JOB PERFORMANCE MEASURE APPROVAL SHEET

I. JPM Title: **Perform a Shutdown Safety Assessment**

ID Number: JPM-A1.1S Revision: 0

II. Initiated:

Robert L. Cimmino, Jr.
Developer

8/4/03
Date

III. Reviewed:

Technical Reviewer

8/5/03
Date

IV. Approved:

User Department Supervisor

Date

Nuclear Training Supervisor

8/6/03
Date

PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-1.1S TITLE: **Perform a Shutdown Safety Assessment**

JOB PERFORMANCE MEASURE WORKSHEET

Facility: MP-2 Examinee: _____

JPM Number: JPM-1.1S Rev. 1

Task Title: **Perform a Shutdown Safety Assessment**

System: Conduct of Operations

Time Critical Task: Yes ____ No X

Validated Time (minutes): 20

Task No.(s): NUTIMS # 119-01-044

Applicable To: SRO X RO ____ PEO ____

K/A No.: 2.1.7 K/A Rating: 3.7/4/4

Method of Testing:

Simulated Performance: X Actual Performance: ____

Location:

Classroom: X Simulator: ____ In-Plant: ____

Task Standards: At the completion of this JPM the examinee has determined the appropriate color code for each key safety function as shown on the Shutdown Safety Assessment.

Required Materials (procedures,equipment): OP 2264, Conduct of Outages

General References: OP 2264, Conduct of Outages, Rev. 009

*** * * * READ TO THE EXAMINEE * * * ***

I will explain the initial conditions, which step(s) to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied. You may use any approved reference materials normally available in the Control Room, including logs. Make all written reports, oral reports, alarm acknowledgments, and log entries as if the evolution was actually being performed.

PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-1.1S TITLE: **Perform a Shutdown Safety Assessment**

JOB PERFORMANCE MEASURE WORKSHEET

JPM Number: JPM-A3S/R Rev. 1

Initiating Cues:

- As a result of a valve being mispositioned while shifting trains of SFP Cooling, the SFP level has dropped to 35' 2".
- Perform a Shutdown Safety Assessment.

Initial Conditions: The plant is in MODE 6 on day 30 of a scheduled 45 day refueling outage and the fuel shuffle is complete. RCS level has been lowered to 4" above the centerline for RCP seal replacement. RCS Temperature from T-351X indicates 89°F. The RCS Boron concentration is 2193 ppm. The following conditions exist:

- Time to boil is 61.5 minutes.
- Both EDGs are OPERABLE
- A temporary EDG is NOT installed
- The SBO diesel is available
- On site power is being supplied by the backfeeding the Main transformer
- the RSST is available
- Unit 3 NSST is powering buses 34A and B (1-5G-13T-2 and associated disconnect switches are open)
- Both DC buses are OPERABLE
- RWST level is 95.2%
- Both trains of SDC are OPERABLE with the "A" train in service
- Both trains of SFP Cooling are available with the "A" train in service and SFP Temperature is 97°F
- "A" and "C" HPSI Pumps are available
- "A" and "C" Charging Pumps are available
- Both motor driven aux feedwater pumps are aligned to the CST
- The refueling purification pump is in service
- Both PMW Pumps are available with "A" in lead
- The fire system is OPERABLE
- Containment Closure is available with the closure team manned.
- There is NO fuel movement in progress in the SFP.

Simulator Requirements: N/A

*** * * * NOTES TO EXAMINER * * * ***

1. Critical steps for this JPM are indicated with an "X". For the examinee to achieve a satisfactory grade, **ALL** critical steps must be completed correctly.

2. When examinee states what his/her simulated action/observation would be, read the appropriate "Cue".

PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-1.1S TITLE: **Perform a Shutdown Safety Assessment**

3. If necessary, question examinee for details of simulated actions / observations (i.e. "What are you looking at?" or "What are you observing?").

START TIME: _____

STEP **1** ___ Performance Steps:

For Power Availability, ensure the following:
- One EDG available
- Offsite power from either the Unit 2 RSST or the Unit 2 NSST.
- At least one of the following additional power sources:
  - SBO diesel and calculated time to boil greater than 60 minute.
  - Unit 3 RSST (or NSST) via 34A or 34B
  - Installed temporary diesel

GRADE ___ ___ Standards:

- *Examinee states that the following power sources are available:*
  - *Both EDGs*
  - *SBO diesel via bus 24E (Time to boil is greater than 60 minutes)*
  - *Unit 2 NSST*
  - *Unit 2 RSST*
  - *Unit 3 NSST via 34a/B*
- *Examinee states that the power score is "6" and the condition color is "green".*

Cue: **Provide the examinee with a copy of OP 2264, Conduct of Outages, with a blank copy of Attachment 2.**

Comments: Only one EDG is required to be available in MODE 5 or 6; therefore, the examinee may only count one EDG for a Power score of "5". The condition color is still "green".

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-1.1S TITLE: **Perform a Shutdown Safety Assessment**

STEP **2** ___ Performance Steps: For RCS Decay Heat Removal, ensure at least one of the following conditions exists:

- Two trains of SDC are available
- One train of SDC is available and all the following:
  - The associated EDG is available
  - Off site power is available from at least one Unit 2 controlled source to the available SDC train
  - Both SGs are available or the refueling cavity level is greater than 35'6"

GRADE ___ ___ Standards:

- *Examinee states that the following systems and components are available for the associated train:*
  - *RWST suction header to available LPSI Pump*
  - *The in service SDC train's emergency AC bus is powered from an off site source (Unit 2 NSST)*
  - *The associated 125 VDC bus is energized from its respective battery and associated battery charger*
  - *An RBCCW Pump is powered from the same facility as the SDC Pump with an RBCCW heat exchanger capable of cooling the associated SDC heat exchanger*
  - *A Service Water Pump is powered from the same facility as the SDC Pump and is capable of supplying cooling waster to the associated RBCCW heat exchanger*
- *Examinee states that two trains of SDC are available for an RCS score of "2" and a condition color of "yellow".*

Cue:

Comments:

- The Steam Generators are NOT available for decay heat removal because the U-tubes have NOT been filled (just entered MODE 5 from MODE 6).
- Makeup from the RWST CANNOT be credited with the vessel head bolted in place.

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-1.1S TITLE: **Perform a Shutdown Safety Assessment**

STEP **3** _X_ Performance Steps: For SFP decay Heat Removal, ensure the following:

- One train of SFPC or SDC is available for SFP cooling
- An on site source corresponding to the available SFP Decay Heat Removal method
- An off site source corresponding to the available SFP Decay Heat Removal method
- SFP level is greater than 35'6"

GRADE ___ _X_ Standards: *Examinee states that the following are available for a SFP Decay Heat Removal score of "0" and a condition color of "red" :*

- *One train of SFPC or SDC is available for SFP cooling*
- *An on site source corresponding to the available SFP Decay Heat Removal method*
- *An off site source corresponding to the available SFP Decay Heat Removal method*
- *SFP level is now less than 35'6" (35'2")*

Cue:

Comments:

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-1.1S TITLE: **Perform a Shutdown Safety Assessment**

STEP **4** ___ Performance Steps: For RCS Inventory Control, ensure at least two of the following are available:

- "A" HPSI PUMP on the "A" HPSI header with a flow path from the RWST to the RCS
- "B" HPSI PUMP on the "A" or "B" HPSI header with a flow path from the RWST to the RCS
- "C" HPSI PUMP on the "B" HPSI header with a flow path from the RWST to the RCS
- "A" Charging Pump with a suction from the RWST or BAST to the RCS.
- "B" Charging Pump with a suction from the RWST or BAST to the RCS.
- "C" Charging Pump with a suction from the RWST or BAST to the RCS.

GRADE ___ ___ Standards: *Examinee states that the following conditions exist for an RCS Inventory Control score of "4" and a condition color of "green":*

- *The "A" and "C" HPSI Pumps are available with a flow path from the RWST to the RCS.*
- *The "A" and "C" Charging Pumps are available.*

Cue:

Comments:

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-1.1S TITLE: **Perform a Shutdown Safety Assessment**

STEP **5** ___ Performance Steps: For SFP Inventory (Makeup) Control, ensure one of the following conditions exist:

- One AFW Pump is aligned to the CST and makeup is available from the RWST via LPSI
- One AFW Pump is aligned to the CST and one of the following additional methods is available:
  - One refuel purification pump
  - One PMW pump
  - Makeup is available from the fire protection system
- Makeup is available from the RWST via LPSI and any one of the following additional methods:
  - One refuel purification pump
  - One PMW pump
  - Makeup is available from the fire protection system

GRADE ___ ___ Standards: *Examinee states that the following conditions exist for a SFP Inventory score of "5" and condition color of "green":*

- *One AFW Pump is aligned to the CST and makeup is available from the RWST via LPSI*
- *One AFW Pump is aligned to the CST and one of the following additional methods is available:*
  - *One refuel purification pump*
  - *One PMW pump*
  - *Makeup is available from the fire protection system*

Cue:

Comments:

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-1.1S TITLE: **Perform a Shutdown Safety Assessment**

STEP **6** ___ Performance Steps: For Containment, ensure one of the following is available:

- Containment Closure is set
- Containment closure is available with a closure team set.

GRADE ___ ___ Standards: *Examinee states that Containment Closure is available with a closure team set for a Containment score of "1" and a condition color of "green".*

Cue:

Comments:

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STEP **7** ___ Performance Steps: If SFP Ventilation System alignment in accordance with Tech Spec LCO 3.9.15 is NOT required, then NA Section VII of Attachment 2.

