

Facility: Davis-BesseTask No: 115-036-01-0100Task Title: Calculate a Shutdown Margin with 2 Stuck RodsK/A Reference: 192002-K1.13 3.5/3.7Job Performance Measure No: RO A

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 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 100 EFPD, Boron Concentration is 2390 ppmB, Tave is 532°F, Transient Poison Worth is -0.27% $\Delta K/K$, Reactivity worth of Anomaly is -0.13% $\Delta K/K$, Boron Correction Factor is 0.96.

Task Standard: Calculate Shutdown Margin with 2 stuck control rods

Required Materials: Calculator

General References: DB-NE-06202, Reactivity Balance Calculations, DB-NE-06201, Reactor Operators Curve Book, and Core Operating Limits Report

Initiating Cue: The Unit Supervisor directs you to perform a Shutdown Margin Calculation in accordance with section 14 of DB-NE-06202, Reactivity Balance Calculations.

Time Critical Task: NO

Validation Time: 29 Minutes

Initiating Cue

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.

Burnup: 100 EFPD

Boron Concentration: 2390 ppmB

Tave: 532°F.

Transient Poison Worth: -0.27% $\Delta K/K$

Reactivity worth of Anomaly: -0.13% $\Delta K/K$

Boron Correction Factor: 0.96.

The Unit Supervisor directs you to perform a Shutdown Margin Calculation in accordance with section 14 of DB-NE-06202, Reactivity Balance Calculations.

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

1. Performance Step: Determine minimum boron to ensure 1% $\Delta K/K$ SDM.

✓

Standard: From figure 6C, determine value of 2320 to 2340 ppmB and enter on Attachment 6.

Comment: Actual value should be 2325 ppmB.

2. Performance Step: Determine value of corrected boron concentration.

✓

Standard: Divide the RCS boron concentration (2325 ppmB) by the Boron Correction Factor (.96) to obtain a value of 2416 to 2438 ppmB.

Comment: Actual value should be 2325 ppmB divided by 0.96 for a final value of 2422 ppmB.

3. Performance Step: Enter the value of Reactivity Worth Anomaly.

✓

Standard: Enter a value of $-0.13\% \Delta K/K$, from the initial conditions.

Comment: None

4. Performance Step: Determine corrected RCS boron concentration.

✓

Standard: Multiply the RCS boron of 2390 ppmB by the Boron Correction Factor of 0.96 for a final value of 2294.4 ppmB.

Comment: None

5. Performance Step: Determine Differential Boron Worth

✓

Standard: From Figure 5A determine a value of -0.00612 to $-0.00616\% \Delta K/K/ppmB$ using the corrected RCS boron concentration of 2294.4 ppmB and enter on Attachment 10.

Comment: Actual value of $-0.00614\% \Delta K/K/ppmB$.

6. Performance Step: Determine the corrected Anomaly Worth

√

Standard: Divide the Reactivity Worth Anomaly ($-0.13\ \% \Delta K/K$) by the Differential Boron Worth (-0.00612 to $-0.00616\ \% \Delta K/K/ppmB$) to obtain a value of 21.1 to 21.3

Comment: Actual value of 21.17

7. Performance Step: Determine Transient Poison Boron Equivalent

√

Standard: Multiply Transient Poison Worth (-0.27) and Transient Poison Conversion Factor (85) then divide by the Boron Correction Factor ($.96$) to obtain a value of 23.9. Enter on Attachment 10.

Comment: None

8. Performance Step: Determine minimum boron concentration to ensure 1% Shutdown Valve.

√

Standard: Calculate minimum boron for 1% SDV on Attachment 10 to obtain a value of 2274 to 2285 ppmB.

Comment: Actual value of 2377 ppmB.

Terminating Cues: This JPM is complete.

VERIFICATION OF COMPLETION

Job Performance Measure No. RO A

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question: _____

Response: _____

Result: SAT or UNSAT

Examiner's signature and date: _____

JPM RO A
Simulator Instructions

If performed on the simulator, this JPM can setup at any IC

Facility: Davis-BesseTask No: 119-004-03-0400Task Title: Control of Locked Valves During Post-Maintenance TestingK/A Reference: GEN 2.2.12 3.0/3.4Job Performance Measure No: RO_C

Examinee: _____

NRC Examiner: _____

Facility Evaluator: _____

Date: _____

Method of testing:Simulated Performance X

Actual Performance _____

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: Maintenance has completed a packing adjustment on valve DH2736, DH Aux. Spray Throttle Valve, to stop a packing leak per Order 200001155.

Task Standard: Stroke and time DH2736 and make the appropriate locked valve log entries.

Required Materials: Pump and Valve Basis Document, Stop watch and Locked Valve Log

General References: DB-PF-03272, Post Maintenance Valve Test, DB-OP-00008, Operation and Control of Locked Valves

Initiating Cue: The Unit Supervisor directs you to perform post maintenance valve testing of DH2736 in accordance with DB-PF-03272, Post Maintenance Valve Test.

The Shift Manager has given his permission to stroke DH2736, DH Aux. Spray Throttle Valve. An equipment operator is standing by in the Auxiliary Building.

The Locked Valve Log is in the Control Room.

The Shift Manager has completed the first 8 columns in the Locked Valve Log.

Time Critical Task: NO

Validation Time: 25 Minutes

Initiating Cues

Maintenance has completed a packing adjustment on valve DH2736, DH Aux. Spray Throttle Valve, to stop a packing leak per Order 200001155.

The Unit Supervisor directs you to perform post maintenance valve testing of DH2736 in accordance with DB-PF-03272, Post Maintenance Valve Test.

The Shift Manager has given his permission to stroke DH2736, DH Aux. Spray Throttle Valve. An equipment operator is standing by in the Auxiliary Building.

