Facility:	Davis-Besse	Task No.:	115-036-01-0100
Task Title:	Calculate a Shutdown Margin with 2 Stuck Rods	JPM No.:	2005 NRC RO A1-1
K/A Reference:	G 2.1.25 (2.8)		

Examinee: NRC Examiner:

Facility Evaluator: 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 is in Mode 3 following a Reactor trip.
- Two control rods failed to insert on the Reactor trip.
- The START program is NOT available.
- The plant is at 300 EFPD.
- RCS Boron Concentration is 2150 ppm.
- Tave is 532ºF.
- Transient Poison Worth is -0.27% ΔK/K.
- Reactivity worth of Anomaly is -0.13% ΔK/K.
- Boron Correction Factor is 0.96.

Task Standard: Calculate Shutdown Margin within the specified range.

Required Materials:

- Calculator
- Straight Edge
- DB-NE-06201, Reactor Operators Curve Book

General References:

- DB-NE-06202, Reactivity Balance Calculations
- DB-NE-06201, Reactor Operators Curve Book

Handouts: DB-NE-06202, Reactivity Balance Calculations

Initiating Cue: Perform a shutdown margin calculation in accordance with DB-NE-06202, Reactivity Balance Calculations.

Time Critical Task: No

Validation Time: 29 minutes

SIMULATOR SETUP

N/A

(Denote Critical Steps with a √)

Performance Step: 1 Locates current revision of DB-NE-06202.

Standard:

- Reviews procedure and determines Section 14 (use Attachment 10) applies.
- Transposes initial condition information onto Attachment 10 and adds Date/Time.

Comment:

Evaluator Cue: **Provide a copy of DB-NE-06202 after the initiating cue or after the procedure is located by the candidate.**

√ **Performance Step: 2** Determine minimum boron concentration to ensure 1% ΔK/K SDM.

Standard:

- Uses Figure 6C and determines value of 2040 to 2050 ppm.
- Enters value on Attachment 10.

Comment:

Performance Step: 3 Enter the value of the Corrected Boron Concentration Factor into the formula on Attachment 10.

Standard:

- Enters Boron Correction Factor (.96) from initial conditions.
- The candidate may elect to perform this part of the calculation either now or at the end by dividing the minimum boron concentration by the correction factor. The value should be 2125 to 2135 ppmB.

Comment:

Performance Step: 4 Enter the value of Reactivity Worth Anomaly into the formula on Attachment 10.

Standard: Enters a value of –0.13 %ΔK/K (from the initial conditions).

Comment:

Performance Step: 5 Determine the Corrected RCS Boron Concentration for use in determining the Differential Boron Worth.

Standard: Determines Corrected Boron Concentration to be 2064 ppm by multiplying the current RCS boron concentration (2150 ppm, from the initial conditions) by the Boron Correction Factor (0.96).

Comment:

Performance Step: 6 Determine Differential Boron Worth

Standard:

- Using Figure 5A, the Corrected RCS Boron Concentration, and the 300 EFPD line (from the initial conditions) determines Differential Boron Worth to be -0.00644 to -0.00646 %ΔK/K/ppmB.
- Enters value on Attachment 10.
- The candidate may elect to perform this part of the calculation either now or at the end by dividing the Reactivity Worth Anomaly (–0.13 %ΔK/K) by the Differential Boron Worth (-0.00644 to -0.00646 %ΔK/K/ppmB). The value should be 20.1 to 20.2.

Comment:

Performance Step: 7 Determine Transient Poison Boron Equivalent

Standard: Determines the Transient Poison Worth (-0.27, from the initial conditions). Multiplies that by Transient Poison Conversion Factor (85, from Table 1 of the Reactor Operators Curve Book). Divides that product by the Boron Correction Factor (.96, from the initial conditions) and then multiplies by -1.

Enters a value of 23.9 for B(tp) in the formula on Attachment 10.

Comment:

√ **Performance Step: 8** Determine minimum boron concentration to ensure 1% Shutdown Margin.

Standard: Determines minimum boron concentration to be 2080 to 2091 ppmB by performing the calculation on Attachment 10.

Comment:

Performance Step: 9 Completes Attachment 10

Standard: Signs, adds Date and Time on the “Calculated by” line.

Comment:

Terminating Cue: **When the completed Attachment 10 is handed to the Evaluator: This JPM is complete.**

VERIFICATION OF COMPLETION

Job Performance Measure No.: 2005 NRC RO A1-1

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:

Response:

Result: SAT _____ UNSAT _____

Examiner's Signature: _____ Date: _____

INITIAL CONDITIONS:

- The Plant is in Mode 3 following a Reactor trip.
- Two control rods failed to insert on the Reactor trip.
- The START program is NOT available.
- The plant is at 300 EFPD.
- RCS Boron Concentration is 2150 ppm.
- Tave is 532ºF.
- Transient Poison Worth is -0.27% ΔK/K.
- Reactivity worth of Anomaly is -0.13% ΔK/K.
- Boron Correction Factor is 0.96.

INITIATING CUE: Perform a shutdown margin calculation in accordance with DB-NE-06202, Reactivity Balance Calculations.

Facility: Davis-Besse | Task No.:

Task Title: Perform the RCS Hot Leg Level Monthly Channel Check | JPM No.: 2005 NRC JPM RO A1-2

K/A Reference: 2.1.19 3.0

Examinee: | NRC Examiner:

Facility Evaluator: | 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 unit is at 28% power.
PI RC2B3 indicates 2175 psig
PI RC2A3 indicates 2150 psig
TI RC3B6 indicates 588°F
TI RC3A6 indicates 588°F

Task Standard: Procedure completed with all critical tasks SAT.

Required Materials: Calculator

General References: DB-SC-03166, RCS Hot Leg Level Monthly Channel Check, Revision 03

Initiating Cue: You are an extra RO on the shift. The SRO has assigned you to complete DB-SC-03166, RCS Hot Leg Level Monthly Channel Check. Section 3.0 and Steps 4.1.1, 4.1.2, 4.2.1, 4.2.2, 5.1.1, 5.1.2, 5.1.3, 5.2.1, 5.2.2, and 5.2.3 have been signed off.

Time Critical Task: NO

Validation Time: 25 minutes

SIMULATOR SETUP

N/A

(Denote Critical Steps with a check mark)

START TIME: _____

Performance Step: 1 Reviews Limits and Precautions, signed/initiated steps.