GRADE ___ ___ Standards:

- *Examinee states that the SFP Ventilation System alignment per Tech Spec 3.9.15 is NOT required because there is NO fuel movement in the SFP.*
- *Examinee marks Section VII, SFP Boundary, as "N/A".*

Cue:

Comments: .

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-1.1S TITLE: **Perform a Shutdown Safety Assessment**

STEP **8** ___ Performance Steps: For Reactivity Control, ensure the following conditions exist:

- All identified dilution paths the RCS, SFP, and refueling cavity are being controlled by procedure or Safety tags.
- RCS and SFP Boron concentrations are being maintained greater than Tech Spec requirements.
- Two of the following makeup sources are available:
  - "A" HPSI PUMP on the "A" HPSI header with a flow path from the RWST to the RCS
  - "B" HPSI PUMP on the "A" or "B" HPSI header with a flow path from the RWST to the RCS
  - "C" HPSI PUMP on the "B" HPSI header with a flow path from the RWST to the RCS
  - "A" Charging Pump with a suction from the RWST or BAST to the RCS.
  - "B" Charging Pump with a suction from the RWST or BAST to the RCS.
  - "C" Charging Pump with a suction from the RWST or BAST to the RCS.

GRADE ___ ___ Standards: *Examinee states that the following conditions exist for a Reactivity Control score of "4" and a condition color of "green":*

- *All identified dilution paths the RCS, SFP, and refueling cavity are being controlled by procedure or Safety tags.*
- *RCS and SFP Boron concentrations are being maintained greater than Tech Spec requirements*
- *The "A" and "C" HPSI Pumps are available with a flow path from the RWST to the RCS.*
- *The "A" and "C" Charging Pumps are available.*

Cue:

- **Inform the examinee that all dilution paths are properly tagged or controlled as required.**
- **If asked, inform the examinee that the SFP has had NO additions since the Transfer Tube Isolation Valve, 2-RW-280, was closed.**

Comments:

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-1.1S TITLE: **Perform a Shutdown Safety Assessment**

Comments: **After the Examinee recognizes the condition is "red", the JPM is considered complete. The critical step is the only step that must be completed.**

STOP TIME: _____

VERIFICATION OF JPM COMPLETION

Job Performance Measure No. JPM-1.1S Rev. 1

Date Performed: _____

Operator: _____

Evaluator(s): _____

For examinee to achieve a satisfactory grade, **ALL** critical steps must be completed correctly. If task is Time Critical, it **MUST** be completed within the specified time to achieve a satisfactory grade.

Time Critical Task? Yes _____ No **X**

Validated Time (minutes): 20

Actual Time to Complete (minutes): _____

Result of JPM: _____ (Denote by an S for satisfactory or a U for unsatisfactory)

Areas for Improvement:

EXAMINEE HANDOUT

JPM ID Number: JPM-1.1S

Initiating Cues:

- As a result of a valve being mispositioned while shifting trains of SFP Cooling, the SFP level has dropped to 35' 2".
- Perform a Shutdown Safety Assessment.

Initial Conditions: The plant is in MODE 6 on day 30 of a scheduled 45 day refueling outage and the fuel shuffle is complete. RCS level has been lowered to 4" above the centerline for RCP seal replacement. RCS Temperature from T-351X indicates 89°F. The RCS Boron concentration is 2193 ppm. The following conditions exist:

- Time to boil is 61.5 minutes.
- Both EDGs are OPERABLE
- A temporary EDG is NOT installed
- The SBO diesel is available
- On site power is being supplied by the backfeeding the Main transformer
- the RSST is available
- Unit 3 NSST is powering buses 34A and B (1-5G-13T-2 and associated disconnect switches are open)
- Both DC buses are OPERABLE
- RWST level is 95.2%
- Both trains of SDC are OPERABLE with the "A" train in service
- Both trains of SFP Cooling are available with the "A" train in service and SFP Temperature is 97°F
- "A" and "C" HPSI Pumps are available
- "A" and "C" Charging Pumps are available
- Both motor driven aux feedwater pumps are aligned to the CST
- The refueling purification pump is in service
- Both PMW Pumps are available with "A" in lead
- The fire system is OPERABLE
- Containment Closure is available with the closure team manned.
- There is NO fuel movement in progress in the SFP.

JOB PERFORMANCE MEASURE APPROVAL SHEET

I. JPM Title: **Tech. Spec. Applicability with Embedded Surveillance**

ID Number: JPM-A1.2S Revision: 0

II. Initiated:

Developer — Date: 8/4/03

III. Reviewed:

Technical Reviewer — Date: 8/5/03

IV. Approved:

User Department Supervisor — Date

Nuclear Training Supervisor — Date: 8/6/03

JOB PERFORMANCE MEASURE WORKSHEET

Facility: MP-2 Examinee: _____

JPM Number: JPM-A1.2S Rev. 0

Task Title: **Tech. Spec. Applicability with Embedded Surveillance**

System: Administrative

Time Critical Task: Yes ____ No X

Validated Time (minutes): 10

Task No.(s): NUTIMS

Applicable To: SRO X RO ____ PEO ____

K/A No.: 2.1.12 K/A Rating: 4.0

Method of Testing:

Simulated Performance: ____ Actual Performance: X

Location:

Classroom: X Simulator: ____ In-Plant: ____

Task Standards: At the completion of this JPM, the SRO should analyze the given conditions and state the required Tech. Spec. entry and surveillance.

Required Materials (procedures,equipment):

- Plant Technical Specifications Manual
- AOP-2556; CEA Malfunctions

General References:

- Plant Technical Specifications Manual
- AOP-2556; CEA Malfunctions

*** * * * READ TO THE EXAMINEE * * * ***

I will explain the initial conditions, which step(s) to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied. You may use any approved reference materials normally available in the Control Room, including logs. Make all written reports, oral reports, alarm acknowledgments, and log entries as if the evolution was actually being performed.

JOB PERFORMANCE MEASURE WORKSHEET

JPM Number: JPM-A1.2S Rev. 0

Initiating Cues:

- As the RO begins to withdraw the Group 7 CEAs, he notes that CEAPDS is not tracking the motion of any of the Group 7 CEAs.
- CEA Pulse Counting and the Backup Scanner tracked CEA motion as designed.
- I&C investigates CEAPDS and explains that the CEAPDS computer has "locked up" and is not capable of tracking any CEA motion at this time.
- Perform the Administrative duties of the US for this malfunction.

Initial Conditions:

- You are the on-shift US.
- The plant is at 98% power having just completed Turbine Control Valve testing.
- Group 7 CEAs were inserted 10 steps for power control and have just been fully withdrawn as indicated by Core Mimic.

Simulator Requirements: N/A

*** * * * NOTES TO EXAMINER * * * ***

1. Critical steps for this JPM are indicated with an "X". For the examinee to achieve a satisfactory grade, **ALL** critical steps must be completed correctly.
2. When examinee states what his/her simulated action/observation would be, read the appropriate "Cue".
3. If necessary, question examinee for details of simulated actions / observations (i.e. "What are you looking at?" or "What are you observing?").
4. Under **NO** circumstances must the examinee be allowed to manipulate any devices during the performance of this JPM (in-plant only).

PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-A1.2S TITLE: **Tech. Spec. Applicability with Embedded Surveillance**

START TIME: _____

STEP **1** X Performance Steps: Given a copy of the plant Technical Specifications Manual and, if requested, AOP-2556, CEA Malfunctions:

- Review the Initial Conditions and Initiating Cue.
- Review Tech. Specs. and, as needed, AOP-2556 for any required entries and additional surveillance requirements.

GRADE ___ X Standards: *Examinee reviews the following:*

- A copy of the plant Technical Specifications Manual

If requested:

- A copy of AOP-2556; CEA Malfunctions

Cue: **Provide a copy of the following:**

- **Plant Technical Specifications Manual.**
- **If requested, AOP-2556; CEA Malfunctions.**

Comments: None

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-A1.2S TITLE: **Tech. Spec. Applicability with Embedded Surveillance**

STEP **2** X Performance Steps: Explain the necessary Tech. Spec. entry requirements and the Tech. Spec. surveillance that must be performed.

GRADE ___ X Standards:

- *During the review of the plant Technical Specifications Manual, the examinee should state the need to enter into Tech. Spec. 3.1.3.1b and perform one of the three required actions.*
- *The examinee should also state the need to record CEA Pulse Counting and Reed Switch Position Indication at least once every four (4) hours.*

Bold →

ref. Surv. # from T.S.A.S.

Cue: • **None**

Comments: *The examinee should **NOT** log into Tech. Spec. 3.1.3.3 or 3.0.3 as they are **NOT** applicable with the Backup Scanner operating as designed.*

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Comments: **After this step is completed, the JPM is considered complete.**

STOP TIME: _____
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VERIFICATION OF JPM COMPLETION

Job Performance Measure No. JPM-A1.2S Rev. 0

Date Performed: _____

Operator: _____

Evaluator(s): _____

For examinee to achieve a satisfactory grade, **ALL** critical steps must be completed correctly. If task is Time Critical, it **MUST** be completed within the specified time to achieve a satisfactory grade.