The Locked Valve Log is in the Control Room.

The Shift Manager has completed the first 8 columns in the Locked Valve Log.

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

1. Performance step: Complete section 3.2 of DB-PF-03272

Standard: Check Verify section 3.1 is complete

Comment: None

2. Performance step: Complete section 3.2 of DB-PF-03272

Standard: Verify a RWP is available

Comment: None

Cue: (If asked) A special RWP is not required for this test.

3. Performance step: Obtain stroke times from the Pump and Valve Basis Document and record on Attachment 2

✓

Standard: Enter the maximum close time of 59.70 seconds, the maximum open time of 59.62 seconds, the expected close time range of 33.83 seconds to 45.77 seconds and the expected open time range of 33.78 seconds to 45.71 seconds on Attachment 2

Comment: None

4. Performance step: Complete section 3.2 of DB-PF-03272

Standard: Obtain Shift Manager's permission to perform the test

Comment: None

Cue: (If asked) the Shift Manager has given permission to stroke test DH 2736

5. Performance step: Record test equipment data

Standard: Record the M&TE number for the stopwatch and the calibration due date

Comment: None

Cue: (If asked) A special DB-OP-00016 lineup is NOT required

6. Performance step: Verify the Equipment Operator is at DH 2736

Standard: Communicate via GAI-TRONICS or radio

Comment: None

Cue: An Equipment Operator is standing by to verify local valve position

7. Performance step: Stoke DH 2736 open and record time

√

Standard: Depress and hold the OPEN pushbutton and stroke time using the stopwatch. Record the stroke time.

Comment: DH 2736 is a throttle valve, which requires the OPEN pushbutton to be depressed while the valve is stroking
DH 2736 will stroke faster than the expected time.

8. Performance step: Contact the Equipment Operator to check local indication

Standard: Communicate via GAI-TRONICS or radio

Comment: None

Cue: The Equipment Operator reports local valve position indicates DH 2736 is open

9. Performance step: Complete the "Position To" column in the Locked Valve Log

√

Standard: Enter "Open"

Comment: The Locked Valve Log may be updated after the stoke test is complete

10. Performance step: Complete the "Position By" column in the Locked Valve Log

√

Standard: Enter initials

Comment: The Locked Valve Log may be updated after the stoke test is complete

11. Performance step: Stoke DH 2736 closed and record time

√

Standard: Depress and hold the CLOSED pushbutton and stroke time using the stopwatch.
Record the stroke time.

Comment: None

12. Performance step: Contact the Equipment Operator to check local indication

Standard: Communicate via GAI-TRONICS or radio

Comment: None

Cue: The Equipment Operator reports local valve position indicates DH 2736 is closed

13. Performance step: Complete the "Restored By" column in the Locked Valve Log

√

Standard: Enter initials

Comment: The Locked Valve Log may be updated after the stoke test is complete

14. Performance step: Recognize the stroke times are not within the expected times

Standard: Compare valve stroke times to the expected range of stroke times

Comment: None

15. Performance step: Restoke DH 2736 and record times

√

Standard: Recognize the test requires the valve to be stroke timed a second time

Comment: None

Cue: DH 2736 has been stroked open and closed a second time. The stroke times are the same as recorded in step 4.2.2

16. Performance step: Inform the Unit Supervisor or Shift Manager the stroke times are not within the expected range

√

Standard: Communicate to a shift SRO the need to write a Condition Report and perform an Operability Justification

Comment: None

Cue: The Shift Manager will write the Condition Report and document the Operability Justification

17. Performance step: Complete acceptance criteria

√

Standard: Sign off steps 5.2 and 5.3

Comment: None

Terminating Cue: This JPM is complete

VERIFICATION OF COMPLETION

Job Performance Measure No. RO C

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question: _____

Response: _____

Result: SAT or UNSAT

Examiner's signature and date: _____

JPM RO C
Simulator Instructions

Setup the simulator to any Mode 1, 2, or 3 IC at NOP and NOT.

Facility: Davis-BesseTask No: 071-001-02-0100Task Title: Containment Pressure Reduction ReleaseK/A Reference: GEN 2.3.11 2.7/3.2Job Performance Measure No: RO_D

Examinee: _____

NRC Examiner: _____

Facility Evaluator: _____

Date: _____

Method of testing:

Simulated Performance _____

Actual Performance _____

Classroom _____

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. Containment to annulus differential pressure has risen to 20 inches H₂O. A release permit has been prepared and approved.

Task Standard: Initiate a pressure release of Containment.

Required Materials: None

General References: DB-OP-03012, Radioactive Gaseous Batch Release

Initiating Cue: The Unit Supervisor directs you to perform a Containment pressure reduction release beginning with step 4.6.8 of DB-OP-03012, Radioactive Gaseous Batch Release. An Equipment Operator is standing by in the Auxiliary Building with a working copy of the release procedure to take actions at your direction.

Time Critical Task: NO

Validation Time: 15 Minutes

Initiating Cues

A plant heatup is in progress.

Containment to annulus differential pressure has risen to 20 inches H₂O.

A release permit has been prepared and approved.

The Unit Supervisor directs you to perform a Containment pressure reduction release beginning with step 4.6.8 of DB-OP-03012, Radioactive Gaseous Batch Release.

An Equipment Operator is standing by in the Auxiliary Building with a working copy of the release procedure to take actions at your direction.

