Performance Measure No**: 242

Examinee: _____

NRC Examiner: _____ **Date:** _____

Method of testing:

Simulated Performance _X_ Actual Performance ___

Classroom___ Simulator __ Plant _X_

Read to the examinee:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

This JPM is not dependant on any specific simulator initial conditions since the task is administrative in nature.

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

Task Standard:

Emergency idle start and emergency shutdown the Emergency Diesel Generator

Required Materials:

Depending on which train is protected on date of performance:

Section 5.4 and 5.5 of DB-OP-06316, Diesel Generator for EDG1

OR

Section 5.10 and 5.11 of DB-OP-06316, Diesel Generator for EDG2

Initiating Cue:

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

.

Time Critical Task: No

Validation Time: 25 minutes

EXAMINER COPY

Train 1

INITIAL CONDITIONS:

The plant is at 100% power

Emergency Diesel Generator 2 is out of service for maintenance

A degraded grid condition exists and the control room has entered the abnormal procedure (DB-OP-02546 Degraded Grid Condition)

INITIATING CUES:

The Unit Supervisor directs you to emergency idle start Emergency Diesel Generator 1, in accordance with section 5.5 of DB-OP-06316, Diesel Generator Operating Procedure

(Provide the examinee a copy of section 5.5 of DB-OP-06316, will also need a copy of section 5.4 of DB-OP-06316 for issue later based upon cue)

(Hand Candidate a copy of Section 5.5 of DB-OP-06316, Diesel Generator Operating Procedure)

CANDIDATE COPY

Train 1

INITIAL CONDITIONS:

The plant is at 100% power

Emergency Diesel Generator 2 is out of service for maintenance

A degraded grid condition exists and the control room has entered the abnormal procedure (DB-OP-02546 Degraded Grid Condition)

INITIATING CUES:

The Unit Supervisor directs you to emergency idle start Emergency Diesel Generator 1, in accordance with section 5.5 of DB-OP-06316, Diesel Generator Operating Procedure

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: Verify CCW 1 or 3 as 1 is running

   STANDARD: Contact the Control Room

   CUE: **The Reactor Operator reports CCW Pump 1 is operating**

SAT UNSAT

---

2. PERFORMANCE STEP: Check for adequate CCW flow to EDG 1

   STANDARD: Visual check of FIS 1473

   CUE: **FIS 1473 indicates 900 GPM**

SAT UNSAT

---

3. PERFORMANCE STEP: Set the field to flash at 800 RPM
   C

   STANDARD: Field Flash switch moved to the 800 RPM position

   CUE: **Field Flash switch has been moved to the 800 RPM position**

SAT UNSAT

---

4. PERFORMANCE STEP: Idle start EDG 1
   C

   STANDARD: Depress Idle Start pushbutton on panel C3621A

   CUE: **EDG 1 starts and accelerates**
   EDG 1 speed indicates 450 RPM

SAT UNSAT

---

5. PERFORMANCE STEP: Check EDG 1 field is NOT flashed

   STANDARD: Visual check of Field Flashed light on Panel C3617

   CUE: **Red Field Flash light is LIT**

SAT UNSAT

---

6. PERFORMANCE STEP: Shutdown EDG 1
C

STANDARD: Emergency shutdown pushbutton on Panel C3621 is depressed

CUE: **Emergency shutdown pushbutton is DEPRESSED**
EDG 1 is shutting down
EDG 1 speed indicates 0 RPM

SAT UNSAT

7. PERFORMANCE STEP: Route to the correct procedure section

STANDARD: Identifies section 5.4 as the correct procedure section

CUE: **Provide the examinee a copy of section 5.4 of DB-OP-06316**

SAT UNSAT

8. PERFORMANCE STEP: Observe the EDG stops by 0 RPM indicated on the engine tachometer

STANDARD: Depress Emergency shutdown pushbutton on Panel C3621 and observe the engine tachometer indicator

CUE: **Engine speed indicates 0 RPM**

SAT UNSAT

9. PERFORMANCE STEP: Notify the Shift Manager

STANDARD: Communicate the emergency shutdown of EDG 1 to the Shift Manager via Gai-Tronics or radio

CUE: **Shift Manager acknowledges EDG 1 has been emergency shutdown**

SAT UNSAT

10. PERFORMANCE STEP: Verify the hydraulic governor is on the high speed stop

STANDARD: Raise hydraulic governor control and observe Speed Setting Knob is not turning (before and after setting has not changed)

CUE:
- **Hydraulic Gov Control switch has been placed in the RAISE position**
- **(If asked) Speed Setting reads as indicated**
- **(If asked) The Speed Setting Knob is not turning**

SAT UNSAT

11. PERFORMANCE STEP: Set the field to flash at 400 RPM

STANDARD: Field Flash switch moved to the 400 RPM position

CUE:
- **Field Flash switch has been moved to the 400 RPM position**
- **(If asked) The Shift Manager does not want EDG 1 to automatically start and gives you permission to operate locked valves as needed**