Time Critical Task? Yes _____ No __X__

Validated Time (minutes): _____10_____

Actual Time to Complete (minutes): _____

Result of JPM: _____ (Denote by an S for satisfactory or a U for unsatisfactory)

Areas for Improvement:

EXAMINEE HANDOUT

JPM ID Number: A1.2S

Initiating Cues:

- As the RO begins to withdraw the Group 7 CEAs, he notes that CEAPDS is not tracking the motion of any of the Group 7 CEAs.
- CEA Pulse Counting and the Backup Scanner tracked CEA motion as designed.
- I&C investigates CEAPDS and explains that the CEAPDS computer has "locked up" and is not capable of tracking any CEA motion at this time.
- Explain the Administrative requirements of this malfunction.

Initial Conditions:

- You are the on-shift US.
- The plant is at 98% power having just completed Turbine Control Valve testing.
- Group 7 CEAs were inserted 10 steps for power control and have just been fully withdrawn as indicated by Core Mimic.

JOB PERFORMANCE MEASURE APPROVAL SHEET

I. JPM Title: **Review and Approve Automated Work Order**

ID Number: JPM-A2.1S Revision: 0

II. Initiated:

Developer 8/4/03 Date

III. Reviewed:

Technical Reviewer 8/5/03 Date

IV. Approved:

User Department Supervisor Date

Nuclear Training Supervisor 8/6/03 Date

JOB PERFORMANCE MEASURE WORKSHEET

Facility: MP-2 Examinee: _____

JPM Number: JPM-A2.1S Rev. 0

Task Title: **Review and Approve Automated Work Order**

System: Administrative

Time Critical Task: Yes ____ No X

Validated Time (minutes): 10

Task No.(s): NUTIMS

Applicable To: SRO X RO ____ PEO ____

K/A No.: 2.2.19 K/A Rating: 3.1

Method of Testing:

Simulated Performance: ____ Actual Performance: X

Location:

Classroom: X Simulator: ____ In-Plant: ____

Task Standards: At the completion of this JPM, the SRO should analyze the given AWO and find incorrect information preventing its release.

Required Materials (procedures,equipment):
- AWO Package
- MP-20-WP-GDL20
- WC 2 (If requested)

General References:
- MP-20-WP-GDL20
- MP-20-WP-GDL30
- WC 2

*** * * * READ TO THE EXAMINEE * * * ***

I will explain the initial conditions, which step(s) to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied. You may use any approved reference materials normally available in the Control Room, including logs. Make all written reports, oral reports, alarm acknowledgments, and log entries as if the evolution was actually being performed.

JOB PERFORMANCE MEASURE WORKSHEET

JPM Number: JPM- A2.1S Rev. 0

Initiating Cues:

- You are the Work Control SRO
- Your job is to evaluate the given Work Package for signature and release.
- Inform the Examiner of your completion of this JPM by discussing the conclusions of your evaluation of the Work Package and your recommendations for approval and release.

Initial Conditions:

- The plant is shutdown for refueling.
- The reactor is defueled and Containment is open for general access.

Simulator Requirements: N/A

*** * * * NOTES TO EXAMINER * * * ***

1. Critical steps for this JPM are indicated with an "X". For the examinee to achieve a satisfactory grade, **ALL** critical steps must be completed correctly.
2. When examinee states what his/her simulated action/observation would be, read the appropriate "Cue".
3. If necessary, question examinee for details of simulated actions / observations (i.e. "What are you looking at?" or "What are you observing?").
4. Under **NO** circumstances must the examinee be allowed to manipulate any devices during the performance of this JPM (in-plant only).

PERFORMANCE INFORMATION

JPM ID NUMBER: JPM- A2.1S TITLE: **Tech. Spec. Applicability with Embedded Surveillance**

START TIME: _____

STEP **1** X Performance Steps: Given a copy of the assembled Work Package:

- Review the Initial Conditions and Initiating Cue.
- Evaluate the Work Package per GDL20, Attachment 9 (Tagging Requirements of WC 2) to ensure there are no errors in procedure, inconsistencies or omissions.

GRADE ___ X Standards:

- Examinee reviews the Initial Conditions and Initiating Cue.
- Examinee evaluates the Work Package for approval and release.

Cue: **Provide a copy of the following:**

- **Initial Conditions and Initiating Cue.**
- **Work Package.**
- **MP-20-WP-GDL20**
- **If requested by examinee, provide a copy of WC 2, Tagging.**

Comments: None

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM- A2.1S TITLE: **Tech. Spec. Applicability with Embedded Surveillance**

STEP **2** X Performance Steps: Explain that a change has been made to the work order that changes the scope of the initial taggout. This change requires mega check of the motor, which per WC-2, **cannot** be performed under a red tag. Therefore, the Work Package **cannot** be signed for release with the existing taggout. megger?

GRADE ___ X Standards:

- *The examinee states that the Work Package **cannot** be signed for release due to a change in the work scope (added megger check of the fan motor).*
- *The examinee may also state the need to change the tag out for the work order, based on the change in work scope.*

Cue:

Comments:

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Comments: **After this step is completed, the JPM is considered complete.**

STOP TIME: _____
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VERIFICATION OF JPM COMPLETION

Job Performance Measure No. JPM- A2.1S_ Rev. 0

Date Performed: _____

Operator: _____

Evaluator(s): _____

For examinee to achieve a satisfactory grade, **ALL** critical steps must be completed correctly. If task is Time Critical, it **MUST** be completed within the specified time to achieve a satisfactory grade.

Time Critical Task? Yes _____ No __X__

Validated Time (minutes): _____10_____

Actual Time to Complete (minutes): _____

Result of JPM: _____ (Denote by an S for satisfactory or a U for unsatisfactory)

Areas for Improvement:

EXAMINEE HANDOUT

JPM ID Number: A2.1S

Initiating Cues:

- You are the Work Control SRO
- Your job is to evaluate the given Work Package for signature and release.
- Inform the Examiner of your completion of this JPM by discussing the conclusions of your evaluation of the Work Package and your recommendations for approval and release.

Initial Conditions:

- The plant is shutdown for refueling.
- The reactor is defueled and Containment is open for general access.

Attachment 7
Tagout Request

FOR TRAINING ONLY

(Sheet 1 of 1)

Note: When this request is used, all sections should be filled out in detail.

Brief Job Description:

CAR FAN MOTOR LUBE EOQL RENEWAL

Work Package Number: M2 02 13552

Component to be isolated (1): F14BM

Multiple isolation points or non-component (i.e.:pipe/tube section): Yes ☐ **No** ☐

(If yes, walkdown required by Tagging Authority)

Recommended Tags

Color	Isolation Point	Position (1)
R/B	B0605 (25203-3008)	open

(1) For Blue Tags indicate initial position or if initial position is not required enter N/A.

Amplifying Instructions:

Contact Person (for multiple shifts, Contact Person is required for each shift) **phone:**

Chad Robertson 5513/6180

Approved By: **Date:** 4/28/03

Knopf/Korineck/Robertson **phone:** 5709/5479/551

Team Leader / Planner / Engineering

Level of Use Information

AWO M2-02-13552

LIB

25

FOR TRAINING ONLY

PEO Review

[Y] [N] AWO Approval Blocks Signed
DEPT Approval
ENG Approval (MF or DC only)
QC Approval (QC = "Y" only)
Security Approval (SEC = "Y" only)

[Y] [N] PMT has proper approvals
FLS
Engineering (DC or MF only)

[Y] [N] Drain permit in place

[Y] [N] Totes available

[Y] [N] Marked up P&ID and/or FE-1 line

[Y] [N] Clearance prepared
AWO Scope requires single valve protection [ ] Yes [ ] No

SRO Review

[Y] [N] Tagging reviewed and Approved
Tagging verified adequate
Single Valve Protection requirements met
CONVEX tagging coordinated

[Y] [N] Security support in place
[Y] [N] Tech Spec/TRM/REMODCM requirements reviewed

[Y] [N] Door attributes verified per OP 3256 (U2) or OP 3261 (U3)

[Y] [N] Fire Watch support in place

[Y] [N] Confined space permit in hold

[Y] [N] Scaffolding Checklist and Evaluation reviewed and compensatory actions in place

[Y] [N] PMT reviewed and is adequate

[Y] [N] Restoration hoeups and procedures enclosed

SHIFT INFO

[Y] [N] Compensatory actions attached [Y] [N] FEG script attached

LCO/TRM/REMODCM Duration: _____

OTHER NOTES

Attachment 1
Pre-Job Brief Checklist

FOR TRAINING ONLY

(Sheet 1 of 2)

AWO NO. M2 02 13552	Planner Rick Bright	Date: 02/19/2003
Team Lead: Knopf/Korineck/Robertson		
Job Leader:		

During Pre-Job Brief, discuss Mandatory Review Items and all other checked items.