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

1. Performance step: Place computer point P318 on trend

√

Standard: Use the plant process computer to trend CTMT PRESS DIFF TO ANNULUS

Comment: Exceptable to trend on the computer CRT or on the analog trend pens

Cue: (If asked) The Unit Supervisor requests a 60-second trend

2. Performance step: Request the Shift Manager approval of the release

√

Standard: Communicate with the Shift Manager

Comment: Role play as the Shift Manager to sign and date Item 4.I on Attachment 1 of DB-OP-03012

3. Performance step: Verify less than 24 hours since containment was sampled

Standard: Determine difference is less than 24 hours between containment sample time in Item 4.e of Attachment 1 and current time

Comment: None

4. Performance step: Open CV5037, H2 Purge System Ctmt Isolation

√

Standard: Press OPEN on HIS5037

Comment: Role play to provide the Independent Verification for opening CV 5037

5. Performance step: Open CV5038, H2 Purge System Ctmt Isolation

√

Standard: Press OPEN on HIS5038

Comment: Role play to provide the Independent Verification for opening CV 5038

6. Performance step: Direct the Equipment Operator to open the containment release skid discharge gate, to start the skid fan and to maintain flow rate at approximately 1400 on the M&TE anemometer readout.

√

Standard: Communicate via the GAI-TRONICS or radio

Comment: May direct the Equipment Operator to perform steps 4.6.13, 4.6.14 and 4.6.15.

Cue: The Equipment Operator reports steps 4.6.13, 4.6.14 and 4.6.15 are complete. Skid flow rate is 1400 on the local anemometer.

7. Performance step: Make a Unit Log entry

Standard: Record start time, release permit number and containment to annulus differential pressure in the Unit Log

Comment: None

Cue: The secondary side Reactor Operator has made Unit Log entry for release start time, release permit number and containment to annulus differential pressure

8. Performance step: Update the release permit

Standard: Record start date and time and containment to annulus ΔP in Item 6 of Attachment 1

Comment: After the release is started an Equipment Operator will contact the Control Room to report that the Main Station Exhaust Fans are not running

Cue: This is the Zone 3 Equipment Operator. I am in Fan Alley. Neither one of the Main Station Exhaust Fans are running.

9. Performance step: Recognize the release should be stopped

√

Standard: Communicate to the Equipment Operator the need to stop the Containment Pressure Release Skid Fan

Comment: None

Cue: The Containment Pressure Release Skid Fan has been.

10. Performance step: Close CV5037, H2 Purge System Ctmt Isolation

√

Standard: Press CLOSE on HIS5037

Comment: None

11. Performance step: Close CV5038, H2 Purge System Ctmt Isolation

√

Standard: Press CLOSE on HIS5038

Comment: None

12. Performance step: Notify the Shift Manager the release has been stopped

Standard: Communicate with the Shift Manager

Comment: None

Cue: The Shift Manager acknowledges the Containment Pressure Reduction Release has been stopped.

Terminating Cue: This JPM is complete

VERIFICATION OF COMPLETION

Job Performance Measure No. RO D

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question: _____

Response: _____

Result: SAT or UNSAT

Examiner's signature and date: _____

JPM RO D
Simulator Instructions

Setup the simulator in a Mode 3, NOP, NOT IC.

Raise Containment pressure to 20 inches.

Facility: Davis-BesseTask No: 000-080-05-0100Task Title: Offsite Dose Assessment Using a NomogramK/A Reference: GEN 2.4.39 3.3/3.1Job Performance Measure No: RO E

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 reactor has been tripped due to an unisolable steam leak on Steam Generator 2. Steam Generator 2 is at 0 psig. SFRCS has actuated and both Auxiliary Feedwater Pumps Turbines (AFPT) are running. After Steam Generator 2 depressurized, a tube leak developed in Steam Generator 1. An RCS cooldown to 500 °F is in progress using Atmospheric Vent Valve 1(AVV). The Safety Parameter Display System (SPDS) terminals are not available. Lower ΔT is -1.0 °F. Wind speed is 8 MPH. RE 609 is reading 4×10^5 CPM.

Task Standard: Using a nomogram, determine the off-site TEDE dose levels at the site boundary, the two mile, the five mile and the ten mile limits.

Required Materials: Straightedge or ruler, calculator

General References: RA-EP-02240, Offsite Dose Assessment, and Offsite Dose Assessment Nomogram

Initiating Cue: The Shift Manager directs you to calculate a projected offsite Total Effective Dose Equivalent (TEDE) rate using the offsite dose assessment nomogram in accordance with RA-EP-02240, Offsite Dose Assessment.

Time Critical Task: NO

Validation Time: 13 Minutes

Initiating Cues

The reactor has been tripped due to an unisolable steam leak on Steam Generator 2.
Steam Generator 2 is at 0 psig.

SFRCS has actuated and both Auxiliary Feedwater Pumps Turbines (AFPT) are running.

After Steam Generator 2 depressurized, a tube leak developed in Steam Generator 1.

An RCS cooldown to 500 °F is in progress using Atmospheric Vent Valve 1(AVV).

The Safety Parameter Display System (SPDS) terminals are not available.

Lower ΔT is -1.0 °F

Wind speed is 8 MPH

RE 609 is reading 4×10^5 CPM

The Shift Manager directs you to calculate a projected offsite Total Effective Dose Equivalent (TEDE) rate using the offsite dose assessment nomogram in accordance with RA-EP-02240, Offsite Dose Assessment.

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

1. Performance step: Determine the release pathway

Standard: Determine the release pathway is from both AFPT exhausts and both AVVs

Comment: The flow rates for both AFPTs and AVV 1 can be added together or the TEDE rates for each of the flow paths can be added together

2. Performance step: Locates the procedural guidance

Standard: Identifies Attachment 2 of RA-EP-02240, Offsite Dose Assessment, as correct procedural guidance

Comment: None

3. Performance step: Obtain a Nomogram

Standard: Obtain a Nomogram

Comment: None

4. Performance step: Record name, date and time on nomogram

Standard: Write the information on the nomogram

Comment: None

5. Performance step: Plot the radiation monitor reading

√

Standard: From initial conditions, plot RE 609 reading of 4×10^5 CPM on scale B

Comment: None

6. Performance step: Plot the flow rate

√

Standard: Mark a flow rate of 5 to 6 KCFM on scale A

Comment: Actual value is 5.06 KCFM. 0.33 KCFM for each AFPT and 4.4 KCFM for the AVV.

