

Facility: KewauneeTask No: Procedure N-CRD-49DTask Title: ECP Manual CalculationJob Performance Measure No: A.1(RO)K/A Reference: Generic 2.1.25 (2.8 / 3.1)

Examinee: _____

NRC Examiner: _____

Facility Evaluator: _____

Date: _____

Method of testing:Simulated Performance _____ Actual Performance XClassroom _____ 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:

You are the RO assigned to day shift.

The reactor automatically tripped at 8 am yesterday and is expected to be critical at 2 pm today.

Prior to the trip, the reactor was at steady-state 100% power for 3 weeks.

Core burnup is 6500 MWD/MTU and boron concentration is currently 1400 ppm.

Desired CBD position is 90 steps and Tavg is expected to be 548°F for **Startup No. 111**.

The computer is not available and an updated reactivity plan is being developed.

Task Standard: The ECP is completed with the critical boron concentration determined to be 1288 ppm \pm 14. Maximum and minimum CBD rod position are determined to be 160 steps (+1, -0) and 37 steps (+1, -0). Graph values are to be read to within one half of one division.

Required Materials: N-CRD-49D, Calculating Estimated Critical Position for Reactor Startup, Reactor Data (RD) curves referenced below, and a calculator.

General References: N-CRD-49D, Rev. D and appropriate RD curves, including 5.1.1.1, 5.1.1.2, 6.2, 8.3, 9.2, 9.1.2, 10.1, 10.2, and 13.2.

Initiating Cue: **The CRS has directed you to perform an independent manual ECP for a “Critical Boron - Fixed Rod Height” per step 4.2 of N-CRD-49D.**

Time Critical Task: **NO**

Validation Time: **30** minutes

Facility: Kewaunee

Job Performance Measure No: A.1(RO)

Initial Conditions:

You are the RO assigned to day shift.

The reactor automatically tripped at 8 am yesterday and is expected to be critical at 2 pm today.

Prior to the trip, the reactor was at steady-state 100% power for 3 weeks.

Core burnup is 6500 MWD/MTU and boron concentration is currently 1400 ppm.

Desired CBD position is 90 steps and Tavg is expected to be 548°F for **Startup No. 111**.

The computer is not available and an updated reactivity plan is being developed.

Initiating Cue: **The CRS has directed you to perform an independent manual ECP for a “Critical Boron - Fixed Rod Height” per step 4.2 of N-CRD-49D.**

PERFORMANCE INFORMATION

(Denote critical steps with a “**”)

Starting Time: _____

1 Performance step: Heading of ECP data sheet is filled out.

Standard: ALL blocks filled out with given information (see grading data sheet).

Comment:

2 Performance step: Determine excess core reactivity based on core burnup.

Standard: Excess core reactivity determined to be 12290 pcm ± 50 using RD 13.2.

Comment:

3 Performance step: Calculate xenon worth.

Standard: RD 9.2 is used to determine full power equilibrium Xe (-2573 pcm ± 2.5)
RD 9.1.2 is used to determine % full power equilibrium Xe (0.69 ± 0.005)
These values are multiplied together to obtain Xe worth (-1775 pcm ± 15)

Comment:

PERFORMANCE INFORMATION

(Denote critical steps with a “**”)

4 Performance step: Determine Samarium worth.

Standard: Samarium worth is determined using **RD 10.1** or RD 10.2 (-945 pcm \pm 2.5)

Comment: **The MOL line should be used and RD 10.1 may more easily provide an accurate samarium worth value due to smaller time increments.**

5 Performance step: Determine temperature defect.

Standard: Temperature defect is determined to be 1 °F (548 - 547 = 1 °F).
Isothermal Temperature Coefficient is **0** per N-CRD-49D note.
These values are multiplied together to obtain temperature defect (**0 pcm**).

Comment:

6 Performance step: Calculate total defect.

Standard: Total defect is the sum of all calculated reactivities (9570 pcm \pm 67.5).

Comment:

PERFORMANCE INFORMATION

(Denote critical steps with a “*”)

7 Performance step: Determine rod worth with CBD at 90 steps.

Standard: RD 5.1.1.1 or RD 5.1.1.2 is used to determine rod worth (-576 pcm \pm 0)

Comment:

8 Performance step: Determine net reactivity.

Standard: Rod worth is added to obtain net reactivity
(9570 - 576 = 8994 pcm \pm 67.5).

Comment:

9 Performance step: Determine critical reactivity.

Standard: Rod worth is multiplied by -1 to obtain critical reactivity
(8994 X -1 = -8994 pcm \pm 67.5).

Comment:

PERFORMANCE INFORMATION

(Denote critical steps with a “*”)

10 Performance step: Determine differential boron worth.

Standard: Differential boron worth is determined using RD 6.2 for MOL at 1400 ppm (-6.98 pcm/ppm \pm 0.025)

Comment:

11* Performance step: Determine critical boron concentration.

Standard: Critical boron concentration is determined by dividing critical reactivity by the differential boron worth ($-8994 / -6.98 = 1289 \text{ ppm} \pm 14$)

Comment: The critical boron concentration value of 1288 ppm indicates that a **dilution** is required.

12* Performance step: Determine maximum CBD position.

Standard: 400 pcm is added to the CBD worth ($-576 + 400 = -176 \text{ pcm}$). Using RD 5.1.1.1 or RD 5.1.1.2, maximum CBD position is **159 steps +1, -0**

Comment:

PERFORMANCE INFORMATION

(Denote critical steps with a “*”)

13* Performance step: Determine minimum CBD position.

Standard: 400 pcm is subtracted from the CBD worth ($-576 - 400 = -976$ pcm). Using RD 5.1.1.1 or RD 5.1.1.2, minimum CBD position is (**37 steps +1, -0**)

Comment:

Terminating cue: THIS COMPLETES THE JPM. Completion Time: _____

VERIFICATION OF COMPLETION

Job Performance Measure No. A.1(RO)

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: _____

Every JPM should:

1. be supported by facility licensee's job task analysis.
2. be operationally important (meets NRC K/A Catalog threshold criterion of 2.5 (3 for requalification exams) or as determined by the facility and agreed to by the NRC).
3. be designed as either SRO only, **RO/SRO** or **AO/RO/SRO**.
4. include the following, as applicable:
 - a. initial conditions
 - b. initiating cues
 - c. references and tools, including associated procedures
 - d. validated time limits (average time allowed for completion) and specific designation of those JPMs that are deemed to be time-critical by the facility operations department
 - e. specific performance criteria that include:
 - (1) expected actions with exact control and indication nomenclature and criteria (switch position, meter reading), even if these criteria are not specified in the procedural step
 - (2) system response and other cues that are complete and correct so that the examiner can properly cue the examinee, if asked
 - (3) statements describing important observations that should be made by the examinee
 - (4) criteria for successful completion of the task
 - (5) identification of those steps that are considered critical
 - (6) **N/A** restrictions on the sequence of steps

Facility: KewauneeTask No: Procedure N-CRD-49DTask Title: ECP Manual CalculationJob Performance Measure No: A.1(SRO)K/A Reference: Generic 2.1.25 (2.8 / 3.1)

Examinee: _____

NRC Examiner: _____

Facility Evaluator: _____

Date: _____

Method of testing:Simulated Performance _____ Actual Performance XClassroom XSimulator 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:

You are the RO assigned to day shift.