Initials	MANDATORY REVIEW ITEMS -Required for each Pre-Job Brief
	* Proper authorization to begin work
	* Review the job description, its evolution and objectives
	* Review job hazard assessment form (MP-19-SH-SAP01-001)
	* Describe equipment and plant response to be expected while performing work (potential plant impact)
	* Assign Lead and individual responsibilities, and verify assignees have sufficient and current qualifiations.
	* Review safety tagout
	* Identify notifications or permission required (Operations, Supporting Departments, etc. ; stick welding may cause smoke detectors to alarm; call control room prior to start of job)
	* QA / ANI hold points
	* Protective clothing (PPE)
	* Overview past experiences on similiar jobs
	* Review OE included in packages (SEE EQR)
	* Confirm procedure revision and change numbers
	* Address worker concerns / questions - specify
	* Address QA material storage (if QA Material used)
	* Review ATT.4 "Vendor/Contractor Responsibilities" as appropriate

Planner	TL	High Risk Activities
☑	☑	
		* Summarize Critical Steps (state of the plant, system or component depends solely on the individual worker, consequences of error is intolerable)
		* Anticipate traps (Error Likely Situations)
		* Evaluate Consequences (If Error Realized)
		* Evaluate Defenses (To Prevent Both Potential Errors and Events)

Planner	TL	ALARA
☑	☑	
		* RWP Requirements / ALARA / ChangingConditions
		* Radiation Precautions

Attachment 1
Pre-Job Brief Checklist
(Sheet 2 of 2)

FOR TRAINING ONLY

AWO: M2 02 13552 **LCID: F14BM**

Planner	TL	Job Description, Prerequisites, and Objectives
✓	✓	
		Engineering Requirements (DCN, CRED, etc.)
		Points/Issues requiring FLS Notification
		Discuss plant's expected time for completion
		Contingency Actions for unanticipated results
		Human Performance discussed for error likely situations, phone locations, eye wash stations nearest to job location
		Discuss methods of communications, other Departments involved with the job and names of Department contacts and numbers to be contacted at.
		Retest requirements
		LCO conditions Maintenance Rule and schedule interface
		Post job brief required

Planner	TL	Procedures / Drawings
✓	✓	
		Discuss partial performance of instructions or out of sequence steps
		Review procedure data recording sheets and/or Maintenance Forms
		Review drawings and other references
		Review procedures to be used, prerequisites, and precautions

Planner	TL	Tools, Parts, and Special Processes
✓	✓	
		Tools identified and available
		Replacement Parts identified and available
		Special tools identified and available
		Processes (machining, welding, etc.)

Planner	TL	Safety Permits, and Special Requirements
✓	✓	
		Fire Watch
		Environmental Permits (Drain Permits, Mixed and Hazardous Waste)
		Security
		Foregin Material Exclusion (FME)
		Check Electrical Energy Source, de-energized (Discuss method / location)
		Electrical separation including placement of electrical cords
		Fire Suppression Area (CO2, Halon)

Attachment 2
Turnover-Brief Checklist

FOR TRAINING ONLY

(Sheet 1 of 1)

AWO NO.	Equipment I.D. No.	Date:
M2 02 13552	F14BM	02/19/2003

FLS: Knopf/Korineck/Robertson		
Job Leader:		
		Continue on reverse side

✓	Checklist
	Conduct face to face turnover whenever possible
	Review Pre-Job Briefing Checklist for job
	Ensure AWO has been updated to reflect work performed
	Discuss current status of job including lifted leads, jumpers installed, valves manipulated, etc.
	Discuss procedure in use including last step performed
	Any problems with data taken?
	Equipment in and out of service
	Review LCOs associated with task including LCO duration and amount of time elapsed
	Location of any parts which have been removed
	Test equipment installed
	Discuss any problems encountered and how resolved
	Impacts on other work in progress or work waiting to start
	Cover any changes in plant status such as work area radiation levels
	Equipment and work area left in safe condition
	Work areas posted with signs indicating status of work and the responsible individual

Attachment 3
Post-Job Brief Checklist

FOR TRAINING ONLY

(Sheet 1 of 2)

AWO NO.	Equipment I.D. No.	Date:
M2 02 13552	F14BM	02/19/2003

FLS: Knopf/Korineck/Robertson		
Job Leader:		

✓	Checklist
	Was task accomplished with the expected results?
	Is this the way the job should be performed in the future?
	Were the procedures accurate/adequate?
	Was the job description correct for the work being performed?
	Were resources and information sufficient?
	Was the training for the job appropriate and effective?
	Were planning and scheduling organized to reduce potential for human error?
	Were work processes effective and supportive?

Attachment 3
Post-Job Brief Checklist

(Sheet 2 of 2)

FOR TRAINING ONLY

VI2 02 13552 F14BM

✓	Comments
	Did Supervision provide the needed support and appropriate guidance?
	Is Supervision aware of conditions (performance traps) that, if not corrected, could lead to human error next time task is performed.
	Is there any way this job could have been done better?
	Was a work planning feedback report filled out?
	Discuss any lessons learned required changes to procedure, AWO, work practices, etc.
	Record material and spare parts used with stock codes.
	Is job site cleaned and in better condition than "As Found"? (i.e., TR Tags removed)
	Are tools, equipment and spare parts returned to proper storage location?
	OTHER CONCERNS, QUESTIONS - (specify below)

Job Hazard Assessment, Part A: **Hazard Control Worksheet**

Page ___ of ___

Work Document Numbers	Work Description / Task Description
M2 02 13552	**CAR FAN MOTOR LUBE EOQL RENEWAL**

FOR TRAINING ONLY

For the work/task described above (check one):

1 ☑ Job hazard items checked "yes" in Part B "Hazard Identification Checklist" are sufficiently controlled by skill of the craft" training and qualifications, Basis PPE or other protectivie measures currently in place (i.e., guardrails, barriers, etc.), and work does not present any lead, asbestos, Heat Stress, or tools not commonly used. No additional protection is prescribed.

2. ☐ Additional job hazard protection warranted (described below).

3. ☐ No workplace Safety Hazards identified.

Cklst Item	Describe Safety Hazards Identified	Hazard Control - Describe how safety hazards will be controlled (Engineering Controls, Administrative Controls, Training/Q List, PPE, Acceptable Risk)

Information below not required provided results of Job Hazard Assessment are documented in AWO system.

Prepared by:	**Rick Bright**	**Planner**	**3978**	**02/19/2003**
	Print Name	Title	Phone	Date
Approved:	**Knopf/Korineck/Robertson**		Elec	4/28/02
	Supervision, Print Name	Sign Name	Title	Date

==> AUXILIARY PLANT SYSTEMS <==

PMMS ID: M2 02 CAR MTR DRV F14B
CAL ID: F14BM
CAL SYS: 2313A
NPRDS: AV F14B
BLDG: CE ROOM: NORTH END FUEL POOL
ELEV: 0000 FT 00 IN GRID: 2384
EQUIP OUTAGE:
TR NO:
P.O. NO:
MIB: MP2RF MX

FOR TRAINING ONLY

WORK ORDER.: M2 02 13552
PRIORITY...: 2
AWO TYPE...: EQ
UNIT STATUS: R MODE: Z2
FREQUENCY..: 18M
GRACE ENTRY: 10 / 01 / 2003
DESIRED CMP: 09 / 01 / 2003
REQ CMP....: 10 / 30 / 2003
PROJ REF...: EQR255-01
SCHED REF..: 2R15
PRINTED: 20030219 15:58:44.5

EQUIP DESC: 'B' CTMT AIR RECIRC. COOLING UNIT FAN MOTOR (MTR HTR BKR LH21-4)

PROBLEM DESC: EEQ, 18 MONTH -- MOTOR LUBRICANT EOQL RENEWAL - THIS SATISFIES THE 4.5 YEAR REQUIREMENT PER EQR255-01

SUSP. CAUSE:
ORIGINATOR: S WALTKE DEPT: WPCG DATE: 11 / 07 / 2002 TR TAG HUNG: N
****
CAT-1...: YES TAGGING: YES
EEQ.....: YES RWP REQ: YES FME.....: 4
STAGING : YES
CTMT ENTRY: YES
SEISMIC: YES
PROCEDURES: 2701F-F014 EQR255-01

CAUTIONS....: MULTI PWR SOURCE
CAUTION.....: NOTE: ALTHOUGH LUBRICANTS FOR EQ MOTORS HAVE
NOTES QUALIFIED LIVES THEY ARE NOT PROCURED EEQ!! change 1
staging Required

JOB TITLE: CAR FAN MOTOR LUBE EOQL RENEWAL
DESC:
1) RENEW MOTOR LUBRICANT PER MP2701F-F014 AND EQR255-01.

TASK	DEPT	EST WKR	EST HR	TASK	DEPT	EST WKR	EST HR
1. LUBE	ELEC	02	0002.0	4.		00	0000.0
2.		00	0000.0	5.		00	0000.0
3.		00	0000.0	6.		00	0000.0

SUPERVISOR: U AUXILIARY JOB LEADER: _____

DEPT APPROVAL: _____ DATE: 4 / 28 / 02

****

3 PRE-APPROVAL: _____ TIME: _____ DATE: __ / __ / ____
TRBLSHT/FABRICATE ONLY

TAG CLEARANCE: _____ LCO: _____ DURATION: _____ JUMPER: _____

PS APPROVAL: _____ TIME: _____ DATE: __ / __ / ____

WORK ORDER: M2 02 13552

****

TAGGING VERIFIED BY: _____

FOR TRAINING ONLY

ACTUAL WORK / PARTS: _____

CAUSE/COMMENTS: _____

FAIL CODE: _____

PERFORMED _ _____ _ _____ _ _____ _ _____

BY: _ _____ _ _____ _ _____ _ _____

M & TE: _____ _____ _____ _____ _____ _____

R NO: _____ _____ _____ _____ _____ _____

CAL DUE: __/__/____ __/__/____ __/__/____ __/__/____ __/__/____ __/__/____

WORK COMPLETE: _____ COMP DATE: __ / __ / ____ TR TAG REMOVED: N/A

RETURN CODE: 5Q22 RELEASE CODE: 5B22 PMT BY MODE:

****

POST MAINTENANCE TESTING/FUNCTIONAL VERIFICATION METHOD/PROCEDURE

N/A - GREASING ONLY

PMT RESULTS DATA

ACCEPT CRITERIA:

PERFORMED BY: _____ DEPT: ____ DATE: __ / __ / ____ SAT / UNSAT

PERFORMED BY: _____ DEPT: ____ DATE: __ / __ / ____ SAT / UNSAT

****

WO REMOVED FROM TAG CLEARANCE BY: _____ DATE: __ / __ / ____ TIME: _____

ACCEPTED BY OPS: _____ DATE: __ / __ / ____

PMMS REVIEW: _____ DATE: __ / __ / ____

FOR TRAINING ONLY

NUCLEAR INDICATORS:
CAT1.....: Y EVALCD: 1414-502
PQA.....: N
RWQA.....: N
ATWS.....: N
SBOQA....: N PEND:

SAFETY FUNCTION CODE: AUTO

SAFETY FUNCTION DESCRIPTION:
MUST START AND OPERATE TO PROVIDE FLUID FLOW

PROGRAM INDICATORS:
APPEN J..: N HELB.....: N E/C: N FP.....: N
APPEN R..: N ERDS.....: N IST: N MOV TEST..: N SEISMIC...: Y
CHECK VLV: N HEAVY LOADS: N SBO: N RG 1.97...: N SECTION XI: N
EEQ.....: Y LIFE...: 00000 SERVICE DATE: 00/00/0000 ZONE: -
MNTC RULE: Y MR CLASS: RS UA

REFUEL CODE: 2R152AXP313A00313A00

	TASK	DEPT	# WKR	WKRHR
1.	LUBE	ELEC		
2.				
3.				
4.				
5.				
6.				

Att ment 2 Work Order Change R rd

(Sheet 1 of 1)

FOR TRAINING ONLY

Work Order Change Record	Work Order Number: M2-02-13552	Change Number: 1
☒ Change Affects PMT	PMMS Local ID: F14BM	Date: 6-6-03
Non-Recurring Work Orders only ☐ Change Affects Work Order Type	Old Work Order Type:	New Work Order Type:
Recurring Work Orders only ☒ One Time Change	Admin. Work Order No.: (used to close out PM Recurring Work affected by a "one time" change)	

Change Description: NEED TO MEGGER LOW SPEED WINDING DUE TO FAILURES IN THE INDUSTRY

APPROVALS - Print name , sign, and date as applicable, otherwise enter "N/A".

Where changes to a Non-QC Work Order result in QC work, Nuclear Oversight approval signatures below indicates QC approval to continue QC work using a Non-QC Work Order.

OPS	Perf. Dept or Lead Dept. FLS: [signature]
Nuclear Oversight N/A	Design/Test Engineer N/A
Planner: S. Nakl	ANI, ANII, Other (describe): N/A

Attachment 2.2 Work Order Continuation Sheet

Sheet 1 of 1

FOR TRAINING ONLY

Use as needed to supplement Work Orders.

Alpha-numerically number each Continuation Sheet in sequence following Work Order page to which it applies.
Example - 3 Continuation Sheets to Work Order page 2 are numbered: 2a of 2c, 2b of 2c, and 2c of 2c

Work Order Number: M _____ - _____ Sheet ____ of ____

FOR TRAINING ONLY

John S. Kleman	2/7/90	2-90-10
APPROVED: UNIT 2 SUPERINTENDENT	EFFECTIVE DATE	PORC MTG NO

LUBRICATION INFORMATION SHEET

EQUIPMENT DESCRIPTION:		APPLICABLE ID's:
Containment Air Recirculation Fan		**F14A, B, C, & D**
COMPONENT PART TO BE LUBRICATED:	REQUIRED LUBRICANT:	TOTAL QUANTITY:
Motor Bearing, (Upper)	**Mobilux EP2**	**1 Fitting**
Motor Bearing, (Lower)	**Mobilux EP2**	**1 Fitting**

SPECIAL CONDITIONS OR EQUIPMENT:

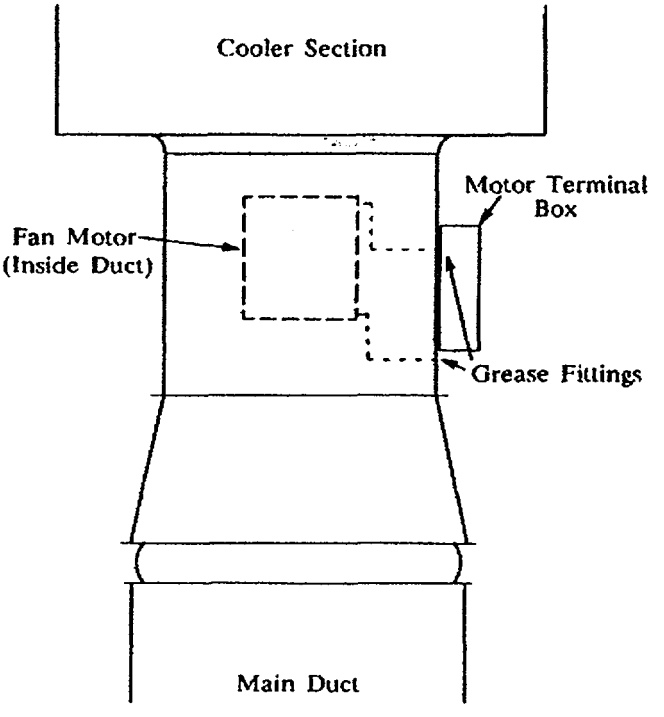
Upper Bearing Grease Fitting on the A, B, & C Fans are located inside the Motor Terminal Box, Flat Tip Screwdriver (3 1/2 -4" long) required to release captive type screws to remove cover.

INSTRUCTIONS:

CAUTION

Exercise caution when working in and around the Motor Terminal box with the cover removed. Fan should be safety tagged to remove cover.

1. If necessary, remove Motor Terminal Box Cover.
2. Wipe grease fitting clean.
3. Pump 2 shots of grease into fitting.
4. Wipe up any excess grease.
5. If removed, replace Motor Terminal Box Cover.



JOB PERFORMANCE MEASURE APPROVAL SHEET

I. JPM Title: **Radiological Assessment and Task Supervision**

ID Number: JPM-A3.1S Revision: 0

II. Initiated:

Robert L. Cimmino, Jr. 8/4/03
Developer Date

III. Reviewed:

Technical Reviewer 8/5/03
Date

IV. Approved:

User Department Supervisor Date

Nuclear Training Supervisor 8/6/03
Date

JOB PERFORMANCE MEASURE WORKSHEET

Facility: MP-2 Examinee: _____

JPM Number: JPM-A3.1S Rev. 0

Task Title: **Radiological Assessment and Task Supervision**

System: Administrative

Time Critical Task: Yes ____ No X

Validated Time (minutes): 10

Task No.(s): NUTIMS

Applicable To: SRO X RO ____ PEO ____

K/A No.: 2.3.2 K/A Rating: 2.9

Method of Testing:

Simulated Performance: ____ Actual Performance: X

Location:

Classroom: X Simulator: ____ In-Plant: ____

Task Standards: At the completion of this JPM, the SRO should analyze the given conditions and designate which PEO should perform each of the two specified tasks, based on the radiological concerns of each.

Required Materials (procedures, equipment):

- If requested, RPM 5.2.2; Basic Radiation Worker Responsibilities.

General References:

- RPM 5.2.2; Basic Radiation Worker Responsibilities
- Radiation Worker CBT

*** * * * READ TO THE EXAMINEE * * * ***

I will explain the initial conditions, which step(s) to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied. You may use any approved reference materials normally available in the Control Room, including logs. Make all written reports, oral reports, alarm acknowledgments, and log entries as if the evolution was actually being performed.

JOB PERFORMANCE MEASURE WORKSHEET

JPM Number: JPM-A3.1S Rev. 0

Initiating Cues: Determine which PEO (#1 or #2) you are going to direct to perform the task of clearing the tag-out and perform the initial valve lineup and which PEO you are going to assign to perform the required valve lineup second check.

Initial Conditions:

- You are the Work Control SRO.
- The plant has been shut down to repair a leak in the CVCS Regenerative Heat Exchanger.
- The work is complete and the Heat Exchanger is ready to be returned to service, following the clearing of the tags and subsequent required valve lineups.
- The following additional conditions exist:
  - The area around the Heat Exchanger has been posted as a "Locked High Radiation Area".
  - The area is at the minimum radiation level to meet the required posting.
  - All valves on the valve lineup are in the posted area.
  - There are two PEOs available to do the tag removal, initial valve lineup and the second check of the valve lineup.
  - PEO #1, an experienced Operator, has an annual exposure of 1600 mRem.
  - PEO #2, a newly qualified Operator, has an annual exposure of 1150 mRem.
  - It will take PEO #1 approximately 30 minutes of stay time in the posted area to clear the tags and perform the initial valve lineup. It will take PEO #2 approximately 45 minutes of stay time to perform the same task.
  - It will take PEO #1 approximately 15 minutes of stay time in the posted area to perform the valve lineup second check. It will take PEO #2 approximately 25 minutes of stay time to perform the same task.

Simulator Requirements: N/A

*** * * * NOTES TO EXAMINER * * * ***

1. Critical steps for this JPM are indicated with an "X". For the examinee to achieve a satisfactory grade, **ALL** critical steps must be completed correctly.

2. When examinee states what his/her simulated action/observation would be, read the appropriate "Cue".

3. If necessary, question examinee for details of simulated actions / observations (i.e. "What are you looking at?" or "What are you observing?").