SAT UNSAT

12. PERFORMANCE STEP: Close EDG 1 air start valves
C

STANDARD: Unlock and close DA30

CUE: **DA30 has been unlocked: rotated CLOCKWISE; stem is DOWN**

SAT UNSAT

13. PERFORMANCE STEP: Close EDG 1 air start valves
C

STANDARD: Unlock and close DA44

CUE: **DA44 has been unlocked: rotated CLOCKWISE; stem is DOWN**

SAT UNSAT

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

END TIME

EXAMINER COPY

Train 2

INITIAL CONDITIONS:

The plant is at 100% power

Emergency Diesel Generator 1 is out of service for maintenance

A degraded grid condition exists and the control room has entered the abnormal procedure (DB-OP-02546 Degraded Grid Condition)

INITIATING CUES:

The Unit Supervisor directs you to emergency idle start Emergency Diesel Generator 2, in accordance with section 5.11 of DB-OP-06316, Diesel Generator Operating Procedure

(Provide the examinee a copy of section 5.11 of DB-OP-06316, will also need a copy of section 5.10 of DB-OP-06316 for issue later based upon cue)

(Hand Candidate a copy of Section 5.11 of DB-OP-06316, Diesel Generator Operating Procedure)

CANDIDATE COPY

Train 2

INITIAL CONDITIONS:

The plant is at 100% power

Emergency Diesel Generator 1 is out of service for maintenance

A degraded grid condition exists and the control room has entered the abnormal procedure (DB-OP-02546 Degraded Grid Condition)

INITIATING CUES:

The Unit Supervisor directs you to emergency idle start Emergency Diesel Generator 2, in accordance with section 5.11 of DB-OP-06316, Diesel Generator Operating Procedure

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: Verify CCW 2 or 3 as 2 is running

   STANDARD: Contact the Control Room

   CUE: **The Reactor Operator reports CCW Pump 2 is operating**

SAT UNSAT

---

2. PERFORMANCE STEP: Check for adequate CCW flow to EDG 2

   STANDARD: Visual check of FIS 1476

   CUE: **FIS 1476 indicates 900 GPM**

SAT UNSAT

---

3. PERFORMANCE STEP: Set the field to flash at 800 RPM
   C

   STANDARD: Field Flash switch moved to the 800 RPM position

   CUE: **Field Flash switch has been moved to the 800 RPM position**

SAT UNSAT

---

4. PERFORMANCE STEP: Idle start EDG 2
   C

   STANDARD: Depress Idle Start pushbutton on panel C3622A

   CUE: **EDG 2 starts and accelerates**
   EDG 2 speed indicates 450 RPM

SAT UNSAT

---

5. PERFORMANCE STEP: Check EDG 2 field is NOT flashed

   STANDARD: Visual check of Field Flashed light on Panel C3618

   CUE: **Red Field Flash light is LIT**

SAT UNSAT

---

6. PERFORMANCE STEP: Shutdown EDG 2
C

STANDARD: Emergency shutdown pushbutton on Panel C3622 is depressed

CUE: **Emergency shutdown pushbutton is DEPRESSED**
EDG 2 is shutting down
EDG 2 speed indicates 0 RPM

SAT UNSAT

7. PERFORMANCE STEP: Route to the correct procedure section

STANDARD: Identifies section 5.10 as the correct procedure section

CUE: **Provide the examinee a copy of section 5.10 of DB-OP-06316**

SAT UNSAT

8. PERFORMANCE STEP: Observe the EDG stops by 0 RPM indicated on the engine tachometer

STANDARD: Depress Emergency shutdown pushbutton on Panel C3622 and observe the engine tachometer indicator

CUE: **Engine speed indicates 0 RPM**

SAT UNSAT

9. PERFORMANCE STEP: Notify the Shift Manager

STANDARD: Communicate the emergency shutdown of EDG 2 to the Shift Manager via Gai-Tronics or radio

CUE: **Shift Manager acknowledges EDG 2 has been emergency shutdown**

SAT UNSAT

10. PERFORMANCE STEP: Verify the hydraulic governor is on the high speed stop

STANDARD: Raise hydraulic governor control and observe Speed Setting Knob is not turning (before and after setting has not changed)

CUE:
- **Hydraulic Gov Control switch has been placed in the RAISE position**
- **(If asked) Speed Setting reads as indicated**
- **(If asked) The Speed Setting Knob is not turning**

SAT UNSAT

11. PERFORMANCE STEP: Set the field to flash at 400 RPM

STANDARD: Field Flash switch moved to the 400 RPM position

CUE:
- **Field Flash switch has been moved to the 400 RPM position**
- **(If asked) The Shift Manager does not want EDG 2 to automatically start and gives you permission to operate locked valves as needed**

SAT UNSAT

12. PERFORMANCE STEP: Close EDG 2 air start valves
C

STANDARD: Unlock and close DA31

CUE: **DA31 has been unlocked: rotated CLOCKWISE; stem is DOWN**

SAT UNSAT

13. PERFORMANCE STEP: Close EDG 2 air start valves
C

STANDARD: Unlock and close DA45

CUE: **DA45 has been unlocked: rotated CLOCKWISE; stem is DOWN**

SAT UNSAT

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

END TIME

Verification of Completion

Job Performance Measure No. _____

Examinee's Name: _____

Examiner's Name: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: Satisfactory/Unsatisfactory

Examiner's signature and date: _____