7. Performance step: Plot the release rate

√

Standard: Draw a line from scale B to scale A to obtain a release rate of 10 to 20 Curries/sec

Comment: Actual release rate value is 12 Curries/sec

8. Performance step: Plot the lower ΔT

√

Standard: From initial conditions, plot lower ΔT of -1.0°F on scale 1.

Comment: Lower ΔT of -1.0°F is equivalent to a stability class E

9. Performance step: Plot the wind speed

√

Standard: From initial conditions, plot a wind speed of 8 MPH on scale 2

Comment: None

10. Performance step: Plot the X/Q value

√

Standard: Draw a line from scale 1 to scale 2 to obtain a X/Q value of 4×10^{-5} to $6 \times 10^{-5} \text{ sec/m}^3$ on scale 3

Comment: Actual X/Q value is 5×10^{-5}

11. Performance step: Plot the TEDE value at the site boundary

√

Standard: Draw a line from scale C to scale 3 to obtain a TEDE value of 0.4 to 1 rem/hr and plot on scale 4

Comment: Actual TEDE rate at the site boundary is 0.8 rem/hr

12. Performance step: Determine the TEDE rate at 2 miles

✓

Standard: Divide the site boundary TEDE rate by 5 to obtain a TEDE rate at 2 miles of 0.08 rem/hr to 0.2 rem/hr and record on the nomogram

Comment: Actual TEDE rate at 2 miles is 0.16 rem/hr

13. Performance step: Determine the TEDE rate at 5 miles

✓

Standard: Divide the site boundary TEDE rate by 15 to obtain a TEDE rate at 5 miles of 0.027 rem/hr to 0.067 rem/hr and record on the nomogram

Comment: Actual TEDE rate at 5 miles is 0.053 rem/hr

14. Performance step: Determine the TEDE rate at 10 miles

✓

Standard: Divide the site boundary TEDE rate by 40 to obtain a TEDE rate at 10 miles of 0.01 rem/hr to 0.025 rem/hr and record on the nomogram

Comment: Actual TEDE rate at 10 miles is 0.02 rem/hr

Terminating Cue: This JPM is complete.

VERIFICATION OF COMPLETION

Job Performance Measure No. RO E _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question: _____

Response: _____

Result: SAT or UNSAT

Examiner's signature and date: _____

JPM RO E
Simulator Instructions

Setup the simulator to any IC

Facility: Davis-BesseTask No: 336-005-03-0300Task Title: Notification to the Federal Aviation Administration for Cooling Tower Aviation
Light FailureK/A Reference: GEN 2.1.17 3.5/3.6Job Performance Measure No: SRO A

Examinee: _____

NRC Examiner: _____

Facility Evaluator: _____

Date: _____

Method of testing:Simulated Performance X

Actual Performance _____

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 is at 100% power. You are the Shift Manager.

Task Standard: Notify the Federal Aviation Administration of a problem with the Cooling Tower Aviation Lighting

Required Materials: None

General References: DB-OP-00002, Operations Section Event/Incident Notifications and Actions, EO-02, Cooling Tower and Microwave Tower Aviation Lighting Malfunctions

Initiating Cue: The security supervisor reports that two of the red beacons on top of the Cooling Tower are not flashing.

Time Critical Task: NO

Validation Time: 8 Minutes

Initiating Cue

The plant is at 100% power. You are the Shift Manager.

The security supervisor reports that two of the red beacons on top of the Cooling Tower are not flashing.

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

1. Performance step: Locate guidance for notifying the Federal Aviation Administration

Standard: Use Operations Directive EO-02, Cooling Tower and Microwave Tower Aviation Lighting Malfunctions

Comment: May go to DB-OP-00002 first but guidance is contained in EO-02

2. Performance step: Notify Electrical Maintenance and/or Electrical Systems Engineering

✓

Standard: Communicate via the GAI-TRONICS or telephone

Comment: May contact the Work Week Manager

Cue: Need to contact the vendor. Trouble shooting and repairing the Cooling Tower lights will take approximately 24 hours

3. Performance step: Notify the Federal Aviation Administration

✓

Standard: Communicate using the telephone

Comment: Dial 9-1-800-992-7433, #, *, 9, 9 OR 9-1-216-265-8070

Cue: Answer as the Federal Aviation Administration

4. Performance step: Notify the Federal Aviation Administration

✓

Standard: Provide name

Comment: Ask for the required information if not provided by the candidate

Cue: Role-play as the Federal Aviation Administration

5. Performance step: Notify the Federal Aviation Administration

✓

Standard: Provide reason for call - Davis-Besse Unit 1 Hyperbolic Cooling Tower Aviation Lighting problem

Comment: Ask for the required information if not provided by the candidate

Cue: Role-play as the Federal Aviation Administration

6. Performance step: Notify the Federal Aviation Administration

✓

Standard: Provide exact lighting problem - Two of the eight red beacons are not flashing

Comment: Ask for the required information if not provided by the candidate

Cue: Role-play as the Federal Aviation Administration

7. Performance step: Notify the Federal Aviation Administration

✓

Standard: Provide time of occurrence

Comment: Ask for the required information if not provided by the candidate

Cue: Role-play as the Federal Aviation Administration

8. Performance step: Notify the Federal Aviation Administration

✓

Standard: Provide estimated return to service date of 24 hours

Comment: Ask for the required information if not provided by the candidate

Cue: Role-play as the Federal Aviation Administration

9. Performance step: Notify the Federal Aviation Administration

✓

Standard: Provide latitude and longitude of the cooling tower - 41°35'57"/83°05'28"