Standard:

Comment:

Evaluator's Note: **Parameter values listed in this JPM may vary slightly from the actual recorded condition, based on simulator response/setup.**

Evaluator's Cue: **Provide handout after the Initiating Cue is read.**

Performance Step: 2 Verify the following Power Supply Switches are ON (switches are located in Cabinet C5762G):

a. TY 5450B (switch located behind door on TY 5450B)

b. Foxboro Power Supply Panel AA Switches

Verify the following Reference Leg Temperature Sensor Status LEDs are off (located in Cabinet C5762G; refer to Attachment 1, Thermal Detection Board LEDs):

a. SENSOR OPEN (LEDs located behind door on TY 5450B)

b. SENSOR SHORT (LEDs located behind door on TY 5450B)

Standard: No action required

Comment: **These steps (4.1.1 and 4.1.2) are initialed in the handout per the initiating cue.**

Performance Step: 3 Record the following Computer Point indications:

PPCS: P724, RCLOOP 1 HLG WR PRESS, SFAS CH 1

_____ psig

PPCS: T753, RC LOOP 1 HLG WR TEMP, CH 1

_____ °F

PPCS: T767, HLLMS LOOP 1 REF LEG TEMP, CH 1

_____ °F

PPCS: L720, HLLMS LOOP 1 HLG LVL, CH 1

_____ psid

Standard: Records:

- P724: 2165 ± 10 psig
- T753: 588 ± 5°F
- T767: 108 ± 2°F
- L720: -10 to –15 psid

Comment:

Performance Step: 4 Record the following CTRM indications:

PI RC2B3, REACTOR COOLANT PRESSURE LOOP 1 HOTLEG, SFAS CH3 (located on Panel C5716),

_____ psig

TI RC3B6, LOOP 1 T-HOT (located on Panel C5798)

_____°F

Standard: Records:

- PI RC2B3: 2175 ± 10 psig
- TI RC3B6: 588 ± 5°F

Comment:

Performance Step: 5 Verify the following Power Supply Switches are ON (switches are located in Cabinet C577H):

a. TY 5449B (switch located behind door on TY 5449B)

b. Foxboro Power Supply Panel AA Switches.

Verify the following Reference Leg Temperature Sensor Status LEDs are off (located in Cabinet C755H; refer to Attachment 1, Thermal Detection Board LEDs):

a. SENSOR OPEN (LEDS located behind door on TY 5449B)

b. SENSOR SHORT (LEDs located behind door on TY 5449B)

Standard: No action required

Comment: **These steps (4.2.1 and 4.2.2) are initiated in the handout per the initiating cue.**

Performance Step: 6 Record the following SPDS Computer Point indications:

MUXA: P732, RC LOOP 2 HLG WR PRESS, SFAS CH 2

_____ psig

MUXA: T782, RC LOOP 2 HLG WR TEMP, CH 1

_____ °F

MUXA: T768, HLLMS LOOP 2 REF LEG TEMP, CH 2

_____ °F

MUXA: L721, HLLMS LOOP 2 HLG LVL, CH 2

_____ psid

Standard: Records:

- P732: 2175 ± 10 psig
- T782: 588 ± 5°F
- T768: 113 ± 2°F
- L721: -10 to -15 psid

Comment:

Performance Step: 7 PI RC2A3, REACTOR COOLANT PRESSURE LOOP 2 HOT LEG, SFAS CH 4 (located on Panel C5716)

_____ psid

TI RC3A6, LOOP 2 T-HOT)located on Panel C5798)

_____ °F

Standard: Records:

- PI RC2A3: 2150 ± 10 psig
- TI RC3A6: 588 ± 5°F

Comment:

Performance Step: 8 Compare the Hot Leg Level Monitoring System RCS density correction Computer input values with other CTRM indications.

a. Determine the absolute value of the difference between Loop 1 RCS Hot Leg Pressure indications P724 and PI RC2B3 as follows:

P724 (Step 4.1.3.a) – PI RC2B3 (Step 4.1.4.a) = pressure comparison

_____ psig (-) _____ psig = _____ psig

(Tolerance ≤ 100 psig)

b. Determine the absolute value of the difference between Loop 2 RCS Hot Leg Pressure indications P732 and PI RC2A3 as follows:

P732 (Step 4.2.3.a) – PI RC2A3 (Step 4.2.4.a) = pressure comparison

_____ psig (-) _____ psig = _____ psig

(Tolerance ≤ 100 psig)

c. Determine the absolute value of the difference between Loop 1 RCS Hot Leg Temperature indications T753 and TI RC3B6, as follows:

T753 (Step 4.1.3.b) – TI RC3B6 (Step 4.1.4.b) = temp. comparison

_____ °F (-) _____ °F = _____ °F

(Tolerance ≤ 10°F)

d. Determine the absolute value of the difference between Loop 2 RCS Hot Leg Temperature indications T782 and TI RC3A6, as follows:

T782 (Step 4.2.3.b) – TI RC3AB6 (Step 4.2.4.b) = temp. comparison

_____ °F (-) _____ °F = _____ °F

(Tolerance ≤ 10°F)

Standard: Performs calculations:

a. ≤ 100 psig (Actual: 0 to –20 psig)

b. ≤ 100 psig (Actual: 0 to –20 psig)

c. ≤ 10°F (Actual +2 to –8°F)

d. ≤ 10°F (Actual +2 to –8°F)

Comment:

Performance Step: 9 Calculate RCS Hot Leg levels, as follows:

a. Determine RCS Loop 1 Calculated Hot Leg Level using the following formula:

$$\frac{76}{(.006 \text{ X TI RC3B6}) - .2} \text{ (-) } \frac{76}{(.0005 \text{ x T767}) + 2.273} \text{ (-) } 3.54 = \text{psid}$$

$$\frac{76}{(.006 \text{ x } _____) - .2} \text{ (-) } \frac{76}{(.0005 \text{ x } _____) + 2.273} \text{ (-) } 3.54 = ____\text{psid}$$

b. Determine RCS Loop 2 Calculated Hot Leg Level using the following formula:

$$\frac{76}{(.006 \text{ x TI RC3A6}) - .2} \text{ (-) } \frac{76}{(.0005 \text{ x T768}) + 2.273} \text{ (-) } 3.54 = \text{psid}$$

$$\frac{76}{(.006 \text{ x } _____) - .2} \text{ (-) } \frac{76}{(.0005 \text{ X } ____) + 2.273} \text{ (-) } 3.54 = ____\text{psid}$$

Standard: Performs calculations:

a. -13.0 to -14.0 psid

b. -13.0 to -14.0 psid

Comment:

Performance Step: 10 Compare the calculated Hot Leg Level input values to the actual Hot Leg Level Computer Point input values.

a. Determine the absolute value of the difference between the RCS Loop 1 Calculated Level and the L720 level indication as follows:

(Step 4.3.3.a) minus (Step 4.1.3.d) = level comparison

_____ psid (-) _____ psid = _____ psid

(Tolerance ≤ 1.21 psid)

b. Determine the absolute value of the difference between the RCS Loop 2 Calculated Level and the L721 level indication as follows:

(Step 4.3.3.b) minus (Step 4.2.3.d) = level comparison

_____ psid (-) _____ psid = _____ psid

(Tolerance ≤ 1.21 psid)

Standard: Performs calculations:

a. -1.21 to +1.21 psid

b. -1.21 to +1.21 psid

Comment:

√ **Performance Step: 11** Channel I

5.1.1 The following power supplies are energized (Cabinet C5762G):

a. TY 5450B (Step 4.1.1.a)

b. Foxboro Power Supply Panel AA (Step 4.1.1.b).

Verified by: _____ Date: _____

5.1.2 The SENSOR OPEN LED is off (Step 4.1.2.a).

Verified by: _____ Date: _____

5.1.3 The SENSOR SHORT LED is off (Step 4.1.2.b)

Verified by: _____ Date: _____

5.1.4 Computer Point P724, RC LOOP 1 HLG WR PRESS, SFAS CH 1, indicates within 100 psig of PI RC2B3 RC LOOP 1 HLG WR PRESS, SFAS CH 3 (Step 4.3.1.a).

Verified by: _____ Date: _____

5.1.5 Computer Point T573, RCLOOP 1 HLG WR TEMP, CH 1, indicates within 10°F of TI RC3B6, RC LOOP 1 HLG WR TEMP INDICATOR (Step 4.3.1.c).

