INITIAL SUBMITTAL OF WALKTHROUGH JPMS

FOR THE DUANE ARNOLD EXAMINATION

THE WEEK OF APRIL 9, 2001

DUANE ARNOLD ENERGY CENTER

JOB PERFORMANCE MEASURE

NUMBER: 286000-03

TASK NUMBER: NSPEO 9.08

TITLE: Manually Initiate Cable spreading Room CO_2 (Alternate Path)

Rev. 2

DEVELOPED BY: _____ Instructor — 12/7/99 Date

VALIDATED BY: _____ SME/Instructor — 2/25/00 Date

REVIEWED BY: _____ Plant Reviewer — 2-25-00 Date

APPROVED BY: _____ Training Supervisor-Operations — 2/28/00 Date

DUANE ARNOLD ENERGY CENTER

JOB PERFORMANCE MEASURE

JPM No. 286000-03	**JPM Description:** Manually initiate cable spreading room CO_2		
Task No. NSPEO 9.08	**Task Description:** Initiate cable spreading room CO_2 using alternate initiation method per OI 513, Section 5.3.2		
K/A Reference: 286000	A3.04 (3.2/3.3) System Generic #9 (3.9/3.8)		
APPLICABLE METHOD OF TESTING:			
Simulate Performance	X	Actual Performance	
Simulator	In-Plant X	Control Room	
Time for Completion: 20 minutes			

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE

All steps of this checklist should be performed upon initial validation. Prior to JPM usage, revalidate JPM using steps 7 through 10.

JPM No. 286000-03 JPM Title Manually initiate cable spreading room CO_2

✓ 1. Task description and number, JPM description and number are identified

✓ 2. Task elements identified and K/A references are included

✓ 3. Performance location specified

   a. in-plant

   b. control room

   c. simulator

_____ 4. Initial conditions and cues identified

   a. setup, required materials, and procedure

   b. malfunctions and instructor actions

   c. initiating and terminating cues

_____ 5. Task standards identified and verified by SME review

_____ 6. Critical tasks/steps identified meet criteria and identified with a "C"

_____ 7. Verify JPM steps fit the most current procedures
Procedure Rev. ____ Date _____

_____ 8. Pilot test JPM

   a. verify cues both verbal and visual are free of conflict

   b. ensure performance time is accurate

9. If the JPM cannot be performed as written with proper responses, then revise the JPM

_____ 10. When JPM is revalidated, SME/Instructor signs and dates JPM

_____ _____
SME/Instructor Date

_____ _____
SME/Instructor Date

_____ _____
SME/Instructor Date

SIMULATOR SETUP:

None

EVENT TRIGGERS

Trigger Number	Trigger File Name	Trigger Logic Statement	Trigger Word Description

MALFUNCTIONS:

Time	Malfunction No.	Malfunction Title	ET	Delay	F. Sev.	Ramp	I. Sev.

OVERRIDES:

Time	Override Tag	Override Description	ET	Delay	Value.	Ramp

REMOTE FUNCTIONS:

Time	Remote Function No.	Remote Function Title	Value	Ramp

INSTRUCTOR ACTIONS:

1. Inform OSS of performance of in-plant JPM.
2. Read initial conditions and initiating cues to the operator.

TASK STANDARDS:

1. Place pilot control valve handle in the open position.
2. Proceed to master pilot valve control box at the Cardox unit and break the glass
3. Open the pilot valve for 210 seconds.
4. Verify on 1C26 in the Control Room that the CABLE SPREADING ROOM SUPPLY 1V-AC-32 and EXHAUST 1V-EF-33 FANS have auto tripped by observing green lights OFF.
5. Close the master pilot control valve.

REQUIRED MATERIALS:

OI 513

GENERAL REFERENCES:

OI 513, Sections 5.3, 7.4, and 8.4

Read to the operator the following information:

INITIAL CONDITIONS:

1. The plant is operating at 100% power.

2. 1C40 annunciator F-6 (CARDOX PRE-INITIATION ALARM) was received and acknowledged. A report of smoke was received from the second floor admin bldg. After approximately 1 minute annunciator 1C40 G-6 (CARDOX INITIATED) had still NOT been received.