Comment: Ask for the required information if not provided by the candidate

Cue: Role-play as the Federal Aviation Administration

10. Performance step: Notify the Federal Aviation Administration

✓

Standard: Provide the height of the cooling tower - 493'AGL/1077AMSL

Comment: AGL - Above Ground Level, AMSL - Above Mean Sea Level
Ask for the required information if not provided by the candidate

Cue: Role-play as the Federal Aviation Administration

11. Performance step: Notify the Federal Aviation Administration

✓

Standard: Provide location of the nearest airport - Port Clinton, 10 miles WNW

Comment: Davis-Besse cooling tower does not have an FCC registration number

Cue: Ask if the cooling tower has an FCC registration number.

12. Performance step: Notify the Federal Aviation Administration

Standard: Request a NOTAM number

Comment: NOTAM - Notice to AirMen

Cue: Provide the NOTAM number of 04-AGL-00129

13. Performance step: Log Federal Aviation Administration notification in the Unit Log

Standard: Make Unit Log entry with the following details:

Time of occurrence

Details of problem

Time FAA was notified

Time Electrical Maintenance/Plant Engineering was notified

NOTAM number

Comment: Unit Log may be available if JPM is performed on the simulator

Cue: Ask what information will be recorded in the Unit Log

Terminating Cue: This JPM is complete.

VERIFICATION OF COMPLETION

Job Performance Measure No. SRO A

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question: _____

Response: _____

Result: SAT or UNSAT

JPM SRO A
Simulator Instructions

If performed on the simulator, this JPM can setup at any IC

Facility: Davis-BesseTask No: 333-011-01-0300Task Title: Review and Correct a Shutdown Margin CalculationK/A Reference: GEN 2.1.12 2.9/4.0Job Performance Measure No: SRO B

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 plant is in Mode 3 following a reactor trip. The START program is not available. The following conditions exist: The plant is at 100 EFPD, RCS Boron Concentration is 1600 ppmB, Tave is 532°F, APSRs are 28.5% withdrawn, there is one known stuck rod, Reactivity worth due to transient poisons is $-.27\% \Delta K/K$, the correction factor for boron 10 depletion is 0.99, the Reactivity Anomaly is $.13\% \Delta K/K$.

Task Standard: Recognize Shutdown Margin is NOT adequate and apply the appropriate Technical Specifications

Required Materials: Calculator

General References: DB-NE-06202, Reactivity Balance Calculations, DB-NE-06201, Reactor Operator Curve Book

Initiating Cue: The Shift Manager has directed you to check the calculation for a shutdown margin per DB-NE-06202, Reactivity Balance Calculations, and DB-NE-06201, Reactor Operator Curve Book, Attachment 4.

Time Critical Task: NO

Validation Time: 22 minutes

Initiating Cue

The plant is in Mode 3 following a reactor trip.

The START program is not available.

The following conditions exist:

The plant is at 100 EFPD

RCS Boron Concentration is 1600 ppmB

Tave is 532°F

APSRs are 28.5% withdrawn

There is one known stuck rod.

Reactivity worth due to transient poisons is $-.27\% \Delta K/K$

The correction factor for boron 10 depletion is 0.99

The Reactivity Anomaly is $.13\% \Delta K/K$

The Shift Manager has directed you to check the calculation for a shutdown margin per DB-NE-06202, Reactivity Balance Calculations, and DB-NE-06201, Reactor Operator Curve Book, Attachment 4.

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

1. Performance step: Verify reactivity worth of the fuel.

Standard: From Figure 2, verify a value of 13.5% $\Delta K/K$ to 13.6% $\Delta K/K$ and enter this value on Attachment 4.

Comment: Actual value is 13.55% $\Delta K/K$

2. Performance step: Verify the corrected boron concentration.

Standard: Verify RCS boron concentration of 1600 ppmB multiplied by the B10 correction factor of 0.99 to obtain a value of 1584ppmB

Comment: None

3. Performance step: Verify the reactivity worth due to boron

Standard: From Figure 3, verify a value of -10.2% $\Delta K/K$ to -10.3% $\Delta K/K$. From Figure 4, verify a value of 1.004 to 1.006 for the Fuel Burnup Correction Factor. Multiply to obtain a value of -10.24% $\Delta K/K$ to -10.36% $\Delta K/K$

Comment: Actual value is -10.25% $\Delta K/K$ times 1.005 = -10.3% $\Delta K/K$

4. Performance step: Verify reactivity worth due to transient poisons.

Standard: Verify from initial conditions that the reactivity worth due to transient poisons is -.27% $\Delta K/K$.

Comment: None

5. Performance step: Verify the reactivity worth due to temperature.

Standard: Verify the reactivity worth due to temperature is 0

Comment: ΔT is 0% $\Delta K/K$

6. Performance step: Recognize the adjusted rod worth for one known stuck rod entered on the calculation sheet is incorrect

✓

Standard: From Figure 10, determine rod worth of $-4.18\% \Delta K/K$ to $-4.2\% \Delta K/K$ and enter on the calculation sheet.

Comment: Actual value is $-4.19\% \Delta K/K$. Value entered on the calculation sheet was $-5.12\% \Delta K/K$

The candidate may choose to complete the review of the Shutdown Margin before informing the Shift Manager of the error.

Cue: The Shift Manager acknowledges the error and directs you to continue with the calculations and make any necessary corrections.

7. Performance step: Verify APSR reactivity worth.

Standard: From Figure 11A, verify APSR reactivity worth of $-0.11\% \Delta K/K$ to $-0.12\% \Delta K/K$.