The reactor automatically tripped at 8 am yesterday and is expected to be critical at 2 pm today.

Prior to the trip, the reactor was at steady-state 100% power for 3 weeks.

Core burnup is 6500 MWD/MTU and boron concentration is currently 1400 ppm.

Desired CBD position is 90 steps and Tavg is expected to be 548°F for **Startup No. 111**.

The computer is not available and an updated reactivity plan is being developed.

Task Standard: The ECP is completed with the critical boron concentration determined to be 1288 ppm \pm 14. Maximum and minimum CBD rod position are determined to be 160 steps (+1, -0) and 37 steps (+1, -0). Graph values are to be read to within one half of one division.

Required Materials: N-CRD-49D, Calculating Estimated Critical Position for Reactor Startup, Reactor Data (RD) curves referenced below, and a calculator.

General References: N-CRD-49D, Rev. D and appropriate RD curves, including 5.1.1.1, 5.1.1.2, 6.2, 8.3, 9.2, 9.1.2, 10.1, 10.2, and 13.2.

Initiating Cue: **The CRS has directed you to REVIEW and CORRECT as necessary a manual ECP for a "Critical Boron - Fixed Rod Height" per step 4.2 of N-CRD-49D.**

Time Critical Task: **NO**

Validation Time: **30** minutes

Facility: Kewaunee

Job Performance Measure No: A.1(SRO)

Initial Conditions:

You are the SRO assigned to day shift.

The reactor automatically tripped at 8 am yesterday and is expected to be critical at 2 pm today.

Prior to the trip, the reactor was at steady-state 100% power for 3 weeks.

Core burnup is 6500 MWD/MTU and boron concentration is currently 1400 ppm.

Desired CBD position is 90 steps and Tavg is expected to be 548°F for **Startup No. 111**.

The computer is not available and an updated reactivity plan is being developed.

Initiating Cue: **The CRS has directed you to REVIEW and CORRECT as necessary a manual ECP for a “Critical Boron - Fixed Rod Height” per step 4.2 of N-CRD-49D.**

PERFORMANCE INFORMATION

(Denote critical steps with a “*”)

Starting Time: _____

1 Performance step: Heading of ECP data sheet is verified to be filled out.

Standard: ALL blocks filled out with given information (see grading data sheet).

Comment:

2 Performance step: Determine excess core reactivity based on core burnup.

Standard: Excess core reactivity verified to be 12290 pcm ± 50 using RD 13.2.

Comment: Given 12200 pcm - NEEDS CORRECTION

3 Performance step: Calculate xenon worth.

Standard: RD 9.2 is used to determine full power equilibrium Xe (-2573 pcm ± 2.5)
RD 9.1.2 is used to determine % full power equilibrium Xe (0.69 ± 0.005)
These values are multiplied together to obtain Xe worth (-1775 pcm ± 15)

Comment: Given full power equilibrium Xe (-2581 pcm) - NEEDS CORRECTION
Given % full power equilibrium Xe (0.7) - NEEDS CORRECTION
Given Xe worth (-1806 pcm) - NEEDS CORRECTION

PERFORMANCE INFORMATION

(Denote critical steps with a “*”)

4 Performance step: Determine Samarium worth.

Standard: Samarium worth is determined using **RD 10.1** or RD 10.2 (-945 pcm \pm 2.5)

Comment: **The MOL line should be used and RD 10.1 may more easily provide an accurate samarium worth value due to smaller time increments.** Given -950 pcm - NEEDS CORRECTION

5 Performance step: Determine temperature defect.

Standard: Temperature defect is determined to be 1°F (548 - 547 = 1°F).
Isothermal Temperature Coefficient is **0** per N-CRD-49D note.
These values are multiplied together to obtain temperature defect (**0** pcm).

Comment: Given (+1 X -7.8) = -8 pcm - NEEDS CORRECTION

6 Performance step: Calculate total defect.

Standard: Total defect is the sum of all calculated reactivities (9570 pcm \pm 67.5).

Comment: Given 9436 pcm - NEEDS CORRECTION

PERFORMANCE INFORMATION

(Denote critical steps with a “*”)

7 Performance step: Determine rod worth with CBD at 90 steps.

Standard: RD 5.1.1.1 or RD 5.1.1.2 is used to determine rod worth (-576 pcm \pm 0)

Comment: OK

8 Performance step: Determine net reactivity.

Standard: Rod worth is added to obtain net reactivity
(9570 - 576 = 8994 pcm \pm 67.5).

Comment: Given (9436 - 576 = 8850 pcm) - NEEDS CORRECTION

9 Performance step: Determine critical reactivity.

Standard: Rod worth is multiplied by -1 to obtain critical reactivity
(8994 X -1 = -8994 pcm \pm 67.5).

Comment: Given (-8850 pcm) - NEEDS CORRECTION

PERFORMANCE INFORMATION

(Denote critical steps with a “*”)

10 Performance step: Determine differential boron worth.

Standard: Differential boron worth is determined using RD 6.2 for MOL at 1400 ppm (-6.98 pcm/ppm \pm 0.025)

Comment: Given (-6.95 pcm/ppm) - NEEDS CORRECTION

11* Performance step: Determine critical boron concentration.

Standard: Critical boron concentration is determined by dividing critical reactivity by the differential boron worth ($-8994 / -6.98 = 1289 \text{ ppm} \pm 14$)

Comment: Given 1274 ppm - NEEDS CORRECTION

12* Performance step: Determine maximum CBD position.

Standard: 400 pcm is added to the CBD worth ($-576 + 400 = -176 \text{ pcm}$). Using RD 5.1.1.1 or RD 5.1.1.2, maximum CBD position is **159 steps +1, -0**

Comment: Given CBD worth ($+576 + 400 = 976 \text{ pcm}$), Thus “maximum” CBD position is **37 steps - NEEDS CORRECTION**

PERFORMANCE INFORMATION

(Denote critical steps with a “*”)

13* Performance step: Determine minimum CBD position.