Verified by: _____ Date: _____

5.1.6 The Loop 1 calculated Hot Leg Level is within 1.21 psid of the actual Computer Point value for L720 (Step 4.3.4.a). Mark N/A if only 3 RCPs are running.

Verified by: _____ Date: _____

Standard:

- 5.1.4, 5.1.5, 5.1.6: All signed and dated as verified within tolerance. (√)

Comment: **Steps 5.1.1, 5.1.2 and 5.1.3 are signed in the handout per the initiating cue.**

√ **Performance Step: 12**

5.2.1 The following power supplies are energized (Cabinet C57555H):

a. TY 5449B (Step 4.2.1.a)

b. Foxboro Power Supply Panel Aa (Step 4.2.1.b).

Verified by: _____ Date: _____

5.2.2 The SENSOR OPEN LED is off (Step 4.2.2.a).

Verified by: _____ Date: _____

5.2.3 The SENSOR SHORT LED is off (Step 4.2.2.b).

Verified by: _____ Date: _____

5.2.4 Computer Point P732, RC LOOP 2 HLG WR PRESS, SFAS CH 2, indicates within 100 psig of PI RC2A3 RC LOOP 2 HLG WR PRESS, SFAS CH 4 (Step 4.3.1.b).

Verified by: _____ Date: _____

5.2.5 Computer Point T782, RC LOOP 2 HLG WR TEMP, CH 1 indicates within 10°F of TI RC3A6, RC LOOP 2 HLG WR TEMP INDICATOR (Step 4.3.1.d).

Verified by: _____ Date: _____

5.2.6 the Loop 2 calculated Hot Leg Level is within 1.21 psid of the actual Computer Point value for L721 (Step 4.3.4.b). Mark N/A if only 3 RCPs are running.

Verified by: _____ Date: _____

Standard:

- Steps 5.2.1, 5.2.2 and 5.2.3 are signed in the handout per the initiating cue.
- 5.2.4, 5.2.5, 5.2.6: All signed and dated as verified within tolerance. (√)

Comment:

Terminating Cue: **After Section 5.2 has been completed, this JPM is complete.**

STOP TIME: _____

VERIFICATION OF COMPLETION

Job Performance Measure No.: 2005 NRC JPM RO A1-2

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:

Response:

Result: SAT _____ UNSAT _____

Examiner's Signature: _____ Date: _____

INITIAL CONDITIONS: The unit is at 28% power.
PI RC2B3 indicates 2175 psig
PI RC2A3 indicates 2150 psig
TI RC3B6 indicates 588°F
TI RC3A6 indicates 588°F

INITIATING CUE: You are an extra RO on the shift. The SRO has assigned you to complete DB-SC-03166, RCS HOT LEG LEVEL MONTHLY CHANNEL CHECK. Section 3.0 and Steps 4.1.1, 4.1.2, 4.2.1, 4.2.2, 5.1.1, 5.1.2, 5.1.3, 5.2.1, 5.2.2, and 5.2.3 have been signed off.

Facility:	Davis-Besse	Task No.:	073-002-02-0100
Task Title:	Perform the quarterly functional test of RE 5052C, CTMT Purge Exhaust Monitor, prior to initiation of a CTMT purge.	JPM No.:	2005 RO NRC JPM A3
K/A Reference:	2.3.9 (2.5/3.4)		

Examinee: NRC Examiner:

Facility Evaluator: 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:

- Preparations are in progress for initiating a containment purge.
- The containment purge system has been in operation on the containment for 65 minutes.
- RE 5052A, B, C, all are in service.

Task Standard: Functional test completed and component restored for operation.

Required Materials: None

General References:

- DB-SC-03227, Quarterly Functional Test of RE 5052A, B, C, CTMT Purge Exhaust Radiation Monitor, Rev 4
- DB-OP-06503, Containment Purge System Procedure, Rev. 11
- DB-OP-03012, Radioactive Gaseous Batch Release, Rev. 5

Handouts: DB-SC-03227 completed through Step 4.1.1.

Initiating Cue: Perform the quarterly functional test of RE 5052C in accordance with DB-SC-03227. Begin at Step 4.2. All Prerequisites and Equipment requirements are met and Step 4.1.1 has been correctly completed by another operator.

Time Critical Task: No

Validation Time: 12 minutes

SIMULATOR SETUP

- IC: Consistent with initiation of a containment purge.
- RE 5052 A, B, C in service.
- CTMT Purge Supply and Exhaust Fans #1 running on containment.

(Denote Critical Steps with a √)

Performance Step: 1 Review procedure.

Standard:

- Reviews Limits and Precautions.
- Verifies Section 3.0 completed.
- Verifies Step 4.1.1 completed.

Comment:

Evaluator Cue: **Provide prepared handout.**

Performance Step: 2 Verify Containment Purge System has been in continuous operation for a minimum of one hour - - - .

Standard: Checks initial conditions, if necessary.

Comment:

Performance Step: 3 Record current RI 5052C log ratemeter reading.

Standard: Locates meter and records the current reading.(~25 CPS)

Comment:

Performance Step: 4 Check High Voltage:

- Set Function Selector Switch to HV position.
- Record RI 5052C meter reading.

Standard:

- Selects HV on Function Selector Switch.
- Records displayed voltage reading. (~460 vac)

Comment:

Performance Step: 5 Check CAL response:

- Set Function Selector Switch to CAL position.
- Record RI 5052C meter reading (desired reading is 5E4 to 7E4).

Standard:

- Selects CAL on Function Selector Switch.
- Records displayed count reading. (~5E4 CPS)

Comment:

Performance Step: 6 Determine actual RI 5052C ALERT alarm setpoint, as follows:

- Set Function Selector Switch to CAL position.
- Depress and hold amber ALERT pushbutton.
- Read RI 5052C meter indication.
- Release ALERT pushbutton.
- Record RI 5052C ALERT setpoint.

Standard:

- Verifies Function Selector Switch selected to CAL position.
- Depresses amber ALERT pushbutton.
- Reads RI 5052C meter.
- Releases ALERT pushbutton.
- Records displayed setpoint. (~8000 CPS)

Comment:

√ **Performance Step: 7** Determine actual RI 5052C HIGH alarm setpoint, as follows:

- Depress and hold red HIGH pushbutton.
- Read RI 5052C meter indication.
- Release HIGH pushbutton.
- Record RI 5052C HIGH setpoint.
- Set Function Selector Switch to OPERATE (√).

Standard:

- Depresses and holds red HIGH pushbutton.
- Reads RI 5052C meter indication.
- Releases HIGH pushbutton.
- Records RI 5052C HIGH setpoint. (~12000 CPS)
- Selects OPERATE on Function Selector Switch.

Comment: **The critical step "Set Function Selector Switch to OPERATE (√)" can be performed at this point or at the last step of the JPM.**

√ **Performance Step: 8** Test Check Source response as follows:

- Depress and hold RI 5052C CS (Check Source) pushbutton.
- Observe RI 5052C meter for an upscale deflection.
- If an upscale deflection is observed, then release the CS pushbutton and mark Step 4.2.7.d N/A.