4. Under **NO** circumstances must the examinee be allowed to manipulate any devices during the performance of this JPM (in-plant only).

PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-A3.1S TITLE: **Required Notification of Outside Agencies**

START TIME: _____

STEP **1** X Performance Steps:

- Review the Initial Conditions and Initiating Cue.
- Using known ALARA considerations and the expected exposure rate in the area, calculate the available stay time for each PEO.
- Based on available stay time, decide which PEO must perform each task.

GRADE ___ X Standards:

- Based on ALARA considerations, PEO exposure limit is 2000 mR/yr.
- Therefore, PEO #1 only has 400 mR of exposure left and PEO #2 has 850 mR of exposure left.
- The minimum radiation level for a Locked High Radiation area is 1000 mR/hr.
- Therefore, based on the available exposure for each PEO and the expected radiation levels at the job site, the maximum stay time for PEO #1 is approximately 24 minutes.
  (400 mR / 1000 mR/hr. * 60 min/hr. = 24 minutes)
  And 51 minutes for PEO #2
  (850 mR / 1000 mR/hr * 60 min/hr. = 51 minutes)

Cue: **Provide a copy of the following if requested:**

- **Copy of RPM 5.2.2; Basic Radiation Worker Responsibilities**

Comments: None

~~~~~~
~~~~~~

PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-A3.1S TITLE: **Required Notification of Outside Agencies**

STEP **2** X Performance Steps: Explain the following:

- PEO #1 does not have enough exposure left to clear the tags and perform the initial valve lineup.
- PEO #2 has enough exposure to clear the tags and perform the initial valve lineup. Then, PEO #1 will have enough exposure left to perform the valve lineup second check.

The examinee may also state the following, but it is not required:

- PEO #2 does not have enough exposure left to perform both tasks, clearing the tagout and performing both valve lineups (this would also not meet the "Second Check" Administrative Requirements).

GRADE ___ X Standards: Based on the calculated stay times for each PEO and the individual task time requirements, PEO #2 is assigned to clear the tags and perform the initial valve lineup, while PEO #1 is assigned to perform the valve lineup second check.

Cue: **None**

Comments:

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Comments: **After this step is completed, the JPM is considered complete.**

STOP TIME: _____
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

VERIFICATION OF JPM COMPLETION

Job Performance Measure No. JPM-A3.1S Rev. 0

Date Performed: _____

Operator: _____

Evaluator(s): _____

For examinee to achieve a satisfactory grade, **ALL** critical steps must be completed correctly. If task is Time Critical, it **MUST** be completed within the specified time to achieve a satisfactory grade.

Time Critical Task? Yes _____ No __X__

Validated Time (minutes): _____20_____

Actual Time to Complete (minutes): _____

Result of JPM: _____ (Denote by an S for satisfactory or a U for unsatisfactory)

Areas for Improvement:

EXAMINEE HANDOUT

JPM ID Number: A3.1S

Initiating Cues: Determine which PEO (#1 or #2) you are going to direct to perform the task of clearing the tag-out and perform the initial valve lineup and which PEO you are going to assign to perform the required valve lineup second check.

Initial Conditions:

- You are the Work Control SRO.
- The plant has been shut down to repair a leak in the CVCS Regenerative Heat Exchanger.
- The work is complete and the Heat Exchanger is ready to be returned to service, following the clearing of the tags and subsequent required valve lineups.
- The following additional conditions exist:
  - The area around the Heat Exchanger has been posted as a "Locked High Radiation Area".
  - The area is at the minimum radiation level to meet the required posting.
  - All valves on the valve lineup are in the posted area.
  - There are two PEOs available to do the tag removal, initial valve lineup and the second check of the valve lineup.
  - PEO #1, an experienced Operator, has an annual exposure of 1600 mRem.
  - PEO #2, a newly qualified Operator, has an annual exposure of 1150 mRem.
  - It will take PEO #1 approximately 30 minutes of stay time in the posted area to clear the tags and perform the initial valve lineup. It will take PEO #2 approximately 45 minutes of stay time to perform the same task.
  - It will take PEO #1 approximately 15 minutes of stay time in the posted area to perform the valve lineup second check. It will take PEO #2 approximately 25 minutes of stay time to perform the same task.

MILLSTONE NUCLEAR POWER STATION
HEALTH PHYSICS OPERATIONS PROCEDURE

Basic Radiation Worker Responsibilities

RPM 5.2.2

Rev. 010

STOP THINK ACT REVIEW

Approval Date: 03/20/03

Effective Date: 05/29/03

Level of Use
Information

Millstone All Units
Health Physics Operations Procedure

Basic Radiation Worker Responsibilities

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Level of Use
Information

1. INSTRUCTIONS

1.1 Basic Guidelines for Work in the RCA

Personnel are required to comply with instructions issued by Health Physics concerning radiation protection matters, such as orders to stop work involving radiation exposure and radioactive material. These instructions may be verbal or written.

The following sections discuss good radiological work practices to be used by Radiation Workers when working in the Radiological Control Areas at Millstone Station. This procedure contains sound radiation protection principles and work practices that, when followed by the worker, achieve occupational doses that are as low as reasonably achievable (ALARA). Information contained in this procedure can be printed or distributed in any medium, such as a handbook.

1.2 Your Rights

You have the right to request a written report of your current radiation exposure. The Health Physics (HP) Department, or your supervisor, will provide you with this information. This report is issued to each worker annually, or upon termination of employment.

You have the right to know the radiological conditions of the area in which you are working. Radiological postings alert plant personnel to the presence, magnitude, and boundaries that are associated with the radiological conditions encountered at Millstone Station. Postings should provide personnel sufficient information to minimize their exposure to radiation. This information will be provided to you by the applicable HP department.

You have the right to bring any concern, safety or otherwise, to the attention of your supervisor without fear of retaliation or discrimination. If at any time you do not feel comfortable talking about the matter with your immediate supervisor, you may talk to an Employee Concerns representative, or directly with the NRC.

1.3 Your Responsibilities

It is your responsibility to know your available exposure and maintain your exposure ALARA. Know your RWP number and Job Step. Review your RWP and know your RWP dose limits. HP will provide the information, but it is up to you to use it.

- Comply with all radiological postings and signs. If you need a boundary repositioned, contact HP. It is a violation for you to move it yourself without HP authorization.
- If the work scope or radiological conditions change, stop work, leave the area, and contact HP.
- Comply with all HP verbal or written Stop Work orders.
- Minimize the amount of materials taken into the RCA.
- Report all unusual occurrences within the RCA and radiological deficiencies to HP.

In the case of a station emergency, follow the instructions of Station Emergency Response Organization (SERO).

1.4 Medical Concerns

If you have an open sore or injury, see HP prior to entering the RCA. Health Physics and Medical personnel may restrict your entry to the RCA when it is in the best interest of your health and well being. Depending on wound severity, you may not be permitted into a radiological control area, or you may be required to take additional precautions for entry such as extra bandages, gloves or other coverings. If an injury occurs while working in the RCA which results in cuts or abrasions, exit the area and notify Health Physics.

Your response to a medical emergency will depend upon the severity of the injury or illness, the area of the plant that the injury took place, and your own medical training. Minor problems are routinely handled at the health facility. If an injury occurs while inside a radiological control area, HP will assist you exiting the area. If a true medical emergency occurs, such as heat stroke, serious injury or severe illness, the immediate welfare of the individual takes precedence over routine radiological controls. Contamination and radiation controls will be considered, but will not interfere with the individual receiving care as rapidly as possible. EMTs at Millstone can be almost anywhere on site within about 8 minutes.

1.5 Radiopharmaceuticals [✣ Comm. 3.1]

If you are scheduled for a medical treatment or diagnostic using radiopharmaceuticals (nuclear medicine), turn in your TLD prior to treatment, if possible. When you return to work report to the HP Department. You will be restricted from RCA access until you can clear the monitoring equipment. Health Physics Supervision can grant access to the RCA for critical work. This access will require pre and post job whole body counts. If not already turned in, your TLD will be collected and HP will then issue you a memo which will allow you to pass through the radiation monitoring equipment at the Security Access Points, even though you are likely to cause an alarm. Carry these memo with you until the end of the exemption period, at which time, report to HP for reevaluation.

1.6 Exposure

Dose – The amount of radiation exposure one receives is referred to as dose. The unit of measure for dose received is called the rem. It is a measure of the biological effect that the radiation has on living tissue. Generally, a fractional unit of the rem is used: the millirem (mrem). One mrem is 1/1000th of a rem. This idea is similar to the use of meters and millimeters to describe length, or grams and milligrams for mass.

Dose Rate – Just as miles–per–hour is an expression of travel rate, mrem–per–hour is an expression of dose rate. You must understand dose rate in order to be able to read survey maps, and work within Radiation areas. Dose is an amount of radiation. Dose rate is an amount of radiation per hour.

Radon – Radon is a naturally occurring radioactive gas that comes out of the earth's crust or ground water and tends to concentrate in basements and tightly constructed buildings, especially when ventilation flow is poor. It has the electrostatic ability to attach itself to plastics and polyester fabrics. Radon is found in homes, schools, office buildings, churches, and train stations. We routinely monitor for radon and are able to detect it in the buildings on site, even though the hazards associated with exposure to radon are extremely low. The sensitivity of our equipment is so high we often experience nuisance alarms while exiting the RCA. This gives false indications of radioactive contamination on individuals. If you have any questions concerning radon, contact HP for additional information.