Standard: 400 pcm is subtracted from the CBD worth ($-576 - 400 = -976$ pcm). Using RD 5.1.1.1 or RD 5.1.1.2, minimum CBD position is (**37 steps +1, -0**)

Comment: Given CBD worth ($+576 - 400 = 176$ pcm), Thus “minimum” CBD position is **159 steps - NEEDS CORRECTION**

Terminating cue: THIS COMPLETES THE JPM. Completion Time: _____

VERIFICATION OF COMPLETION

Job Performance Measure No. A.1(SRO)

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: _____

Every JPM should:

1. be supported by facility licensee's job task analysis.
2. be operationally important (meets NRC K/A Catalog threshold criterion of 2.5 (3 for requalification exams) or as determined by the facility and agreed to by the NRC).
3. be designed as either SRO only, RO/**SRO** or AO/RO/SRO.
4. include the following, as applicable:
 - a. initial conditions
 - b. initiating cues
 - c. references and tools, including associated procedures
 - d. validated time limits (average time allowed for completion) and specific designation of those JPMs that are deemed to be time-critical by the facility operations department
 - e. specific performance criteria that include:
 - (1) expected actions with exact control and indication nomenclature and criteria (switch position, meter reading), even if these criteria are not specified in the procedural step
 - (2) system response and other cues that are complete and correct so that the examiner can properly cue the examinee, if asked
 - (3) statements describing important observations that should be made by the examinee
 - (4) criteria for successful completion of the task
 - (5) identification of those steps that are considered critical
 - (6) **N/A** restrictions on the sequence of steps

Facility: KewauneeTask No: EPIP-AD-07Task Title: EP Notifications (LOOP)Job Performance Measure No: A.4(RO)K/A Reference: 2.4.15

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 experienced a Loss of Offsite Power from 100% power, normal operations due to a severe storm that has just passed through the area.
- Buses 1-5 and 1-6 are being powered from the Emergency Diesel Generators.
- An Unusual Event has been declared at **0750** and the Event Notice (NARS) Form EIPF-AD-07-01 has been completed and approved at **0756**.
- The CURRENT TIME is **0756**.

Task Standards: Initial Emergency Notifications are initiated and in progress within 15 minutes from the time of EVENT CLASSIFICATION (**9 minutes** from the Initiating Cue).

Required Materials: A "Dial Select" phone, a watch set to **0756**, the NARS Form EIPF-AD-07-01 and procedure EPIP-AD-07.

General References: EPIP-AD-03, "KNPP Response to an Unusual Event".
EPIP-AD-07, "Initial Emergency Notifications"..
Form EIPF-AD-07-01, "Event Notice Nuclear Accident Reporting System Form (NARS)"

Initiating Cue: **The Shift Manager directs you, as the NOTIFIER, to perform State and County notifications per EPIP-AD-07. THIS TASK IS TIME CRITICAL.**

Time Critical Task: **YES**

Validation Time: 10 minutes

Facility: Kewaunee

Job Performance Measure No: A.4(RO)

Initial Conditions:

- The plant experienced a Loss of Offsite Power from 100% power, normal operations due to a severe storm that has just passed through the area.
- Buses 1-5 and 1-6 are being powered from the Emergency Diesel Generators.
- An Unusual Event has been declared at **0750** and the Event Notice (NARS) Form EIPF-AD-07-01 has been completed and approved at **0756**.
- The CURRENT TIME is **0756**.

Initiating Cue: **The Shift Manager directs you, as the NOTIFIER, to perform State and County notifications per EIP-AD-07. THIS TASK IS TIME CRITICAL.**

PERFORMANCE INFORMATION

(Denote critical steps with a “**”)

Starting Time: _____

1 Performance step: Obtain and review references as needed.

Standard: Current copies of the following references are available for review:

- EPIP-AD-03, “KNPP Response to an Unusual Event”
- EPIP-AD-07, “Initial Emergency Notifications”.
- Form EPIPF-AD-07-01, “Event Notice Nuclear Accident Reporting System Form (NARS)” - **(a partially completed NARS form is provided to the candidate when the Initiating Cue is given)**

Comment: Provide working copies of EPIP-AD-07 and EPIP-AD-03, as required, after the candidate locates the desired procedure(s).

2 Performance step: Verify the SM/ED has contacted the SAS.

Standard: EPIP-AD-07, step 5.1.1 - The candidate performs the verification.

Comment: The note prior to step 5.1 requires that the “Notifier” to perform step 5.1: **“Notify the State and County of the Event”**.

3 Performance step: Verify any Event Notice (NARS) Form received from the SM has approval signature, date and time.

Standard: EPIP-AD-07, step 5.1.2 - The candidate performs the verification.

Comment: The note prior to step 5.1 requires that the “Notifier” to perform step 5.1: **“Notify the State and County of the Event”**.

4* Performance step: Complete block 12 of Form EPIPF-AD-07-01 (NARS).

Standard: EPIP-AD-07, step 5.1.3 - The candidate performs the action.

Comment: The note prior to step 5.1 requires that the “Notifier” to perform step 5.1: **“Notify the State and County of the Event”**.

PERFORMANCE INFORMATION

(Denote critical steps with a “**”)

5* Performance step: Complete EPIP-AD-07, Attachment A, “State and County Event Notification” per EPIP-AD-07, step 5.1.4
- **(1) VERIFY the bell switch is ON.**

Standard: EPIP-AD-07, Attachment A - Step 1 - The candidate performs the verification.

Comment: CUE - **The bell switch is ON.**

6* Performance step: Complete EPIP-AD-07, Attachment A, “State and County Event Notification” per EPIP-AD-07, step 5.1.4
- **(2) Pick up the Dial Select phone and verify the line is clear.**

Standard: EPIP-AD-07, Attachment A - Step 2 - The candidate performs the actions.

Comment: CUE - **Someone is found to be using the Dial Select Line.**

7* Performance step: Complete EPIP-AD-07, Attachment A, “State and County Event Notification” per EPIP-AD-07, step 5.1.4
- **(2.a) IF someone is using the line, STATE you have a “Priority 2” Notification.**

Standard: EPIP-AD-07, Attachment A - Step 2.a. - The candidate performs the action.

Comment: CUE - **The line is now clear.**

8* Performance step: Complete EPIP-AD-07, Attachment A, “State and County Event Notification” per EPIP-AD-07, step 5.1.4 -
(3) When the line is Clear, DIAL “22”.

Standard: EPIP-AD-07, Attachment A - Step 3 - The candidate performs the action.

Comment: CUE - **The phone rings, State Warning Center II answers at “TIME” and the phone keeps ringing.**

PERFORMANCE INFORMATION

(Denote critical steps with a “*”)

9* Performance step: Complete EPIP-AD-07, Attachment A, “State and County Event Notification” per EPIP-AD-07, step 5.1.4:
- **(4a-b) When each party acknowledges, answer by saying “*This is Kewaunee Nuclear Plant - Please stay on the line for a NARS message*” and record the time that the agency responds on the NARS form.**

Standard: EPIP-AD-07, Attachment A - Step 4.a&b - The candidate performs the actions.