Standard:

- Depresses and holds RI 5052C CS (Check Source) pushbutton.
- Observes upscale deflection on RI 5052C and releases pushbutton.
- Marks 4.2.7.d.1, 2, 3 as N/A

Comment: **The following procedure NOTE and CAUTION statements apply to this step:**

- **High detector background radiation may mask Check Source function.**
- **Check Source actuation may initiate ALERT and/or HIGH alarms and cause equipment actuation.**
- **If Check Source trips Containment Purge System, CV 5061 will open requiring compliance with TS 3.9.12.**

√ **Performance Step: 9** Test Radiation Alarm response, as follows:

If RI 5052C HIGH alarm was NOT initiated by Check Source test, then depress RI 5052C TRIP TEST pushbutton (√) and hold for 30 seconds. (Mark N/A if RI 5052C HIGH alarm was initiated by Check Source test).

Check for the following system responses:

- RI 5052 ALERT (amber) lamp illuminates.
- RI 5052 HIGH (red) lamp illuminates.
- Computer Point R320 initiates.
- Containment Purge Supply Fan 1 stops
- Containment Purge Exhaust Fan 1 stops
- Locally check CV 5003A, CTMT PURGE SUPPLY FAN INLET DAMPER, closes.
- Locally check CV 5003B, CTMT PURGE SUPPLY FAN OUTLET DAMPER, closes.
- CV 5062, CTMT PURGE EXHAUST FAN INLET DAMPER, closes.
- CV 5061, CTMT PURGE EXHAUST TO EVS, opens.
- Locally check CV 5013, CTMT PURGE EXHAUST FAN OUTLET DAMPER, closes.

Standard:

- Verifies RI 5052 ALERT and HIGH lamps illuminated.
- Verifies Computer Point R320 initiated. (HIGH)
- Verifies Containment Purge Supply Fan (HIS 5003) and Exhaust Fan (HIS 5013) stopped. (Green Lites ON)
- Dispatches field operator to locally check CV 5003A, CV 5003B, and CV 5013, closed.
- Verifies CV 5062 closed (HIS 5062) and CV 5061 open (HIS 5061) on Honeywell Panel C6801.

Comment: **The critical task depress RI 5052C TRIP TEST pushbutton (√) is satisfied if the button is depressed long enough to actuate the listed interlocks.**

Evaluator Cue: **CV 5003A, CV 5003B, CV 5062, and CV 5013 are CLOSED.**

CV 5061 is OPEN

√ **Performance Step: 10** RI 5052C Restoration

Reset RI 5052C alarms by depressing the green FAIL/RESET pushbutton (√).

- Verify ALERT lamp is extinguished.
- Verify HIGH lamp is extinguished.
- Verify Computer Point R320 is reset.
- Verify RI 5052C Function Selector Switch is in OPERATE position.

Standard:

- Depresses FAIL/RESET pushbutton.
- Verifies ALERT and HIGH lamps extinguished.
- Verifies Computer Point R320 reset.
- Verifies OPERATE selected on Function Selector Switch.

Comment:

Terminating Cue: **When RI 5052C has been restored to operation then: This JPM is complete**

VERIFICATION OF COMPLETION

Job Performance Measure No.: 2005 RO NRC JPM A3

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:

Response:

Result: SAT _____ UNSAT _____

Examiner's Signature: _____ Date: _____

INITIAL CONDITIONS:

- Preparations are in progress for initiating a containment purge.
- The containment purge system has been in operation on the containment for 65 minutes.
- RE 5052A, B, C, all are in service.

INITIATING CUE: Perform the quarterly functional test of RE 5052C in accordance with DB-SC-03227. Begin at Step 4.2. All Prerequisites and Equipment requirements are met and Step 4.1.1 has been correctly completed by another operator.

Facility:	Davis-Besse	Task No.:	
Task Title:	Perform an off-site dose assessment using a nomogram.	JPM No.:	2005 RO NRC A4 (Bank JPM-072, modified)
K/A Reference:	2.4.39 (3.3)		

Examinee: NRC Examiner:

Facility Evaluator: 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:

- A loss of coolant accident has occurred.
- A release to the environment is in progress through the station vent.
- The DADS graphic terminal is out of service.
- RE 4598 AA/BA Channel 1 reads 4E-2 μCi/cc.
- Station Vent Flow Rate is 146 KCFM
- Lower ΔT (75-10 m) reads -0.7
- 10 m wind speed indicates 2 mph

Task Standard: Off-site dose calculation completed within acceptable range of values.

Required Materials: Straight Edge

General References: RA-EP-02240, OFFSITE DOSE ASSESSMENT, Rev. 1

Handouts: RA-EP-02240, ATTACHMENT 2 – Instructions For Offsite Dose Assessment Nomogram and associated Figure 1 (Nomogram).

Initiating Cue: The Shift Manager has directed you to calculate a projected offsite Total Effective Dose Equivalent (TEDE) rate for a station vent release by using the offsite dose assessment nomogram in accordance with RA-EP-02240, OFFSITE DOSE ASSESSMENT.

Time Critical Task: No

Validation Time: 13 minutes

SIMULATOR SETUP

N/A

(Denote Critical Steps with a √)

Performance Step: 1 Locate the correct procedure.

Standard: Identifies RA-EP-02240, Offsite Dose Assessment - ATTACHMENT 2 as the correct procedure.

Evaluator Cue: **Provide a copy of RA-EP-02240 Attachment 2, after the initiating cue or after the procedure is located by the candidate.**

Performance Step: 2 Record name, date and time on Nomogram.

Standard: Records information.

Comment:

Performance Step: 3 Determine the monitor reading.

Standard:

- Determines RE 4598 should be used.
- Reads value from RE 4598 in uCi/cc from initial conditions and plots **4E-2 uCi/cc** on Nomogram Scale B.

Comment:

Performance Step: 4 Determine Total Effective Dose Equivalent (TEDE) rates.

- Plot the flow rate on Scale A.

Standard: Plots/chooses **146 KCFM** on Nomogram Scale A.

Comment:

Performance Step: 5 Determine Total Effective Dose Equivalent (TEDE) rates.

- Determine the release rate.

Standard: Draw a straight line through the plotted points on Scale A and Scale B to intersect on Scale C. Determines Release Rate (Scale C) between 3 and 4 CI/SEC.

Comment:

Performance Step: 6 Determine Total Effective Dose Equivalent (TEDE) rates.

- Determine stability class.

Standard: Determines lower ΔT as read from initial conditions at **-0.7.** Plots Stability Class D on Nomogram Scale 1.

Comment:

Performance Step: 7 Determine Total Effective Dose Equivalent (TEDE) rates.

- Plot windspeed.

Standard: Determines windspeed from intial conditions at **2 mph.** Plots 2 mph on Nomogram Scale 2.

Comment:

Performance Step: 8 Determine Total Effective Dose Equivalent (TEDE) rates.

- Determine the X/Q value.

Standard: Draw a line through the plotted points on Scales 1 and 2 to intersect on Scale 3. Determines X/Q (Scale 3) between 1E-4 and 2E-4.

Comment:

√ **Performance Step: 9** Determine Total Effective Dose Equivalent (TEDE) rates.

- Determine the TEDE rate at the Site Boundary.

Standard: Draw a line through the plotted points on Scale 3 and Scale C to intersect on Scale 4 (Site Boundary TEDE rate). Determines Site Boundary TEDE rate is ≥0.5 to ≤0.9 REM/HR and logs on nomogram.

Comment:

√ **Performance Step: 10** Determine Total Effective Dose Equivalent (TEDE) rates.