Comment: Actual value is $-0.115\% \Delta K/K$

8. Performance step: Verify Flux Redistribution Penalty (FRP) using Table 1 of DB-op-06201.

Standard: Verify Flux Redistribution Penalty is $0.35\% \Delta K/K$.

Comment: None

9. Performance step: Verify reactivity anomaly reactivity worth from initial conditions.

Standard: Verify reactivity anomaly reactivity worth is $.13\% \Delta K/K$.

Comment: None

10. Performance step: Determine the value for shutdown margin.

✓

Standard: Determine that shutdown margin is a value between $.72\% \Delta K/K$ and $.97\% \Delta K/K$.

Comment: Actual Shutdown Margin is $.845\% \Delta K/K$

11. Performance step: Take actions for Shutdown Margin less than adequate

Standard: Communicate revised Shutdown Margin to the Shift Manager

Comment: None

Cue: (If asked) The Shift Manager reports another SRO has reviewed the corrections and agrees that Shutdown Margin is less than 1%.

12. Performance step: Take actions for Shutdown Margin less than adequate

✓

Standard: Recognize the need to enter Technical Specification 3.1.1.1

Comment: May need to ask the candidate what actions are required

Candidate may refer to Tech. Specs.

13. Performance step: Take actions for Shutdown Margin less than adequate

✓

Standard: Recognize the need to immediately initiate RCS boration

Comment: May need to ask the candidate what actions are required

Candidate may refer to Tech. Specs.

Terminating Cues: This JPM is complete.

VERIFICATION OF COMPLETION

Job Performance Measure No. SRO B

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question: _____

Response: _____

Result: SAT or UNSAT

Examiner's signature and date: _____

JPM SRO B
Simulator Instructions

If performed on the simulator, this JPM can setup at any IC

Facility: Davis-BesseTask No: 119-004-03-0400Task Title: Control of Locked Valves During Post-Maintenance TestingK/A Reference: GEN 2.2.12 3.0/3.4Job Performance Measure No: SRO C

Examinee: _____

NRC Examiner: _____

Facility Evaluator: _____

Date: _____

Method of testing:Simulated Performance X

Actual Performance _____

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: Maintenance has completed a packing adjustment on valve DH2736, DH Aux. Spray Throttle Valve, to stop a packing leak per Order 200001155.

Task Standard: Stroke and time DH2736 and make the appropriate locked valve log entries.

Required Materials: Pump and Valve Basis Document, Stop watch and Locked Valve Log

General References: DB-PF-03272, Post Maintenance Valve Test, DB-OP-00008, Operation and Control of Locked Valves

Initiating Cue: The Unit Supervisor directs you to perform post maintenance valve testing of DH2736 in accordance with DB-PF-03272, Post Maintenance Valve Test.

The Shift Manager has given his permission to stroke DH2736, DH Aux. Spray Throttle Valve. An equipment operator is standing by in the Auxiliary Building.

The Locked Valve Log is in the Control Room.

The Shift Manager has completed the first 8 columns in the Locked Valve Log.

Time Critical Task: NO

Validation Time: 25 Minutes

Initiating Cues

Maintenance has completed a packing adjustment on valve DH2736, DH Aux. Spray Throttle Valve, to stop a packing leak per Order 200001155.

The Unit Supervisor directs you to perform post maintenance valve testing of DH2736 in accordance with DB-PF-03272, Post Maintenance Valve Test.

The Shift Manager has given his permission to stroke DH2736, DH Aux. Spray Throttle Valve. An equipment operator is standing by in the Auxiliary Building.

The Locked Valve Log is in the Control Room.

The Shift Manager has completed the first 8 columns in the Locked Valve Log.

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

1. Performance step: Complete section 3.2 of DB-PF-03272

Standard: Check Verify section 3.1 is complete

Comment: None

2. Performance step: Complete section 3.2 of DB-PF-03272

Standard: Verify a RWP is available

Comment: None

Cue: (If asked) A special RWP is not required for this test.

3. Performance step: Obtain stroke times from the Pump and Valve Basis Document and record on Attachment 2

✓

Standard: Enter the maximum close time of 59.70 seconds, the maximum open time of 59.62 seconds, the expected close time range of 33.83 seconds to 45.77 seconds and the expected open time range of 33.78 seconds to 45.71 seconds on Attachment 2

Comment: None

4. Performance step: Complete section 3.2 of DB-PF-03272

Standard: Obtain Shift Manager's permission to perform the test

Comment: None

Cue: (If asked) the Shift Manager has given permission to stroke test DH 2736

5. Performance step: Record test equipment data

Standard: Record the M&TE number for the stopwatch and the calibration due date

Comment: None

Cue: (If asked) A special DB-OP-00016 lineup is NOT required

6. Performance step: Verify the Equipment Operator is at DH 2736

Standard: Communicate via GAI-TRONICS or radio

Comment: None

Cue: An Equipment Operator is standing by to verify local valve position

7. Performance step: Stoke DH 2736 open and record time

√

Standard: Depress and hold the OPEN pushbutton and stroke time using the stopwatch. Record the stroke time.

Comment: DH 2736 is a throttle valve, which requires the OPEN pushbutton to be depressed while the valve is stroking
DH 2736 will stroke faster than the expected time.

8. Performance step: Contact the Equipment Operator to check local indication

Standard: Communicate via GAI-TRONICS or radio

Comment: None

Cue: The Equipment Operator reports local valve position indicates DH 2736 is open

9. Performance step: Complete the "Position To" column in the Locked Valve Log

√

Standard: Enter "Open"

Comment: The Locked Valve Log may be updated after the stoke test is complete

10. Performance step: Complete the "Position By" column in the Locked Valve Log

√

Standard: Enter initials

Comment: The Locked Valve Log may be updated after the stoke test is complete

11. Performance step: Stoke DH 2736 closed and record time

√

Standard: Depress and hold the CLOSED pushbutton and stroke time using the stopwatch.
Record the stroke time.