Stay Times – Stay times are established by HP when a worker may be approaching an exposure limit, or when the dose rate is such that an administrative limit would be met or exceeded in a relatively short period of time. A stay time is an amount of time that a worker can remain in a Radiation or High Radiation area without exceeding any exposure limit.

Contamination – Contamination can take various forms: fixed, loose, airborne and discrete (hot) particles. The terms 'personnel contamination' and 'internal contamination' are used to describe contaminated people. Both types of contamination, if in large enough amounts, may result in dose to the individuals.

Radiation Exposure Limits – Federal limits have been established by the NRC for radiation exposure. These limits are given in the Code of Federal Regulations, 10CFR20. Administrative limits have been established to keep from exceeding the federal limits. These two limits are:

Federal Limits And Administrative Guidelines For Adults		
	Federal Dose Limits	Administrative Guidelines
Whole Body (TEDE)	5 rem/year	from MP site – 2 rem/year
Whole Body (TEDE)	5 rem/year	from all licenses – 3 rem/year
MP Lifetime Dose >age	N/A	1000 mrem/year
Skin (SDE)	50 rem/year	N/A
Extremities	50 rem/year	N/A
Eyes	15 rem/year	N/A
Organs (TODE)	50 rem/year	N/A
Embryo/Fetus (Declared Pregnant Worker)	0.5 rem/term	0.5 rem/term or 50 mrem/month
Expected Pregnant Worker	N/A	500 mrem/quarter
Planned Special Exposures (PSE)	5 rem/yr or 25 rem/Lifetime TEDE	N/A
System Radiation Worker	N/A	1000 mrem/year
Plant Access Radiation Worker	N/A	500 mrem/year

Prenatal Exposure Policy – Millstone Power Station has established policies to limit exposure during pregnancy or for a planned pregnancy. Additional information concerning prenatal exposure, and the proper

forms for declaring pregnancy or expected pregnancy, are provided by the HP department.

- *Declared Pregnant Policy*: A worker who is pregnant may choose to declare her pregnancy by notifying her supervisor in writing about her condition. To do this, the worker must submit a statement estimating the conception date. The supervisor in turn would notify the Dosimetry Department to place the worker in the "Declared Pregnant Category."

- *Expected Pregnant Policy:* A worker who expects to become pregnant in the near future and would like to be placed in the Expected Pregnancy Category, must submit a request to her supervisor. The supervisor in turn would notify the Dosimetry Department to place the worker in the "Expected Pregnant Category." The worker must submit a new request every 60 days to remain in this category.

Declared or Expected pregnant workers will not be required to engage in work that requires entry into any posted airborne radioactivity area or any area requiring the use of protective clothing or respiratory protection. Millstone employees in either category will usually be reassigned within their department to allow continued employment with reduced exposure. If reassignment is not possible, the pregnancy may be treated as a disability. For contracted employees, it is a matter to be resolved between the employee and their employer.

1.7 ALARA: As Low As Reasonably Achievable

Closely monitoring the dose you receive will help you maintain your exposure As Low As Reasonably Achievable – ALARA. It is Millstone's policy, as well as the law, that all exposures be kept not only within regulatory limits, but ALARA. The primary means of reducing exposure to workers are Time, Distance, and Shielding.

ALARA Goals:

- maintain personnel exposures below federal limits
- eliminate exposure that is not necessary, and
- maintain *necessary* exposures As Low As Reasonably Achievable.

Minimize Time: The most important thing a worker can do is plan the job. Planning your job will minimize time spent in radiation areas. Reducing time spent in radiation areas reduces exposure. Proper planning should include:

- Make sure you have all the proper tools and equipment prior to entering the work area.
- Be familiar with the job and equipment, review repair manuals, diagrams, photographs, procedures, work orders and RWPs before entering the area.
- Know the radiation levels and component locations prior to entering the area, plan your route, your low dose area and where standby personnel, if needed, should wait.
- Perform mockups of new processes, tools, or methods identifying any problems before actually using them in radiation areas.
- Complete as much work as possible outside of RCAs. This can include preassembly and prefabrication.

Maximize Shielding: Shielding is a third method of reducing exposure. Increasing shielding decreases dose rate. Thick concrete walls, metal piping, pools of water, and thick steel vessels all form permanent shielding. Plan your job to allow you to use plant structural components as shielding. Concrete blocks, lead sheets, lead blocks, lead blankets, and water–filled containers are examples of temporary shielding.

The use of temporary shielding is determined by ALARA and Engineering Departments. They determine when, where, and how much shielding to use for any given situation. Anyone may submit a temporary shielding request to the ALARA Coordinator, but you must never add or remove temporary shielding without the approval of the ALARA Coordinator.

Respiratory Protection and ALARA: Respirators reduce internal exposure by filtering out radionuclides entrained in the air, but using them may slow workers down. This sometimes results in higher external dose due to the increased time spent in the radiation area. This is *not* ALARA. The ALARA Program considers the TEDE (total dose, both internal and external), for the whole job. Because of this, respiratory protection use for radiological purposes has been greatly reduced.

All individuals have an important role in exposure control and reduction efforts.

- Managers participate by ensuring proper job and project planning and by supporting exposure reduction efforts.

- First line supervisors and job leaders participate by carefully planning radiation work and providing the tools, equipment, training, access control, convenience items, and leadership necessary to perform this work in a manner that would reduce exposure. They also participate by performing ALARA job reviews with the assistance of ALARA personnel and ensuring that all exposure controls specified for the job are implemented. Following jobs, supervisors should solicit and document feedback from the workers and provide the feedback to the ALARA Coordinator.
- Individual radworkers participate in exposure control by taking responsibility for their own exposure at the job site and employing the exposure controls specified for the job.
  - Avoid rework
  - Control work crew size and use low dose area for waiting while in the RCA.
  - Ensure all preparations have been made prior to entering the RCA.

If you think of ways to reduce your exposure, tell your supervisor, HP, or the ALARA Coordinator.

1.8 **Dosimetry**

Health Physics may impose restricted access to the RCA due to dosimetry device status, abnormalities and exposure accumulation.

Thermoluminescent Dosimeter (TLDs): – The TLD used at Millstone records and differentiates between beta, gamma, and neutron radiation. It is used to record your permanent dose. The beta window is covered by a thin mylar film. If you notice that the mylar is damaged or missing, bring the TLD to HP. The thin window on the TLD points away from the body and is worn on the outside of clothing except when wearing full protective clothing, or directed otherwise by Health Physics. When applicable for specific work activities, Health Physics will provide special dosimetry instructions. Health Physics will instruct personnel if dosimetry is to be moved to any other position.

TLD Issue and Return: – Dosimetry is issued to the station population on a quarterly basis, normally the first workday of January, April, July, and October. At this time the last quarter's TLD is exchanged for a new TLD. Special dosimetry (i.e., multiple badging and extremity TLDs) is returned to the Dosimetry Office after use. Prior to trips to other nuclear facilities, notification to the Dosimetry Office is required. When employment is terminated, all dosimetry is returned to the Dosimetry Office.

Electronic Dosimeter (ED): – The ED is a self–reading electronic device that works in conjunction with the ED reading stations to measure, record, and display a workers gamma dose and dose rate.

A correctly operating ED will have a number displayed in the LED, which is the dose the Radworker has received. Pressing the ED button will temporarily display the dose rate in the area in which the Radworker is working. As the worker spends time in the area, the dose recorded by the ED will increase, while the display dose rate will vary as the worker moves about in the radiation area.

Do not rely on electronic dosimetry alarms to warn you that it is time to leave. Check your dose periodically. Be sure to look at your ED more frequently in high noise areas or when the audible alarm may be muffled by protective clothing.

The extremity (finger) TLD, when issued is worn on the pinkie finger with the chip facing the source or as directed by Health Physics. This will minimize crushing or damaging the extremity chip.

An alarming ED will display a red flashing light in addition to the audible alarms.

- If your ED alarms (dual tone and intermittent chirp), move to lower dose rate area. If it continues to alarm, exit the area immediately and contact HP.
- Do not cover the speaker of a ED, you will not be able to hear the alarms.
- Do not remove your ED to use as a survey meter. The ED must remain attached to your body to ensure accurate measurement of your dose.

Wearing Dosimetry – Since dosimetry devices measure your exposure to radiation, remember to wear your dosimetry each and every time you enter an RCA. You must wear your dosimetry on the upper front portion of your body unless told otherwise by the HP Department. Dosimetry is not to be worn on the belt or at the belt line.

NOTE

A method of wearing your dosimetry is to attach it to a break away lanyard. Remember, always keep all dosimetry devices within about a hands width of each other and on your upper torso.

In some cases HP may require that multiple placement dosimetry or finger rings be used. Instructions for their use will be provided by HP at that time.

Do not move dosimetry to other parts of your body unless instructed to do so by HP.

Dosimetry Care And Storage – Your dosimetry is accurate, compact, and sturdy, but was not built to withstand abuse. For it to measure, track, and display your radiation exposure accurately, you must exercise care when using it. Remember these tips:

- Electronic dosimetry has been known to be sensitive to extreme cold, mechanical shock, covering the speaker, and erratic behavior near arc welding machines.
- If you have dropped or jarred your electronic dosimeter, check it closely. If it appears to give faulty or unexpected information, leave the area immediately and contact HP before signing out electronically.
- Dropping a TLD has no effect on its recorded dose, but could crack the plastic case.
- Return your ED each time you exit to the RCA exit storage areas, unless authorized by the Radiation Protection Manager.
- Wear your TLD and ED properly at all times while at work in the Protected Area, that is; on your upper torso within a hands width of each other.
- Store your TLD safely at home when off work. This is done to allow for the correct background radiation values to be applied.
- When going to another site where you will be monitored, notify the Dosimetry Office.