- Determine TEDE rate at 2 miles.

Standard: Calculates 2 mile TEDE rate is ≥0.10 and ≤0.18 REM/HR by dividing Site Boundary TEDE rate by five and logs on nomogram.

Comment:

√ **Performance Step: 11** Determine Total Effective Dose Equivalent (TEDE) rates.

- Determine TEDE rate at 5 miles.

Standard: Calculates 5 mile TEDE rate is ≥0.033 and ≤0.060 REM/HR by dividing Site Boundary TEDE rate by 15 and logs on nomogram.

Comment:

√ **Performance Step: 12** Determine Total Effective Dose Equivalent (TEDE) rates.

- Determine TEDE rate at 10 miles.

Standard: Calculates 10 mile TEDE rate is ≥0.0125 and ≤0.023 REM/HR by dividing the Site Boundary TEDE rate by 40 and logs on nomogram.

Comment:

Terminating Cue:	**When the TEDE rate at 10 miles has been calculated: This JPM is complete.**

VERIFICATION OF COMPLETION

Job Performance Measure No.: 2005 RO NRC A4

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:

Response:

Result: SAT _____ UNSAT _____

Examiner's Signature: _____ Date: _____

INITIAL CONDITIONS:

- A loss of coolant accident has occurred.
- A release to the environment is in progress through the station vent.
- The DADS graphic terminal is out of service.
- RE 4598 AA/BA Channel 1 reads 4E-2 µCi/cc.
- Station Vent Flow Rate is 146 KCFM
- Lower ΔT (75-10 m) reads -0.7
- 10 m wind speed indicates 2 mph

INITIATING CUE:

The Shift Manager has directed you to calculate a projected offsite Total Effective Dose Equivalent (TEDE) rate for a station vent release by using the offsite dose assessment nomogram in accordance with RA-EP-02240, OFFSITE DOSE ASSESSMENT.

Facility:	Davis-Besse	Task No.:	115-013-01-0100
Task Title:	Review a prepared Estimated Critical Boron Concentration calculation prior to a plant startup.	JPM No.:	2005 SRO NRC A1-1
K/A Reference:	2.1.25 (3.1)		

Examinee: NRC Examiner:

Facility Evaluator: Date:

Method of testing: **This JPM can be performed in any setting where the required references are available.**

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 unit tripped from full power 13 hours ago when a feedwater regulating valve failed closed.
- A startup is planned in four hours.
- The START program is out of service.
- Core burnup is 400 EFPD.
- Tavg is 532 ˚F.
- APSR's are 30% withdrawn.
- Desired Rod Index is 25% on Group 7.
- The Reactivity Anomaly is ZERO.
- The Reactor Engineer reports that Transient Poison Worth at the time of startup will be -2.2 % ΔK/K.
- Correction Factor for Boron 10 Depletion is .96.

Task Standard: Errors identified and calculation corrected within specified tolerance.

Required Materials:

- Straight Edge
- Calculator
- Reactor Operators Curve Book

General References:

- DB-NE-06202, REACTIVITY BALANCE CALCULATIONS, Rev. 02
- DB-NE-06201, REACTOR OPERATORS CURVE BOOK, Rev. 07

Handouts:

- DB-NE-06202 initialed for Estimated Critical Boron Concentration Calculation.
- Completed DB-NE-06202, ATTACHMENT 2, with errors as noted in the body of this JPM.

Initiating Cue: Review the completed DB-NE-06202, ATTACHMENT 2 – Estimated Critical Boron Concentration.

Time Critical Task: NO

Validation Time: 22 minutes

SIMULATOR SETUP

N/A

(Denote Critical Steps with a √)

Performance Step: 1 Reviews handout

Standard: Verifies initial conditions transposed correctly.

Evaluator Note: **It is acceptable for the candidate to do their own calculation.**
Comment:
Evaluator Cue: **Provide handout to candidate.**

Performance Step: 2 Determine reactivity worth of the fuel.

Standard: Using Figure 2 verifies between 11.1 and 11.2 % ΔK/K as correct.

Comment:

Performance Step: 3 Determine reactivity worth of the transient poisons.

Standard: Verifies -2.2 % ΔK/K correct, per initial conditions.

Comment:

√ **Performance Step: 4** Determine reactivity worth of Groups 5-7.

Standard:

- Determines incorrect curve (Figure 9A) utilized.
- Using Figure 9B, logs .70 to .72 % ΔK/K. (√)

Comment:
Evaluator Cue: **If the candidate stops after finding this error: Review the entire attachment and complete the calculation using your own values.**

√ **Performance Step: 5** Determine reactivity worth of the APSRs.

Standard:

- Using Figure 11A, logs between -.115 and -.12.
- Identifies incorrect sign in calculation.

Comment: **The critical task is satisfied if the candidate has the correct sign in their own calculation.**

Performance Step: 6 Determine reactivity anomaly worth.

Standard: Verifies ZERO, per initial conditions.

Comment:

Performance Step: 7 Calculate boron reactivity worth.

Standard: Calculates boron worth between -8.06 and -8.19 % ΔK/K.

Comment:

Performance Step: 8 Determine corrected boron reactivity worth.

Standard:

- Using Figure 4, verifies Correction Factor for Fuel Burnup between 1.084 and 1.086.
- Verifies Boron 10 Correction Factor as .96, per initial conditions.
- Performs calculation and logs -7.73 to -7.87 % ΔK/K.

Comment:

√ **Performance Step: 9** Determine estimated critical boron concentration.

Standard: Using Figure 3, logs between 1180 and 1215 PPM

Comment:

√ **Performance Step: 10** Determine the upper rod index limit.

Standard: Performs algebraic addition of .5 % ΔK/K and determines UPPER LIMIT ≤288 RI.

Comment:

√ **Performance Step: 11** Determine the lower rod index limit.

Standard: Performs algebraic subtraction of .5 % ΔK/K and determines LOWER LIMIT ≥170 RI.

Comment:

Terminating Cue: After the candidate has calculated the LOWER LIMIT and/or signed the attachment: This JPM is complete.

VERIFICATION OF COMPLETION

Job Performance Measure No.: 2005 SRO NRC A1-1

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:

Response:

Result: SAT _____ UNSAT _____

Examiner's Signature: _____ Date: _____

INITIAL CONDITIONS:

- The unit tripped from full power 13 hours ago when a feedwater regulating valve failed closed.
- A startup is planned in four hours.
- The START program is out of service.
- Core burnup is 400 EFPD.
- Tavg is 532 ˚F.
- APSR's are 30% withdrawn.
- Desired Rod Index is 25% on Group 7.
- The Reactivity Anomaly is ZERO.
- The Reactor Engineer reports that Transient Poison Worth at the time of startup will be -2.2 % ΔK/K.
- Correction Factor for Boron 10 Depletion is .96.

INITIATING CUE: Review the completed DB-NE-06202, ATTACHMENT 2 – Estimated Critical Boron Concentration.