Comment: None

12. Performance step: Contact the Equipment Operator to check local indication

Standard: Communicate via GAI-TRONICS or radio

Comment: None

Cue: The Equipment Operator reports local valve position indicates DH 2736 is closed

13. Performance step: Complete the "Restored By" column in the Locked Valve Log

√

Standard: Enter initials

Comment: The Locked Valve Log may be updated after the stoke test is complete

14. Performance step: Recognize the stroke times are not within the expected times

Standard: Compare valve stroke times to the expected range of stroke times

Comment: None

15. Performance step: Restoke DH 2736 and record times

√

Standard: Recognize the test requires the valve to be stroke timed a second time

Comment: None

Cue: DH 2736 has been stroked open and closed a second time. The stroke times are the same as recorded in step 4.2.2

16. Performance step: Inform the Unit Supervisor or Shift Manager the stroke times are not within the expected range

√

Standard: Communicate to a shift SRO the need to write a Condition Report and perform an Operability Justification

Comment: None

Cue: The Shift Manager will write the Condition Report and document the Operability Justification

17. Performance step: Complete acceptance criteria

√

Standard: Sign off steps 5.2 and 5.3

Comment: None

Terminating Cue: This JPM is complete

VERIFICATION OF COMPLETION

Job Performance Measure No. SRO C

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question: _____

Response: _____

Result: SAT or UNSAT

Examiner's signature and date: _____

JPM SRO C
Simulator Instructions

Setup the simulator to any Mode 1, 2, or 3 IC at NOP and NOT.

Facility: Davis-BesseTask No: 333-008-01-0300Task Title: Review and Approve a Containment Pressure Reduction ReleaseK/A Reference: GEN 2.3.11 2.7/3.2Job Performance Measure No: SRO D

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: A plant heatup is in progress. Containment to annulus differential pressure has risen to 20 inches H₂O. Flow transmitter FT5090, Station Vent Flow, is out of service for channel calibration.

Task Standard: Review and approve a pressure release of Containment.

Required Materials: None

General References: DB-OP-03012, Radioactive Gaseous Batch Release, Offsite Dose Calculation Manual

Initiating Cue: Chemistry has completed section 4.15 of DB-OP-03012, Radioactive Gaseous Batch Release and returned the release permit to the Shift Manager. The Shift Manager directs you to perform section 4.5 of DB-OP-03012, Radioactive Gaseous Batch Release.

Time Critical Task: NO

Validation Time: 24 Minutes

Initiating Cues

A plant heatup is in progress.

Containment to annulus differential pressure has risen to 20 inches H₂O.

Flow transmitter FT5090, Station Vent Flow, is out of service for channel calibration.

Chemistry has completed section 4.15 of DB-OP-03012, Radioactive Gaseous Batch Release and returned the release permit to the Shift Manager.

The Shift Manager directs you to perform section 4.5 of DB-OP-03012, Radioactive Gaseous Batch Release.

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

1. Performance step: Verify Chemistry has approved the release

Standard: Verify Item 4.h of Attachment 1 is signed and dated

Comment: None

2. Performance step: Verify the surveillance requirements are current.

Standard: Verify current surveillances by using DB Maintenance Management System or refer to the Unit Log or refer to the report provided by the Work Support Group

Comment: If DBMMS or Unit Log is used provide cues. If ask provide surveillance report.

3. Performance step: Verify the surveillance requirements are current.

Standard: Check DB-MI-03413, RMS Channel Calibration for RE 4598AA and RE 4598BA is current

Cue: (If asked) DB-MI-03413 for RE4598AA Tech. Spec. late date is 8/26/04. DB-MI-03413 for RE4598BA Tech. Spec. late date is 4/23/05.

4. Performance step: Verify the surveillance requirements are current.

Standard: Check DB-MI-03442, Channel Calibration of 32C-ISF 5090, Station Vent Flow, for FT 5090 is current

Comment: May not check FT 5090 since OOS in initial conditions

Cue: (if asked) DB-MI-03442 for FT 5090 Tech. Spec. late date is 2/20/05.

5. Performance step: Verify the surveillance requirements are current.

✓

Standard: Recognize DB-MI-03444, Channel Calibration of 32C-ISF 5090A, Station Vent Flow, for FT 5090A is NOT current

Comment: May recognize both flow transmitter channels are inoperable.

Cue: (if asked) DB-MI-03444 for FT 5090A Tech. Spec. late date is (yesterday's date).

6. Performance step: Verify the surveillance requirements are current.

Standard: Check DB-OP-03007, Miscellaneous Instrument Daily Checks is current

Comment: Status of DB-OP-03007 is obtained from the Unit Log

Cue: (if asked) DB-OP-03007 was completed (today's date)

7. Performance step: Verify the surveillance requirements are current.

Standard: Check DB-SC-03216, Quarterly Functional Test of RE 4598AA, Station Vent Normal Range Radiation Monitor is current

Comment:

Cue: (if asked) DB-SC-03216 for RE4598AA Tech. Spec. late date is 6/10/04.