Comment: CUE - **Kewaunee and Manitowoc Counties BOTH answer at “TIME” and the phone keeps ringing.**

10* Performance step: Complete EPIP-AD-07, Attachment A, “State and County Event Notification” per EPIP-AD-07, step 5.1.4: (**PERFORM AGAIN**)
- **(4a-b) When each party acknowledges, answer by saying “*This is Kewaunee Nuclear Plant - Please stay on the line for a NARS message*” and record the times that both counties responded on the NARS form.**

Standard: EPIP-AD-07, Attachment A - Step 4.a&b - The candidate performs the actions.

Comment: The following step (**pressing the “#” key to stop the phone from ringing**) may be performed prior to answering the parties above.

11* Performance step: Complete EPIP-AD-07, Attachment A, “State and County Event Notification” per EPIP-AD-07, step 5.1.4:
- **(4c) After all agencies have answered, press the “#” key to cancel the ringing.**

Standard: EPIP-AD-07, Attachment A - Step 4.c - The candidate performs the action.

Comment: CUE - **The phone stops ringing.**

PERFORMANCE INFORMATION

(Denote critical steps with a “*”)

12* Performance step: Complete EPIP-AD-07, Attachment A, “State and County Event Notification” per EPIP-AD-07, step 5.1.4
- **(5) Read the message on the NARS Form SLOWLY and DELIBERATELY, using letter and number designations (REF: “PHONETIC ALPHABET”).**

Standard: EPIP-AD-07, Attachment A - Step 5 - The candidate performs the action.

Comment: The PHONETIC ALPHABET is defined in the Communications Standard GNP-03.17.04.

13* Performance step: Complete EPIP-AD-07, Attachment A, “State and County Event Notification” per EPIP-AD-07, step 5.1.4
- **(6) SAY: “State Warning Center, please read back this message to verify accuracy” and PAUSE.**

Standard: EPIP-AD-07, Attachment A - Step 6 - The candidate performs the actions.

Comment: CUE - STATE: **“State Warning Center reads back the message accurately”** **IF** the message contains no errors, OTHERWISE read back the message AS GIVEN by the candidate to see if the errors are corrected appropriately.

14* Performance step: Complete EPIP-AD-07, Attachment A, “State and County Event Notification” per EPIP-AD-07, step 5.1.4
- **(7) SAY: “Have all agencies received this message?” and PAUSE.**

Standard: EPIP-AD-07, Attachment A - Step 7 - The candidate performs the actions.

Comment: CUE - STATE: **“All agencies have received this message” and RECORD ELAPSED TIME from the start of the JPM.** (TIME: _____)

15* Performance step: Complete EPIP-AD-07, Attachment A, “State and County Event Notification” per EPIP-AD-07, step 5.1.4
- **(8) SAY: “Relay this information to Emergency Management immediately. Have the appropriate personnel verify this message by placing a return phone call to KNPP at 920-388-0101”.**

Standard: EPIP-AD-07, Attachment A - Step 8 - The candidate performs the action.

Comment: CUE - **ACKNOWLEDGE (and repeat back) the last message.** NOTE: This last leg of communication is not stated in the procedure.

PERFORMANCE INFORMATION

(Denote critical steps with a “*”)

16 Performance step: Complete EPIP-AD-07, Attachment A, “State and County Event Notification” per EPIP-AD-07, step 5.1.4
- **(9) IF any agencies did not respond...**

Standard: EPIP-AD-07, Attachment A - Step 9 - The candidate performs the verification.

Comment: The candidate should acknowledge that all agencies have responded.

17* Performance step: Complete EPIP-AD-07, Attachment A, “State and County Event Notification” per EPIP-AD-07, step 5.1.4
- **(10) INFORM SM/ED/ERM that initial notifications have been made and you are awaiting verification callbacks.**

Standard: EPIP-AD-07, Attachment A - Step 10 - The candidate performs the actions.

Comment: CUE - **ACKNOWLEDGE (and repeat back) the last message.**

Terminating cue: **This JPM is completed.**

Completion Time: _____

VERIFICATION OF COMPLETION

Job Performance Measure No. A.4(RO)

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: _____

Every JPM should:

1. be supported by facility licensee's job task analysis.
2. be operationally important (meets NRC K/A Catalog threshold criterion of 2.5 (3 for requalification exams) or as determined by the facility and agreed to by the NRC).
3. be designed as either SRO only, **RO/SRO** or **AO/RO/SRO**.
4. include the following, as applicable:
 - a. initial conditions
 - b. initiating cues
 - c. references and tools, including associated procedures
 - d. validated time limits (average time allowed for completion) and specific designation of those JPMs that are deemed to be time-critical by the facility operations department
 - e. specific performance criteria that include:
 - (1) expected actions with exact control and indication nomenclature and criteria (switch position, meter reading), even if these criteria are not specified in the procedural step
 - (2) system response and other cues that are complete and correct so that the examiner can properly cue the examinee, if asked
 - (3) statements describing important observations that should be made by the examinee
 - (4) criteria for successful completion of the task
 - (5) identification of those steps that are considered critical
 - (6) restrictions on the sequence of steps

Facility: KewauneeTask No: EPIP-AD-18Task Title: KI DistributionJob Performance Measure No: A.4(SRO)K/A Reference: 2.4.38

Examinee: _____

NRC Examiner: _____

Facility Evaluator: _____

Date: _____

Method of testing:Simulated Performance _____ Actual Performance X _____Classroom X _____ 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 fuel handling emergency has occurred where projected dose to the thyroid may exceed 25 rem during the time of exposure in the fuel handling area.
- Specific isotopic analysis has been performed on the airborne iodine:
 - I-131 = 5.3E-06 $\mu\text{Ci/cc}$
 - I-133 = 5.1E-08 $\mu\text{Ci/cc}$
 - I-134 = 6.7E-08 $\mu\text{Ci/cc}$
- The necessary work in the affected area is expected to take 3 hours for each of the 3 individuals needed to perform the job.

Task Standards: EPIP-AD-18, "Potassium Iodide Distribution", Steps 5.2 & 5.3.Required Materials: A calculator, Form EPIPF-AD-18-01 and EPIP-AD-18.General References: EPIP-AD-18, "Potassium Iodide Distribution".
Form EPIPF-AD-18-01, "Airborne Radioiodine Accountability and Potassium Iodide Distribution"Initiating Cue: **The Shift Manager / ED directs you to perform Airborne Radioiodine Dose calculations and advise him whether or not to approve the use of KI.**Time Critical Task: **NO**Validation Time: 15 minutes

Facility: Kewaunee

Job Performance Measure No: A.4(SRO)

Initial Conditions:

- A fuel handling emergency has occurred where projected dose to the thyroid may exceed 25 rem during the time of exposure in the fuel handling area.
- Specific isotopic analysis has been performed on the airborne iodine:
 - I-131 = 5.3E-06 $\mu\text{Ci/cc}$
 - I-133 = 5.1E-08 $\mu\text{Ci/cc}$
 - I-134 = 6.7E-08 $\mu\text{Ci/cc}$
- The necessary work in the affected area is expected to take 3 hours for each of the 3 individuals needed to perform the job.