Facility:	Davis-Besse	Task No.:	333-011-01-0300
Task Title:	Determine and evaluate axial power imbalance with Group 38 alarms inoperable.	JPM No.:	2005 SRO NRC JPM A1-2
K/A Reference:	2.1.12 (4.0)		

Examinee: NRC Examiner:

Facility Evaluator: Date:

Method of testing: **This JPM can be performed in the simulator or control room.**

Simulated Performance: _____ Actual Performance: X

Classroom _____ Simulator X 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:

- Power was rapidly reduced from 100% to 70% due to a major problem on the electrical grid.
- Core burnup is at 480 EFPD.
- All Reactor Coolant Pumps are operating.
- The plant computer "locked up" during the power reduction and cannot be re-booted.
- Group 38 is inoperable.
- Annunciator 5-4-E, TILT IMBALANCE ROD INS LIMITS has alarmed

Task Standard: Performs DB-NE-03220, ATT. 1 and enters action statement for TS 3.2.1.

Required Materials: Technical Specifications/COLR

General References:

- Technical Specifications/COLR
- DB-NE-03220, Imbalance, Tilts and Rod Index Calculations – Group 38 Alarms Inoperable, Rev. 4

Handouts: DB-NE-03220

Initiating Cue: The Shift Manager directs you to implement the required actions for the inoperable Axial Power Imbalance alarm.

Time Critical Task: No

Validation Time: 12 minutes

SIMULATOR SETUP

N/A

(Denote Critical Steps with a √)

Performance Step: 1 Determine procedure to be implemented.

Standard: Determines DB-NE-03220, ATTACHMENT 1 applies.

Comment:

Evaluator Cue: **Provide a copy of DB-NE-03220 after the candidate determines that it applies.**

Performance Step: 2 Reviews ATT. 1 Prerequisites.

Standard: Determines that a source of API measurement and % FP is operable on the control board.

Comment: **Procedure NOTE 1.1 precedes this step: "A minimum of three NI Imbalance channels shall be operable per TS 3.3.1.1."**

Evaluator Cue: **If necessary: All control board NI Imbalance and %FP channels are operable.**

Performance Step: 3 Record what is inoperable and why it is inoperable.

Standard: Logs API alarm inoperable because the computer is not operating.

Comment:

Performance Step: 4 Record the EFPD

Standard: Logs 480.

Comment:

Performance Step: 5 Record on Table 1.2, Verification of Axial Power Imbalance:

- Time

Standard: Logs current time.

Comment: **Procedure NOTE 2.3 precedes this step: "API shall be determined to be within limits at least once per hour. Repeat Steps 2.3 and 2.4 at least once per hour until the API alarm is declared operable."**

Evaluator Cue: **If necessary: Acknowledge the requirement to perform hourly.**

Performance Step: 6 Record on Table 1.2, Verification of Axial Power Imbalance:

- % FP Source

Standard: Logs "d."

Comment:

Evaluator Cue: **Locate and use control room indicators for all Table 1.2 readings. I will provide a cue after the indicator is located.**

Performance Step: 7 Record on Table 1.2, Verification of Axial Power Imbalance:

- % FP

Standard:

- Logs 70%.

Comment:

Evaluator Cue: **If necessary: Reactor power is 70%.**

Performance Step: 8 Record on Table 1.2, Verification of Axial Power Imbalance:

- API Source

Standard: Logs "d."

Comment:

Performance Step: 9 Record on Table 1.2, Verification of Axial Power Imbalance:

- API

Standard:

- Logs -34% for each channel.

Comment:

Evaluator Cue: **Channels NI5, NI6, NI7, and NI8 all read minus 34%.**

√ **Performance Step: 10** Record on Table 1.2, Verification of Axial Power Imbalance:

- Excore Limits, COLR.

Standard:

- Determines COLR, Figure 4b applies.
- Logs -30% and ≤ +23% as the limit.

Comment:

√ **Performance Step: 11** Compare the API to the API limit and initial within Limits block on Table 1.2.

- Within limits YES/NO

Standard:

- Logs initials in NO column.
- Recognizes NOTE 2.4 applies.

Comment: **NOTE 2.4: If the API is <u>NOT</u> within the limits refer to Technical Specification 3.2.1.**

The candidate may sign and date the log at this time.

√ **Performance Step: 12** Reviews TS 3.2.1.

Standard: Recognizes TS applies (Mode 1, >40% power) and enters TSAS.

a. Restore API to within the limits provided in the COLR within 15 minutes, or

b. Within one hour reduce power until imbalance limits provided in the COLR are met or to 40% of rated thermal power or less.

Comment:

Evaluator Cue:

- **If the candidate begins actions to make a log entry: Report your recommendation to the Shift Manager.**
- **Provide repeatback, as necessary.**

Terminating Cue: After the candidate makes the report to the Shift Manager: This JPM is complete.

VERIFICATION OF COMPLETION

Job Performance Measure No.: 2005 SRO NRC JPM A1-2

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:

Response:

Result: SAT _____ UNSAT _____

Examiner's Signature: _____ Date: _____

INITIAL CONDITIONS:

- Power was rapidly reduced from 100% to 70% due to a major problem on the electrical grid.
- Core burnup is at 480 EFPD.
- All Reactor Coolant Pumps are operating.
- The plant computer “locked up” during the power reduction and cannot be re-booted.
- Group 38 is inoperable.
- Annunciator 5-4-E, TILT IMBALANCE ROD INS LIMITS has alarmed.

INITIATING CUE: The Shift Manager directs you to implement the required actions for the inoperable Axial Power Imbalance alarm.

Facility:	Davis-Besse	Task No.:	331-026-03-0300
Task Title:	Initiate tracking of a Spent Fuel Negative Pressure Area Barrier in accordance with DB-OP-00018, Inoperable Equipment Tracking Log.	JPM No.:	2005 NRC SRO A2
K/A Reference:	2.2.24 (3.8)		

Examinee: NRC Examiner:

Facility Evaluator: Date:

Method of testing: **This JPM can be completed in any location.**

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:
- A plant heatup is in progress.
- The Shift Manager has determined a need to reduce pressure in Containment.

Task Standard: Negative pressure barrier impairment identified and logged.

Required Materials: None

General References: DB-OP-00018, Inoperable Equipment Tracking Log
DB-OP-03012, Radioactive Gaseous Batch Release

Handouts:
- Copy of DB-OP-03012
- DB-OP-00018

Initiating Cue: You are the Field Supervisor
The Shift Manager Directs you to perform an Operability Determination for the Spent Fuel Pool EVS in accordance with step 4.4.3.a of DB-OP-03012.

Time Critical Task: No

Validation Time:

SIMULATOR SETUP

N/A

(Denote Critical Steps with a √)

Performance Step: 1 Reviews DB-OP-03012.

Standard:
- May refer to DB-OP-00018.
- Determines that a negative pressure barrier will be impaired during the relaese.

Comment:

Evaluator Cue:
- **Provide the candidate with a copy of DB-OP-03012 after the initial conditions have been read.**
- **Provide the candidate with a copy of DB-OP-00018 when it is determined that the procedure applies.**

Performance Step: 2 Reviews DB-OP-00018

Standard:
- Determines Section 6.3 applies.
- Determines Attachment 2, Inoperable Barrier Tracking Log Sheet, must be completed.

Comment: **Attachment 2 is a sample. Provide a copy of form DB-0574, Spent Fuel Pool EVS**

√ **Performance Step: 3** Completes DB-0574.
- BARRIER ID #
- DESCRIPTION

Standard:
- Logs barrier ID # **FD 1174** in the BARRIER ID column (*)
- Enters **Radioactive Waste System Access Port** in the DESCRIPTION column (*)

Comment: **(*) Either the BARRIER ID or DESCRIPTION must be accurate for critical task completion.**

Evaluator Cues: **Use more than one row on the log for documentation, if necessary.**

Performance Step: 4 Completes DB-0574.