1.14 Radiological Area Postings and Entry Requirements

Radiological postings are required by 10CFR20. Radiological postings are placed at the entrance to an area to inform workers of the conditions present. Usually the postings are yellow and magenta. You are required to comply with all postings. With the exception of entrance barriers designed for personnel access, only HP personnel are allowed to move postings or stanchions. When entering or leaving a posted area, ensure barriers are returned to the correct position. Unauthorized relocation or defacing of radiological postings and boundaries may result in regulatory action including fines and disciplinary action to the individual.

A **Restricted Area** is an area where access is limited for the purpose of protecting individuals from exposure to radiation and radioactive material.

A **Radiological Control Area (RCA)** is an area where personnel may be exposed to radiation or radioactive material. Eating, drinking, smoking and chewing are not allowed inside the RCA. The following conditions are required for all entries to the RCA.

- With the exception of RCA visitors, TLDs must be worn by all personnel entering an RCA.
- Workers must be signed in on an RWP (with few exceptions) and must follow instructions as specified on the RWP or by HP.
- Be aware of the radiological conditions in the area prior to entry.
- Workers exiting RCAs must perform a whole body frisk.

Table 1. – Definitions and Entry Requirements for Areas Within the RCA							
	Definition	ED/TLD	Dose Rate Meter	Continu-ous Coverage	Pre-job-briefing	PCs	Other requirements
Rad Area	> 5 mrem/hr	✓					
High Rad Area	> 100 mrem/hr	✓1	✓1	✓1	✓		
Tech Spec Locked High Rad Area (TSLHRA)	> 1000 mrem/hr	✓1	✓1	✓2	✓		Sign on specific RWP Job Task. Tech Specs require entrances to LHRA remain locked or continuously guarded.
Tech Spec High Rad Area (TSHRA)	≥ 1000 mrem/hr	✓1	✓1	✓2	✓		Sign on specific RWP Job Task. Tech Specs require the area to be continuously guarded or barricaded, conspicuously posted and a flash-ing light activated.
Very High Rad Area (VHRA)1	≥ 500,000 mrad/hr	✓1	✓1	✓	✓		Sign on Special RWP. A written pro-cedure & a key for the unique lock.
Hot Spot	≥ 100 mrem/hr & 5X general area dose rate	✓					
Contaminated Area	≥ 1000 dpm/100cm^2	✓				✓	
Hot Particle Area		✓				✓	
Airborne Activity Area	30% of DAC	✓					

NOTE

1 – Have one or more of the following:

- Dose rate meter
- Alarming Dosimeter and knowledge of area dose rates (EDs are still required as secondary dosimetry)
- Continuous HP Coverage

2 – Or be cognizant of allowable stay time

Other Radiation Protection Signs – The HP Department at times uses other signs to assist workers in RCAs. These other signs may assist a worker to comply with procedures, provide information, or help to keep exposure ALARA.

- Compliance signs remind workers of important rules which must be followed. One example of a compliance sign reminds workers that a Locked High Radiation Area door must be locked.
- Information signs help workers complete tasks properly. Examples of information signs include the signs posted at Step Off Pads instructing workers how to remove PCs and signs at friskers reminding the worker of the proper method of frisking.
- ALARA signs inform the worker of general area dose rates that are higher or lower than the rest of the area. A worker can use these signs to find the best places to stand.

JOB PERFORMANCE MEASURE APPROVAL SHEET

I. JPM Title: **Required Notification of Outside Agencies**

ID Number: JPM-A4.1S Revision: 0

II. Initiated:

Robert L. Cimmino, Jr. 8/4/03
Developer Date

III. Reviewed:

Richard J. Valley 8/5/03
Technical Reviewer Date

IV. Approved:

User Department Supervisor Date

Nuclear Training Supervisor 8/6/03
Date

JOB PERFORMANCE MEASURE WORKSHEET

Facility: MP-2 Examinee: _____

JPM Number: JPM-A4.1S Rev. 0

Task Title: **Required Notification of Outside Agencies**

System: Administrative

Time Critical Task: Yes ____ No X

Validated Time (minutes): 10

Task No.(s): NUTIMS

Applicable To: SRO X RO ____ PEO ____

K/A No.: 2.4.30 K/A Rating: 3.6

Method of Testing:

Simulated Performance: ____ Actual Performance: X

Location:

Classroom: X Simulator: ____ In-Plant: ____

Task Standards: At the completion of this JPM, the SRO should analyze the given conditions and state the required notifications to outside agencies.

Required Materials (procedures, equipment):
- RAC-14; Non-Emergency Station Events
- COP-200.5 Oil, Hazardous Material, Hazardous Waste, and Mixed Waste Contingency Plan
- If requested, 10CFR50.72; Immediate Notification Requirements

General References:
- RAC-14; Non-Emergency Station Events
- COP-200.5 Oil, Hazardous Material, Hazardous Waste, and Mixed Waste Contingency Plan
- 10CFR50.72; Immediate Notification Requirements

*** * * * READ TO THE EXAMINEE * * * ***

I will explain the initial conditions, which step(s) to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied. You may use any approved reference materials normally available in the Control Room, including logs. Make all written reports, oral reports, alarm acknowledgments, and log entries as if the evolution was actually being performed.

JOB PERFORMANCE MEASURE WORKSHEET

JPM Number: JPM-A4.1S Rev. 0

Initiating Cues:

- An oil leak on a pressure sensor resulted in a trip of the "B" Main Feedwater Pump.
- The reactor was manually tripped and the crew performed EOP-2525, Standard Post Trip Actions.
- All other systems functioned as expected.
- The oil (about half a gallon) was completely contained on the Turbine deck floor and was cleaned up within one hour.
- Perform the required notifications to outside agencies.

Initial Conditions:

- You are the on-shift SM.
- The plant was operating normally at 50% power to make repairs to the secured "A" Main Feedwater Pump.

Simulator Requirements: N/A

*** * * * NOTES TO EXAMINER * * * ***

1. Critical steps for this JPM are indicated with an "X". For the examinee to achieve a satisfactory grade, **ALL** critical steps must be completed correctly.
2. When examinee states what his/her simulated action/observation would be, read the appropriate "Cue".
3. If necessary, question examinee for details of simulated actions / observations (i.e. "What are you looking at?" or "What are you observing?").
4. Under **NO** circumstances must the examinee be allowed to manipulate any devices during the performance of this JPM (in-plant only).

PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-A4.1S TITLE: **Required Notification of Outside Agencies**

START TIME: _____

STEP **1** X Performance Steps: Given a copy of RAC-14 and COP-200.5:

- Review the Initial Conditions and Initiating Cue.
- Review RAC-14 for any required notifications to outside agencies.

GRADE ___ X Standards: *Examinee requests the following:*

- A copy of RAC-14; Non-Emergency Station Events
- A copy of COP-200.5; Oil, Hazardous Material, Hazardous Waste, and Mixed Waste Contingency Plan
- If requested, A copy of 10CFR50.72; Immediate Notification Requirements

Cue: **Provide a copy of the following:**

- **A copy of RAC-14; Non-Emergency Station Events**
- **A copy of COP-200.5; Oil, Hazardous Material, Hazardous Waste, and Mixed Waste Contingency Plan**
- **If requested, A copy of 10CFR50.72; Immediate Notification Requirements**

Comments: None

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-A4.1S TITLE: **Required Notification of Outside Agencies**

STEP **2** X Performance Steps: State the outside agency notification requirements based on the plant trip.

GRADE ___ X Standards:

- *During the review of RAC-14, the examinee should state the need to notify the NRC within **four (4)** hours of the plant trip.*
- *The examinee should also state the need to notify the State (Echo event) within **one (1)** hour of notifying the NRC.*
- *The examinee **may** state that the oil spill, in and of itself, does not require notification of the State. **This is not required for successful completion of this JPM.***

Cue: • **None**

Comments:

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Comments: **After this step is completed, the JPM is considered complete.**

STOP TIME: _____
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

VERIFICATION OF JPM COMPLETION

Job Performance Measure No. JPM-A4.1S Rev. 0

Date Performed: _____

Operator: _____

Evaluator(s): _____

For examinee to achieve a satisfactory grade, **ALL** critical steps must be completed correctly. If task is Time Critical, it **MUST** be completed within the specified time to achieve a satisfactory grade.

Time Critical Task? Yes _____ No __X__

Validated Time (minutes): _____10_____

Actual Time to Complete (minutes): _____

Result of JPM: _____ (Denote by an S for satisfactory or a U for unsatisfactory)

Areas for Improvement:

EXAMINEE HANDOUT

JPM ID Number: A4.1S

Initiating Cues:

- An oil leak on a pressure sensor resulted in a trip of the "B" Main Feedwater Pump.
- The reactor was manually tripped and the crew performed EOP-2525, Standard Post Trip Actions.
- All other systems functioned as expected.
- The oil (about half a gallon) was completely contained on the Turbine deck floor and was cleaned up within one hour.
- Perform the required notifications to outside agencies.

Initial Conditions:

- You are the on-shift SM.
- The plant was operating normally at 50% power to make repairs to the secured "A" Main Feedwater Pump.