Initiating Cue: **The Shift Manager / ED directs you to perform Airborne Radioiodine Dose calculations and advise him whether or not to approve the use of KI.**

PERFORMANCE INFORMATION

(Denote critical steps with a “**”)

Starting Time: _____

1 Performance step: Obtain and review references (Precautions & Initial Conditions).

Standard: Current copies of the following references are obtained and reviewed:

- EPIP-AD-18, “Potassium Iodide Distribution”.
- Form EIPPF-AD-18-01, “Airborne Radioiodine Accountability and Potassium Iodide Distribution”

Comment: Provide working copies of EPIP-AD-18 and EIPPF-AD-18-01 after the candidate locates the references.

2* Performance step: Record the specific isotopic values on the corresponding lines of Table 1 of Form EIPPF-AD-18-01.

Standard: EPIP-AD-18, step 5.2: The candidate records the following iodine concentrations on the line by the appropriate Dose Conversion Factor:

- **I-131 = 5.3E-06 μ Ci/cc**
- **I-133 = 5.1E-08 μ Ci/cc**
- **I-134 = 6.7E-08 μ Ci/cc**

Comment:

3* Performance step: Record the Breathing Rate for **short** exposure times on the corresponding lines of Table 1 of Form EIPPF-AD-18-01.

Standard: EPIP-AD-18, step 5.2: **1.25E06** is recorded by each given iodine isotope.

Comment:

4* Performance step: Calculate the Estimated Thyroid Dose Rate for each isotope.

Standard: EPIP-AD-18, step 5.2: The following values are calculated and recorded:

- I-131: $5.3E-06 \times 1.48 \times 1.25E06 = 9.805$ rads/hour
- I-133: $5.1E-08 \times 0.400 \times 1.25E06 = 0.025704$ rads/hour
- I-134: $6.7E-08 \times 0.025 \times 1.25E06 = 0.00209375$ rads/hour
- Total Dose Rate: $(9.805 + 0.025704 + 0.00209375 = 9.83279775$ rads/hr)

Comment: Answers may be rounded to three decimal places (Ex: Total = **9.833** rads/hour) as per the example calculation and recorded in Table 1.

PERFORMANCE INFORMATION

(Denote critical steps with a “*”)

5 Performance step: Table 2 of Form EIPF-AD-18-01 is filled in with known information.

Standard: EPIP-AD-18, step 5.2: The candidate fills in Exposure Duration (3 hours) and Estimated Thyroid Dose Rate for “**Individuals 1, 2, and 3**” on Table 2.

Comment:

6* Performance step: Calculate the exposure to each of the individuals and record on Table 2 of Form EIPF-AD-18-01:

- $9.833 \text{ rads/hour} \times 3 \text{ hours} = \mathbf{29.498 \text{ rads}}$ (+0.001/ -0)

Standard: EPIP-AD-18, step 5.2: The candidate calculates the Total Thyroid Dose for each of the 3 individuals and records them on Table 2 of Form EIPF-AD-18-01.

Comment:

7* Performance step: The Shift Manager / ED is advised that KI should be approved based on projected dose being likely to exceed 25 rem for each individual.

Standard: EPIP-AD-18, Step 5.3.2.

Comment: RPD approval is not required per step 5.3.2.a (“OR”).

Terminating cue: **This JPM is completed.**

Completion Time: _____

VERIFICATION OF COMPLETION

Job Performance Measure No. A.4(SRO)

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: _____

Every JPM should:

1. be supported by facility licensee's job task analysis.
2. be operationally important (meets NRC K/A Catalog threshold criterion of 2.5 (3 for requalification exams) or as determined by the facility and agreed to by the NRC).
3. be designed as either **SRO only**, RO/SRO or AO/RO/SRO.
4. include the following, as applicable:
 - a. initial conditions
 - b. initiating cues
 - c. references and tools, including associated procedures
 - d. validated time limits (average time allowed for completion) and specific designation of those JPMs that are deemed to be time-critical by the facility operations department
 - e. specific performance criteria that include:
 - (1) expected actions with exact control and indication nomenclature and criteria (switch position, meter reading), even if these criteria are not specified in the procedural step
 - (2) system response and other cues that are complete and correct so that the examiner can properly cue the examinee, if asked
 - (3) statements describing important observations that should be made by the examinee
 - (4) criteria for successful completion of the task
 - (5) identification of those steps that are considered critical
 - (6) restrictions on the sequence of steps

Facility: KewauneeTask No: SP-48-337Task Title: Manual QPTRJob Performance Measure No: A.1.b(RO)K/A Reference: 2.1.33

Examinee: _____

NRC Examiner: _____

Facility Evaluator: _____

Date: _____

Method of testing:Simulated Performance _____ Actual Performance XClassroom _____ 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 85% power.
The Honeywell computer is NOT available.
Annunciator 47032-L, "Upper Quadrant Power Tilt Ratio" is in alarm.

Task Standards: Detector Current values are within ± 0.2 , Corrected Currents are within ± 0.001 , and QPTR values are within ± 0.002 . Also, QPTR is reported to exceed an Acceptance Criterion (QPTR > 1.02).

Required Materials: Calculator and a copy of SP-48-337, Quadrant Power Tilt Ratio Determination.

General References: SP-48-337, Quadrant Power Tilt Ratio Determination.

Initiating Cue: **The CRS directs you to perform a Manual QPTR per SP-48-337.**

Time Critical Task: **NO**

Validation Time: 20 minutes

Facility: Kewaunee

Job Performance Measure No: A.1.b(RO)

Initial Conditions: The plant is at 85% power.
 The Honeywell computer is NOT available.
 Annunciator 47032-L, "Upper Quadrant Power Tilt Ratio" is in alarm.

Initiating Cue: **The CRS directs you to perform a Manual QPTR per SP-48-337.**

PERFORMANCE INFORMATION

(Denote critical steps with a “**”)

Starting Time: _____

1 Performance step: Refer to procedure SP-48-337, Data Sheet 1, and RECORD Group Step Counter Positions.

Standard: SP-48-337, Quadrant Power Tilt Ratio Determination, step 4.1.

Comment: Provide a BLANK copy of Data Sheet 1 as required to perform the JPM.

2* Performance step: Record individual Detector Currents from Power Range B Drawers.

Standard: Verify the recorded individual Detector Currents are within ± 0.2 of panel values.

Comment:

3* Performance step: Record 100% detector currents on Data Sheet 1.