- DOCUMENT NUMBER - DB-OP-03012

Standard: Enters **DB-OP-03012** in DOCUMENT NUMBER column

Comment:

√ **Performance Step: 5** Completes DB-0574.

- BARRIER OPERABLE

Standard: Enters **NO** in BARRIER OPERABLE column

Comment:

√ **Performance Step: 6** Completes DB-0574.

- SIZE OF HOLE

Standard: Enters **120** square inches in SIZE OF HOLE column

Comment:
Evaluator Cue:

Performance Step: 7 Completes DB-0574.

- ENGINEERING NOTIFIED
- ENG EVAL/50.59 SCREEN REQUIRED

Standard:

- Enters **NO or N/A** in ENGINEERING NOTIFIED column
- Enters **NO** in SAFETY EVAL REQUIRED column

Comment:
Evaluator Cue:

Performance Step: 8 Completes DB-0574.

- DATE/TIME ENTERED INITIALS

Standard: Enters **current date and time and initials** in DATE/TIME ENTERED INITIALS column.

Comment:

√ **Performance Step: 9** IAW step 6.3.3 of DB-OP-00018, recognizes the cumulative void area for the SFP ventilation exceeds 280 square inches

Standard: Informs the Shift Manager or recognizes the need to enter Tech Spec 3.9.12 during the release

Comment:

Terminating Cue: **When the candidate provides the log sheet to the Shift Manager or enters Tech Spec 3.9.12:**

This JPM is complete.

VERIFICATION OF COMPLETION

Job Performance Measure No.: 2005 NRC SRO A2

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:

Response:

Result: SAT _____ UNSAT _____

Examiner's Signature: _____ Date: _____

INITIAL CONDITIONS:

- A plant heatup is in progress.
- The Shift Manager has determined a need to reduce pressure in Containment.

INITIATING CUE:

You are the Field Supervisor

The Shift Manager Directs you to perform an Operability Determination for the Spent Fuel Pool EVS in accordance with step 4.4.3.a of DB-OP-03012.

Facility:	Davis-Besse	Task No.:	073-002-02-0100
Task Title:	Perform the quarterly functional test of RE 5052C, CTMT Purge Exhaust Monitor, prior to initiation of a CTMT purge.	JPM No.:	2005 SRO NRC JPM A3
K/A Reference:	2.3.9 (2.5/3.4)		

Examinee: NRC Examiner:

Facility Evaluator: 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:

- Preparations are in progress for initiating a containment purge.
- The containment purge system has been in operation on the containment for 65 minutes.
- RE 5052A, B, C, all are in service.

Task Standard: Functional test completed and component restored for operation.

Required Materials: None

General References:

- DB-SC-03227, Quarterly Functional Test of RE 5052A, B, C, CTMT Purge Exhaust Radiation Monitor, Rev 4
- DB-OP-06503, Containment Purge System Procedure, Rev. 11
- DB-OP-03012, Radioactive Gaseous Batch Release, Rev. 5

Handouts: DB-SC-03227 completed through Step 4.1.1.

Initiating Cue: Perform the quarterly functional test of RE 5052C in accordance with DB-SC-03227. Begin at Step 4.2. All Prerequisites and Equipment requirements are met and Step 4.1.1 has been correctly completed by another operator.

Time Critical Task: No

Validation Time: 12 minutes

SIMULATOR SETUP

- IC: Consistent with initiation of a containment purge.
- RE 5052 A, B, C in service.
- CTMT Purge Supply and Exhaust Fans #1 running on containment.

(Denote Critical Steps with a √)

Performance Step: 1 Review procedure.

Standard:

- Reviews Limits and Precautions.
- Verifies Section 3.0 completed.
- Verifies Step 4.1.1 completed.

Comment:

Evaluator Cue: **Provide prepared handout.**

Performance Step: 2 Verify Containment Purge System has been in continuous operation for a minimum of one hour - - - .

Standard: Checks initial conditions, if necessary.

Comment:

Performance Step: 3 Record current RI 5052C log ratemeter reading.

Standard: Locates meter and records the current reading.(~25 CPS)

Comment:

Performance Step: 4 Check High Voltage:

- Set Function Selector Switch to HV position.
- Record RI 5052C meter reading.

Standard:

- Selects HV on Function Selector Switch.
- Records displayed voltage reading. (~460 vac)

Comment:

Performance Step: 5 Check CAL response:

- Set Function Selector Switch to CAL position.
- Record RI 5052C meter reading (desired reading is 5E4 to 7E4).

Standard:

- Selects CAL on Function Selector Switch.
- Records displayed count reading. (~5E4 CPS)

Comment:

Performance Step: 6 Determine actual RI 5052C ALERT alarm setpoint, as follows:

- Set Function Selector Switch to CAL position.
- Depress and hold amber ALERT pushbutton.
- Read RI 5052C meter indication.
- Release ALERT pushbutton.
- Record RI 5052C ALERT setpoint.

Standard:

- Verifies Function Selector Switch selected to CAL position.
- Depresses amber ALERT pushbutton.
- Reads RI 5052C meter.
- Releases ALERT pushbutton.
- Records displayed setpoint. (~8000 CPS)

Comment:

√ **Performance Step: 7** Determine actual RI 5052C HIGH alarm setpoint, as follows:

- Depress and hold red HIGH pushbutton.
- Read RI 5052C meter indication.
- Release HIGH pushbutton.
- Record RI 5052C HIGH setpoint.
- Set Function Selector Switch to OPERATE (√).

Standard:

- Depresses and holds red HIGH pushbutton.
- Reads RI 5052C meter indication.
- Releases HIGH pushbutton.
- Records RI 5052C HIGH setpoint. (~12000 CPS)
- Selects OPERATE on Function Selector Switch.

Comment: **The critical step "Set Function Selector Switch to OPERATE (√)" can be performed at this point or at the last step of the JPM.**

√ **Performance Step: 8** Test Check Source response as follows:

- Depress and hold RI 5052C CS (Check Source) pushbutton.
- Observe RI 5052C meter for an upscale deflection.
- If an upscale deflection is observed, then release the CS pushbutton and mark Step 4.2.7.d N/A.

Standard:

- Depresses and holds RI 5052C CS (Check Source) pushbutton.
- Observes upscale deflection on RI 5052C and releases pushbutton.
- Marks 4.2.7.d.1, 2, 3 as N/A

Comment: **The following procedure NOTE and CAUTION statements apply to this step:**

- **High detector background radiation may mask Check Source function.**
- **Check Source actuation may initiate ALERT and/or HIGH alarms and cause equipment actuation.**
- **If Check Source trips Containment Purge System, CV 5061 will open requiring compliance with TS 3.9.12.**

√ **Performance Step: 9** Test Radiation Alarm response, as follows:

If RI 5052C HIGH alarm was NOT initiated by Check Source test, then depress RI 5052C TRIP TEST pushbutton (√) and hold for 30 seconds. (Mark N/A if RI 5052C HIGH alarm was initiated by Check Source test).