8. Performance step: Verify the surveillance requirements are current

Standard: Verify DB-SC-03218, Quarterly Functional Test of RE 4598BA, Station Vent Normal Range Radiation Monitor is current

Comment:

Cue: (if asked) DB-SC-03218 for RE4598BA Tech. Spec. late date is 5/7/04

9. Performance step: Verify the surveillance requirements are current

Standard: Check DB-SC-03200, Shift Channel Check of the Radiation Monitoring System is current

Comment: Status of DB-OP-03200 can be obtained from the Unit Log

Cue: (if asked) DB-OP-03200 was completed (today's date)

10. Performance step: Verify the surveillance requirements are current

Standard: Check DB-CN-03008, Station Vent Releases, Weekly Radiological Monitoring, Sampling and Analysis is current

Comment: Status of DB-CN-03008 can be obtained from the Unit Log

Cue: (if asked) DB-CN-03008 was completed (yesterday's date)

11. Performance step: Recognize that both Station Vent flow monitors are inoperable

√

Standard: Circle UNSAT in item 4.i and record Offsite Dose Calculation Manual (ODCM) action statement

Comment: ODCM action statement for both flow channels inoperable is to estimate flow rate every 12 hours

Cue: (If asked) Another SRO is making the Operability Tracking Log entries

12. Performance step: Request Shift Manager approval for the release

Standard: Communication with the Shift Manager

Comment:

Terminating Cue: This JPM is complete

VERIFICATION OF COMPLETION

Job Performance Measure No. SRO D

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question: _____

Response: _____

Result: SAT or UNSAT

Examiner's signature and date: _____

JPM SRO D
Simulator Instructions

If the simulator is used, setup the simulator in a Mode 3, NOP, NOT IC.

Raise Containment pressure to 20 inches.

Facility: Davis-BesseTask No: 334-004-05-0300Task Title: Manually Activate the Emergency Response Organization Group PageK/A Reference: GEN 2.4.43 2.8/3.5Job Performance Measure No: SRO E

Examinee: _____

NRC Examiner: _____

Facility Evaluator: _____

Date: _____

Method of testing:Simulated Performance X

Actual Performance _____

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 is in Mode 1. An Alert has been declared do to the loss of both trains of Decay Heat Removal.

Task Standard: Recognize the Computerized Automatic Notification System (CANS) is not responding. Manually activate the ERO Group Page.

Required Materials: None

General References: RA-EP-02110, Emergency Notification; Emergency Plan Telephone Directory

Initiating Cue: Security is not available to make emergency notifications. The Emergency Director directs you to notify the Emergency Response Organization in accordance with step 6.2 of RA-EP-001700, Alert.

Time Critical Task: NO

Validation Time: 8 Minutes

Initiating Cues

The plant is in Mode 1.

An Alert has been declared do to the loss of both trains of Decay Heat Removal.

Security is not available to make emergency notifications. The Emergency Director directs you to notify the Emergency Response Organization in accordance with in accordance with step 6.2 of RA-EP-001700, Alert.

PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

1. Performance step: Make notifications to the ERO

Standard: Refer to RA-EP-02110, Emergency Notifications

Comment: None

2. Performance step: Obtain a scenario activation password

Standard: Obtain the Emergency Directors password, if the examinee does not have his/her own password

Comment: Password needed to activate CANS. Password is individual's social security number

Cue: (If asked) The password is 123-45-6789

2. Performance step: Obtain the Emergency Classification

Standard: Recognize the Emergency Classification is an Alert as provided in the Initial Conditions

Comment: None

3. Performance step: Obtain the CANS access number

Standard: Obtain the CANS access number from the Emergency Plan Telephone Directory

Comment: CANS number is 9-419-249-2412 OR dial extension 2412

Cue: The CANS number is busy. CANS does not answer.

4. Performance step: Contact CANS

Standard: Dial the CANS phone number

Comment: CANS number will be busy

Cue: The CANS number is busy. CANS does not answer.

5. Performance step: Contact CANS

Standard: Dial the CANS phone number a second time

Comment: None

Cue: The CANS number is busy. CANS does not answer.

6. Performance step: Recognize CANS failure

√

Standard: Route to section 6.3 of RA-EP-02110, Emergency Notification

Comment: None

7. Performance step: Obtain the Emergency Classification

√

Standard: Recognize the Emergency Classification is an Alert as provided in the Initial Conditions

Comment: None

8. Performance step: Obtain the ERO Numeric group pager number

√

Standard: Obtain the group pager number from the Emergency Plan Telephone Directory

Comment: Group pager number is 9-1-800-405-4758

9. Performance step: Contact the pager system

√

Standard: Dial the pager number

Comment: None

Cue: Group pager number has been dialed. The pager system asks for the pager number.

10. Performance step: Enter the pager number

√

Standard: Enter pager number 2533024

Comment: None

Cue: Pager number 2533024 has been entered. The pager system asks for the numeric message followed by the “#” (pound) key

11. Performance step: Enter the classification code

√

Standard: Enter 2222

Comment: None

Cue: 2222 has been entered

12. Performance step: Depress the (#) key

√

Standard: Depress the (#) key

Comment: None

Cue: The # key has been depressed

13. Performance step: Contact the pager system

√

Standard: Dial the pager number a second time

Comment: None

Cue: Group pager number has been dialed. The pager system asks for the pager number.

14. Performance step: Enter the pager number

√

Standard: Enter pager number 2533024 a second time

Comment: None

Cue: Pager number 2533024 has been entered. The pager system asks for the numeric message followed by the “#” (pound) key

15. Performance step: Enter the classification code a second time

√

Standard: Enter 2222

Comment: None

Cue: 2222 has been entered

16. Performance step: Depress the (#) key a second time

√

Standard: Depress the (#) key

Comment: None

Cue: The # key has been depressed

17. Performance step: Verify the group page functioned properly

Standard: Verify the Control Room pager indicates 2222

Comment: None

Cue: The Control Room pager has gone off twice, indicating 2222.

Terminating Cue: This JPM is complete

VERIFICATION OF COMPLETION

Job Performance Measure No. SRO E

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question: _____

Response: _____

Result: SAT or UNSAT

Examiner's signature and date: _____

JPM SRO E Simulator Instructions

Setup the simulator to any IC