Standard: Verify the recorded Power Range drawer 100% detector current values are within ± 0.2 of panel values.

Comment:

PERFORMANCE INFORMATION

(Denote critical steps with a “*”)

4* Performance step: Calculate corrected currents.Standard: Calculate Corrected Currents to **within ± 0.001** by dividing Detector Current by 100% current for each detector on Data Sheet 1.UPPER Detectors

N41 - $290.7/325.2 = .894$

N42 - $252.2/283.9 = .888$

N43 - $279.6/314.9 = .888$

N44 - $294.7/332.6 = .886$

LOWER Detectors

N41 - $289.7/357.6 = .810$

N42 - $238.4/293.1 = .813$

N43 - $262.5/317.1 = .828$

N44 - $280.4/344.0 = .815$

Comment:

5* Performance step: Calculate the average Corrected Currents for upper and lower detectorsStandard: Calculate the average Corrected Currents of the 4 upper and four lower detectors to **within ± 0.001** .UPPER Detectors

$(.894 + .888 + .888 + .886) / 4 = .889$

LOWER Detectors

$(.810 + .813 + .828 + .815) / 4 = .817$

Comment:

6* Performance step: Calculate the QPTR for each detector.Standard: Calculate the QPTR for each detector by dividing the corrected current by the corresponding average current to **within ± 0.002** .UPPER Detectors

$.894 / .889 = 1.006$

$.888 / .889 = 0.999$

$.888 / .889 = 0.999$

$.886 / .889 = 0.997$

LOWER Detectors

$.810 / .817 = 0.991$

$.813 / .817 = 0.995$

$.828 / .817 = 1.013$

$.815 / .817 = 0.998$

Comment:

7* Performance step: Candidate processes Data Sheet 1, notes QPTR > 1.02 , and informs shift management.

Standard: SP-48-337, Quadrant Power Tilt Ratio Determination, steps 4.5, 5.1 and 5.2.

Comment: **CUE:** As the CRS, **INFORM** the candidate that **you will complete the processing of Data Sheet 1** and **ACKNOWLEDGE** the report that QPTR > 1.02 .

Terminating cue: **This JPM is completed.**Completion Time: _____

VERIFICATION OF COMPLETION

Job Performance Measure No. A.1.b(RO)

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: _____

Every JPM should:

1. be supported by facility licensee's job task analysis.
2. be operationally important (meets NRC K/A Catalog threshold criterion of 2.5 (3 for requalification exams) or as determined by the facility and agreed to by the NRC).
3. be designed as either SRO only, **RO/SRO** or **AO/RO/SRO**.
4. include the following, as applicable:
 - a. initial conditions
 - b. initiating cues
 - c. references and tools, including associated procedures
 - d. validated time limits (average time allowed for completion) and specific designation of those JPMs that are deemed to be time-critical by the facility operations department
 - e. specific performance criteria that include:
 - (1) expected actions with exact control and indication nomenclature and criteria (switch position, meter reading), even if these criteria are not specified in the procedural step
 - (2) system response and other cues that are complete and correct so that the examiner can properly cue the examinee, if asked
 - (3) statements describing important observations that should be made by the examinee
 - (4) criteria for successful completion of the task
 - (5) identification of those steps that are considered critical
 - (6) **N/A** restrictions on the sequence of steps

FOR SIMULATOR USE ONLY

Simulator Setup:

Reset simulator to **IC-34** - 85% power, BOC, CBD @ 195steps.

Place simulator in **RUN**

Place CBD Rods G-3, C-7 and G-11 Disconnect Switches in the “**DISCONNECTED**” position (Key 1).

Place the Control Bank Selector switch to the “**CBD**” position.

Drive Rod (K-7) in 5 steps to 190 steps on CBD Group 1 Step Counter.

Place the Control Bank Selector switch to the “**AUTO**” position.

Restore CBD Rods G-3, C-7 and G-11 Disconnect Switches in the “**CONNECTED**” position.

Place simulator in **FREEZE**

*(MAY need to Preload **CryWolf** for Annunciator 47023-L SER 1677, “Upper Quadrant Power Tilt Ratio High”)*

Facility: KewauneeTask No: SP-48-337Task Title: Manual QPTRJob Performance Measure No: A.1.b(SRO)K/A Reference: 2.1.33

Examinee: _____

NRC Examiner: _____

Facility Evaluator: _____

Date: _____

Method of testing:Simulated Performance _____ Actual Performance XClassroom _____ 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 85% power.
The Honeywell computer is NOT available.
Annunciator 47032-L, "Upper Quadrant Power Tilt Ratio" is in alarm.

Task Standards: Detector Current values are within ± 0.2 , Corrected Currents are within ± 0.001 , and QPTR values are within ± 0.002 . Also, QPTR is reported to exceed an Acceptance Criterion (QPTR > 1.02).

Required Materials: Calculator, Technical Specifications and a completed copy of SP-48-337, Quadrant Power Tilt Ratio Determination, Data Sheet 1.

General References: SP-48-337, Quadrant Power Tilt Ratio Determination.

Initiating Cue: **The CRS directs you to REVIEW a manual QPTR, make any necessary corrections, and advise him of any Technical Specification actions.**

Time Critical Task: **NO**

Validation Time: 20 minutes

Facility: Kewaunee

Job Performance Measure No: A.1.b(SRO)

Initial Conditions: The plant is at 85% power.
 The Honeywell computer is NOT available.

Initiating Cue: **The CRS directs you to REVIEW a manual QPTR, make any necessary corrections, and advise him of any Technical Specification actions.**

PERFORMANCE INFORMATION

(Denote critical steps with a “**”)

Starting Time: _____

1 Performance step: Refer to procedure SP-48-337 and Data Sheet 1.

Standard: Refer to SP-48-337, Abnormal Nuclear Instrumentation, and Data Sheet 1.

Comment: Provide a completed copy of Data Sheet 1 as required to review and correct the JPM.

2* Performance step: Verify individual Detector Currents from Power Range B Drawers.

Standard: Verify individual Detector Currents are within ± 0.2 of panel values and Record any corrections.

Comment: The **SRO** should VERIFY given detector current values against the Power Range B Drawers and CORRECT any errors on Data Sheet 1.

3* Performance step: Verify 100% detector currents on Data Sheet 1.

Standard: Verify recorded Power Range drawer 100% detector current values are within ± 0.2 of placard values.

Comment: The **SRO** should VERIFY 100% detector current values against the placard values and CORRECT any errors on Data Sheet 1.

PERFORMANCE INFORMATION

(Denote critical steps with a “**”)

4* Performance step: Verify calculated Corrected Currents.

Standard: Verify calculated Corrected Currents to **within ±0.001** by dividing Detector Current by 100% current for each detector on Data Sheet 1.