Check for the following system responses:

- RI 5052 ALERT (amber) lamp illuminates.
- RI 5052 HIGH (red) lamp illuminates.
- Computer Point R320 initiates.
- Containment Purge Supply Fan 1 stops
- Containment Purge Exhaust Fan 1 stops
- Locally check CV 5003A, CTMT PURGE SUPPLY FAN INLET DAMPER, closes.
- Locally check CV 5003B, CTMT PURGE SUPPLY FAN OUTLET DAMPER, closes.
- CV 5062, CTMT PURGE EXHAUST FAN INLET DAMPER, closes.
- CV 5061, CTMT PURGE EXHAUST TO EVS, opens.
- Locally check CV 5013, CTMT PURGE EXHAUST FAN OUTLET DAMPER, closes.

Standard:

- Verifies RI 5052 ALERT and HIGH lamps illuminated.
- Verifies Computer Point R320 initiated. (HIGH)
- Verifies Containment Purge Supply Fan (HIS 5003) and Exhaust Fan (HIS 5013) stopped. (Green Lites ON)
- Dispatches field operator to locally check CV 5003A, CV 5003B, and CV 5013, closed.
- Verifies CV 5062 closed (HIS 5062) and CV 5061 open (HIS 5061) on Honeywell Panel C6801.

Comment: **The critical task depress RI 5052C TRIP TEST pushbutton (√) is satisfied if the button is depressed long enough to actuate the listed interlocks.**

Evaluator Cue: **CV 5003A, CV 5003B, CV 5062, and CV 5013 are CLOSED.**

CV 5061 is OPEN

√ **Performance Step: 10** RI 5052C Restoration

Reset RI 5052C alarms by depressing the green FAIL/RESET pushbutton (√).

- Verify ALERT lamp is extinguished.
- Verify HIGH lamp is extinguished.
- Verify Computer Point R320 is reset.
- Verify RI 5052C Function Selector Switch is in OPERATE position.

Standard:

- Depresses FAIL/RESET pushbutton.
- Verifies ALERT and HIGH lamps extinguished.
- Verifies Computer Point R320 reset.
- Verifies OPERATE selected on Function Selector Switch.

Comment:

Terminating Cue: **When RI 5052C has been restored to operation then: This JPM is complete**

VERIFICATION OF COMPLETION

Job Performance Measure No.: 2005 SRO NRC JPM A3

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:

Response:

Result: SAT _____ UNSAT _____

Examiner's Signature: _____ Date: _____

INITIAL CONDITIONS:

- Preparations are in progress for initiating a containment purge.
- The containment purge system has been in operation on the containment for 65 minutes.
- RE 5052A, B, C, all are in service.

INITIATING CUE: Perform the quarterly functional test of RE 5052C in accordance with DB-SC-03227. Begin at Step 4.2. All Prerequisites and Equipment requirements are met and Step 4.1.1 has been correctly completed by another operator.

Facility:	Davis-Besse	Task No.:	334-004-05-0300
Task Title:	Evaluate an off-site dose projection and make a PAR	JPM No.:	2005 SRO NRC A4
K/A Reference:	2.4.44 (4.0)		

Examinee: NRC Examiner:

Facility Evaluator: 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:

- A LOCA has occurred.
- Some fuel damage has occurred but a core melt sequence is NOT in progress.
- A General Emergency is currently in effect.
- A release from the station vent is in progress via unseated containment isolation dampers.
- The wind is from 290˚.
- SPDS has failed.
- DADS is out of service.
- An offsite dose assessment has been completed using a nomogram in accordance with RA-EP-02240, ATTACHMENT 2.

Task Standard: PAR determined within critical task boundaries.

Required Materials: None

General References:

- RA-EP-02240, ATTACHMENT 2, INSTRUCTIONS FOR OFFSITE DOSE ASSESSMENT NOMOGRAM, Rev. 2
- RA-EP-02245, PROTECTIVE ACTION GUIDELINES, Rev. 3
- RA-EP-02110, EMERGENCY NOTIFICATION, Rev. 6
- RA-EP-01900, GENERAL EMERGENCY

Handouts:

- RA-EP-01900 initialed up to step 6.3
- Completed nomogram indicating 3 Rem at the Site Boundary.
- RA-EP-02245 with all 6.1.1 steps initialed
- RA-EP-02110
- DBEP-010, Initial Notification Form

Initiating Cue:	You are the Emergency Director. RA-EP-01900, General Emergency has been completed up to step 6.3. Evaluate the offsite dose assessment and initiate required actions.
Time Critical Task:	YES (15 minutes)
Validation Time:	9 minutes

SIMULATOR SETUP

N/A

(Denote Critical Steps with a √)

Performance Step: 1 Review step 6.3 of RA-EP-01900

Standard: Recognize need to implement of RA-EP-02245.

Comment: **Mark the time when the candidate begins: _____.**

Evaluator Cue: **When the candidate recognizes RA-EP-02245 applies then provide a copy of that procedure.**

√ **Performance Step: 2** Review RA-EP-02245

Standard: Reviews step 6.1, Onsite Protective Actions

Comment:

Evaluator Cue: **Step 6.1 actions have been completed**

Performance Step: 3 Perform RA-EP-02245 step 6.2 actions

Standard: Recognize the need to refer to RA-EP-02245 Attachment 1

Comment:

Performance Step: 4 Follows Attachment 1 flow path

Standard: General Emergency declared? Yes
Core Melt sequence? No
Station isolation? No
Release in progress? Yes
Release terminable? No
> 1 rem at 5 miles? No

Comment: **Provide a copy of the completed nomogram**

Evaluator Cue: **Assume that the nomogram has been completed correctly.**

√ **Performance Step: 5** Determines offsite protective action recommendations

Standard: Circles areas 1, 6 and 12 under column A, on page 2 of Attachment 1

Comment:

Performance Step: 5 Perform RA-EP-02245 step 6.2 actions

Standard: Returns to step 6.2.2

Comment:

Performance Step: 6 Route to RA-EP-02110, Emergency Notification

Standard: Implements RA-EP-02110

Comment: **Provide a copy of RA-EP-02110 and Initial Notification Form DBEP-010.**

Evaluator Cue: **Step 6.1 of RA-EP-02110 has been completed**

√ **Performance Step: 7** Completes Initial Notification Form

Standard:

1. Check "Control Room"
2. Check "Actual Emergency" or “Drill”
3.a - Check "General Emergency"
   - Enter time and date
   - Enter E.A.L. 6.D.6
4. Enter event description
5. Check box "c"
6. - Check box "c"
   - Circle 1, 6 and 12
7. Check "Actual Emergency" or “Drill”

Comment:

Evaluator Cue:

Terminating Cue: When the candidate turns over the Initial Notification Form: This JPM is complete

VERIFICATION OF COMPLETION

Job Performance Measure No.: 2005 SRO NRC A4

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:

Response:

Result: SAT _____ UNSAT _____

Examiner's Signature: _____ Date: _____

INITIAL CONDITIONS:

- A LOCA has occurred.
- Some fuel damage has occurred but a core melt sequence is NOT in progress.
- A General Emergency is currently in effect.
- A release from the station vent is in progress via unseated containment isolation dampers.
- The wind is from 290˚.
- SPDS has failed.
- DADS is out of service.
- An offsite dose assessment has been completed using a nomogram in accordance with RA-EP-02240, ATTACHMENT 2.

INITIATING CUE:

You are the Emergency Director.
RA-EP-01900, General Emergency has been completed up to step 6.3.

Evaluate the offsite dose assessment and initiate required actions.