UPPER Detectors

$$N41 - 290.7/325.2 = .894$$

$$N42 - 252.2/283.9 = .888$$

$$N43 - 279.6/314.9 = .888$$

$$N44 - 294.7/332.6 = .886$$

LOWER Detectors

$$N41 - 289.7/357.6 = .810$$

$$N42 - 238.4/293.1 = .813$$

$$N43 - 262.5/317.1 = .828$$

$$N44 - 280.4/344.0 = .815$$

Comment: The **SRO** should verify the corrected currents AND correct any errors to within ±0.001.

5* Performance step: Verify calculated average Corrected Currents for upper and lower detectors

Standard: Verify calculated average Corrected Currents of the 4 upper and four lower detectors to **within ±0.001**.

UPPER Detectors

$$(.894 + .888 + .888 + .886) / 4 = .889$$

LOWER Detectors

$$(.810 + .813 + .828 + .815) / 4 = .817$$

Comment: The **SRO** should verify the average Corrected Currents AND correct any errors to within ±0.001.

6* Performance step: Verify calculated QPTR for each detector.

Standard: Verify calculated QPTR for each detector by dividing the corrected current by the corresponding average current to **within ±0.002**.

UPPER Detectors

$$.894 / .889 = 1.006$$

$$.888 / .889 = 0.999$$

$$.888 / .889 = 0.999$$

$$.886 / .889 = 0.997$$

LOWER Detectors

$$.810 / .817 = 0.991$$

$$.813 / .817 = 0.995$$

$$.828 / .817 = 1.013$$

$$.815 / .817 = 0.998$$

Comment: The **SRO** should verify QPTR AND correct any errors to within ±0.002.

PERFORMANCE INFORMATION

(Denote critical steps with a “**”)

7* Performance step: Review QPTR results per Technical Specifications and specify actions required to the CRS.

Standard: Refer to Technical Specification **3.10.c** - Quadrant Power Tilt Limits, for a tilt > 1.02 but less than 1.09 AND report a Technical Specification/Acceptance Criterion has been exceeded.

Comment: The **SRO** should note the tilt and notify the CRS to:

- Eliminate the tilt within 24 hours or reduce power to $\leq 50\%$.
- Restrict maximum core power by 2% for every 1% of indicated power tilt ratio >1.0.

Terminating cue: **This JPM is completed.** Completion Time: _____

VERIFICATION OF COMPLETION

Job Performance Measure No. A.1.b(SRO)

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: _____

Every JPM should:

1. be supported by facility licensee's job task analysis.
2. be operationally important (meets NRC K/A Catalog threshold criterion of 2.5 (3 for requalification exams) or as determined by the facility and agreed to by the NRC).
3. be designed as either SRO only, RO/**SRO** or AO/RO/SRO.
4. include the following, as applicable:
 - a. initial conditions
 - b. initiating cues
 - c. references and tools, including associated procedures
 - d. validated time limits (average time allowed for completion) and specific designation of those JPMs that are deemed to be time-critical by the facility operations department
 - e. specific performance criteria that include:
 - (1) expected actions with exact control and indication nomenclature and criteria (switch position, meter reading), even if these criteria are not specified in the procedural step
 - (2) system response and other cues that are complete and correct so that the examiner can properly cue the examinee, if asked
 - (3) statements describing important observations that should be made by the examinee
 - (4) criteria for successful completion of the task
 - (5) identification of those steps that are considered critical
 - (6) **N/A** restrictions on the sequence of steps

FOR SIMULATOR USE ONLY

Simulator Setup:

Reset simulator to **IC-34** - 85% power, BOC, CBD @ 195steps.

Place simulator in **RUN**

Place CBD Rods G-3, C-7 and G-11 Disconnect Switches in the “**DISCONNECTED**” position (Key 1).

Place the Control Bank Selector switch to the “**CBD**” position.

Drive Rod (K-7) in 5 steps to 190 steps on CBD Group 1 Step Counter.

Place the Control Bank Selector switch to the “**AUTO**” position.

Restore CBD Rods G-3, C-7 and G-11 Disconnect Switches in the “**CONNECTED**” position.

Place simulator in **FREEZE**

*(MAY need to Preload **CryWolf** for Annunciator 47023-L SER 1677, “Upper Quadrant Power Tilt Ratio High”)*

Facility: KewauneeTask No: HP-01.019Task Title: Radiation ControlJob Performance Measure No: A.3K/A Reference: 2.3.1

Examinee: _____

NRC Examiner: _____

Facility Evaluator: _____

Date: _____

Method of testing:Simulated Performance _____ Actual Performance _____ **Questions** _____Classroom _____ **X** _____ Simulator _____ **X** _____ Plant _____READ TO THE EXAMINEE

I will explain the initial conditions and provide initiating cues. When you answer the 2 questions successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

3. GIVEN an area where an individual would receive **1 mrem** in **2 hours** at 30 centimeters from a source.
4. GIVEN an area where an individual would receive **1.8 rem** in **3 hours** at 30 centimeters from a source

Task Standards: Identify area designations and entry requirements **from memory**.Required Materials: Calculator and a pen or pencil.General References: HP-01.019, "RCA Boundaries, Postings and Barricades, and Posted Area Entry Requirements".Initiating Cue: DETERMINE the following for BOTH radiological conditions **from memory** :

How would the area be designated?

What would the minimum entry requirements be?.

Time Critical Task: **NO**Validation Time: 10 minutes

INITIAL CONDITIONS / ANSWER SHEET

Facility: Kewaunee

Job Performance Measure No: A.3

Initial Conditions:

3. GIVEN an area where an individual would receive **1 mrem** in **2 hours** at 30 centimeters from a source.
4. GIVEN an area where an individual would receive **1.8 rem** in **3 hours** at 30 centimeters from a source

Initiating Cue: DETERMINE the following for BOTH radiological conditions **from memory**:

1. How would the area be designated?
2. What would the minimum entry requirements be?

ANSWER SHEET

1. GIVEN an area where an individual would receive **1 mrem** in **2 hours** at 30 centimeters from a source.
 1. How would the area be designated?
 2. What would the minimum entry requirements be?
2. GIVEN an area where an individual would receive **1.8 rem** in **3 hours** at 30 centimeters from a source.
 1. How would the area be designated?
 2. What would the minimum entry requirements be?.

PERFORMANCE INFORMATION

(Denote critical steps with a “**”)

Starting Time: _____

-
- 1 Performance step: Given an area where an individual would receive 1 mrem in 2 hours at 30 centimeters from a source:
- How would the area be designated?
 - What would the minimum entry requirements be?.

Standard: Per HP-01.019, “RCA Boundaries, Postings and Barricades, and Posted Area Entry Requirements”, page 6, an area > 0.25 mrem/hour to 5 mrem/hour is a Radiologically Controlled Area (RCA). Entry requirements are specified as:

- a Radiation Work Permit (RWP)
- a Direct-Reading Dosimeter (DRD)
- and a TLD.

Comment:

-
- 2* Performance step: Given an area where an individual would receive 1.8 rem in 3 hours at 30 centimeters from a source:
- How would the area be designated?
 - What would the minimum entry requirements be?.

Standard: Per HP-01.019, “RCA Boundaries, Postings and Barricades, and Posted Area Entry Requirements”, pages 7-8, an area > 100 mrem/hour but < 1000 mrem/hour is a High Radiation Area (HRA). Entry requirements are specified as:

- a Radiation Work Permit (RWP)
- a Direct-Reading Dosimeter (DRD)
- a TLD.
- and any ONE of the following:
 - A radiation monitoring device which continuously indicates dose rate in the area.
 - A radiation monitoring device which continuously integrates the radiation dose in the area and alarms when a preset integrated dose is received.
 - A Radiation Protection qualified individual (qualified in RP procedures) with a radiation monitoring device who is responsible for providing positive control over the activities and performing periodic surveillance.

Comment:

VERIFICATION OF COMPLETION

Job Performance Measure No. A.3

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: _____

Every JPM should:

1. √ be supported by facility licensee's job task analysis.
2. √ be operationally important (meets NRC K/A Catalog threshold criterion of 2.5 (3 for requalification exams) or as determined by the facility and agreed to by the NRC).
3. √ be designed as either SRO only, **RO/SRO** or AO/RO/SRO.
4. include the following, as applicable:
 - a. √ initial conditions
 - b. √ initiating cues
 - c. N/A references and tools, including associated procedures
 - d. √ validated time limits (average time allowed for completion) and specific designation of those JPMs that are deemed to be time-critical by the facility operations department
 - e. N/A specific performance criteria that include:
 - (1) N/A expected actions with exact control and indication nomenclature and criteria (switch position, meter reading), even if these criteria are not specified in the procedural step
 - (2) N/A system response and other cues that are complete and correct so that the examiner can properly cue the examinee, if asked
 - (3) N/A statements describing important observations that should be made by the examinee
 - (4) N/A criteria for successful completion of the task
 - (5) N/A identification of those steps that are considered critical
 - (6) N/A restrictions on the sequence of steps

Facility: KewauneeTask No: GNP-03.03.01Task Title: Review a TagoutJob Performance Measure No: A.2K/A Reference: 2.2.13

Examinee: _____

NRC Examiner: _____

Facility Evaluator: _____

Date: _____

Method of testing:Simulated Performance _____ Actual Performance XClassroom X 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: Charging Pump B Pulsation Dampener Maintenance is scheduled.
The computerized tagout system is out of service.
A handwritten tagout has been developed to isolate Charging Pump B.

Task Standards: Two discrepancies are identified in the review of the tagout.

Required Materials: Current copies of the following references are available:

- GNP-3.03.01 - Tagout Processing
- PMP 35-09, CVC-QA-1, Charging Pump Pulsation Dampener Maintenance
- N-CVC-35B-CL, Charging and Volume Control Prestartup Checklist
- Drawing OPERXK-100-36, Flow Diagram CVCS

General References: References listed above.

Initiating Cue: **The CRS directs you to perform a Tagout Placement Adequacy / Accuracy verification for Tag Number 04-9999 and report any discrepancies.**

Time Critical Task: **NO**

Validation Time: 20 minutes

Facility: Kewaunee

Job Performance Measure No: A.2

Initial Conditions: Charging Pump B Pulsation Dampener Maintenance is scheduled.
 The computerized tagout system is out of service.
 A handwritten tagout has been developed to isolate Charging Pump B.

Initiating Cue: **The CRS directs you to perform a Tagout Placement Adequacy / Accuracy verification for Tag Number 04-9999 and report any discrepancies.**

PERFORMANCE INFORMATION

(Denote critical steps with a “**”)

Starting Time: _____

1 Performance step: Obtain and review references as needed to determine tagging series adequacy.

Standard: Current copies of the following references are available for review:

- GNP-3.03.01 - Tagout Processing
- PMP 35-09, CVC-QA-1, Charging Pump Pulsation Dampener Maintenance
- N-CVC-35B-CL, Charging and Volume Control Prestartup Checklist
- Drawing OPERXK-100-36, Flow Diagram CVCS

Comment: Provide a working copy of GNP-3.03.01 - Tagout Processing once the candidate locates this procedure. The focus of this JPM is a **tag series review** using available references. Plant walk-downs, or reviews of individual tags or requesting individual documentation is NOT required.

2* Performance step: Verify the Tagout adequately isolates the component.

Standard: While verifying the Tagout adequately isolates the component with respect to worker safety and scope of work, the candidate identifies that the specified breaker for Charging Pump B, MCC62E-A5, **should be MCC62E-A6.**

Comment: CVC-28B, Suction Pulsation Dampener Drain, is NOT required to be tagged per PMP 35-09. It may be pointed out that the tag was added at the discretion of the Operations Department **if** questioned. Also, the Shift Manager will determine the specified tagout sequence once the tagout is ready for placement, **if** tagout sequence is questioned.

PERFORMANCE INFORMATION

(Denote critical steps with a “**”)

3* Performance step: Verify the Tagout adequately isolates the component.

Standard: While verifying the Tagout adequately isolates the component with respect to worker safety and scope of work, the candidate identifies that the required placement and restoration position for CVC-30B Casing Vent is reversed.

- The placement position is listed as OPEN, but should be CLOSED.
- The restoration position is listed as CLOSED, but should be OPEN.

Comment: After the candidate has completed identifying discrepancies, the JPM can be terminated.

Terminating cue: **This JPM is completed.**

Completion Time: _____

VERIFICATION OF COMPLETION

Job Performance Measure No. A.2

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: _____

Every JPM should:

1. be supported by facility licensee's job task analysis.
2. be operationally important (meets NRC K/A Catalog threshold criterion of 2.5 (3 for requalification exams) or as determined by the facility and agreed to by the NRC).
3. be designed as either SRO only, **RO/SRO** or AO/RO/SRO.
4. include the following, as applicable:
 - a. initial conditions
 - b. initiating cues
 - c. references and tools, including associated procedures
 - d. validated time limits (average time allowed for completion) and specific designation of those JPMs that are deemed to be time-critical by the facility operations department
 - e. specific performance criteria that include:
 - (1) expected actions with exact control and indication nomenclature and criteria (switch position, meter reading), even if these criteria are not specified in the procedural step
 - (2) system response and other cues that are complete and correct so that the examiner can properly cue the examinee, if asked
 - (3) statements describing important observations that should be made by the examinee
 - (4) criteria for successful completion of the task
 - (5) identification of those steps that are considered critical
 - (6) **N/A** restrictions on the sequence of steps