INITIATING CUES:

The OSS directs you to manually initiate Cable Spreading Room CO_2, using the normal initiation method.

This task is not time critical.

Inform the evaluator when you have completed the task.

PERFORMANCE INFORMATION

NOTE:

Critical steps are denoted with a "C". CRITICAL STEPS ARE THOSE WHICH WHEN NOT PERFORMED IN PROPER SEQUENCE, NOT PERFORMED AT THE PROPER TIME, OR NOT PERFORMED CORRECTLY WILL PREVENT THE SYSTEM FROM FUNCTIONING PROPERLY OR PRECLUDE THE SUCCESSFUL COMPLETION OF THE TASK. Failure to meet the standard for this step constitutes failure.

Time Start _____

PERFORMANCE STEP: Critical:	At the Cable Spreading Room South door, pull out the locking pin and depress the green START push-button.
STANDARD:	START push-button depressed.
COMMENTS:	

PERFORMANCE STEP: Critical:	Verify the local horn sounds at Panel 1C179.
STANDARD:	Operator listens for horn sounding.
COMMENTS: Inform operator that no horn sound is heard. If asked after 24 second time delay has expired inform operator that no audible sound of CO_2 discharge is heard. If asked about red light at 1C179 inform operator it is OFF.	

PERFORMANCE STEP: Critical:	Verify on Panel 1C26 in the control room that the CABLE SPREADING ROOM SUPPLY FAN 1V-AC-32 and CABLE SPREADING ROOM EXH FAN 1V-EF-33 have Auto tripped by observing the green OFF lights turn on.
STANDARD:	Operator attempts to verify Green OFF lights are ON.
COMMENTS: Operator goes to 1C26 or calls control room to verify 1V-AC-32 and 1V-EF-33 have auto tripped. Inform operator that CABLE SPREADING ROOM SUPPLY and EXHAUST FANS are still running. Green lights are OFF.(Red running lights are ON).	

PERFORMANCE STEP: Critical:	If no discharge occurs proceed to alternate initiation method.
STANDARD:	Operator proceeds with alternate initiation method.
COMMENTS: Operator may have elected to begin with alternate initiation method as allowed by CAUTION statement in Section 5.3.1. If operator contacts the OSS, or proceeds to shutdown the Cardox system per Section 7.4, direct the operator to "manual initiate CSR CO_2 using alternate initiation method."	

PERFORMANCE STEP: Critical: **C**	At North Cable Spreading Room door break glass on the pilot box and place pilot control valve handle in the OPEN position.
STANDARD:	Pilot Control Valve handle placed in the OPEN position.
COMMENTS:	

PERFORMANCE STEP: Critical:	Acknowledge local alarm horn and red actuation light (CARDOX SYSTEM ACTUATION) on Panel 1C179.
STANDARD:	Determine horn and light are off.
COMMENTS Inform operator that the horn and light are off.	

PERFORMANCE STEP: Critical: **C**	Proceed to the Master Pilot Valve Controller at the CARDOX unit. Break the glass. Inform the control room that you are about to initiate Cardox.
STANDARD:	Locates Master Pilot Valve Controller.
COMMENTS: Role play as control room and acknowledge that Cardox is about to be initiated.	

PERFORMANCE STEP: Critical: **C**	Open the pilot control valve for 210 seconds.
STANDARD:	Operator opens pilot control valve and has an awareness of how long it has been open.
COMMENTS: If the operator informs you he is waiting for 210 seconds to expire, inform him time is complete and he may continue to the next step.	

PERFORMANCE STEP: Critical:	Verify CO_2 discharge by observing CO_2 tank indicators.
STANDARD:	Observes tank level and pressure gauges, or listens for flow noise to verify discharge of Cardox.
COMMENTS: Cue: When asked, the Cardox tank level and pressure are decreasing, sound of Cardox flow is heard.	

PERFORMANCE STEP: Critical: C	Verify on Panel 1C26 in the control room that the CABLE SPREADING ROOM SUPPLY 1V-AC-32 and EXHAUST 1V-EF-33 FANS have auto tripped.
STANDARD:	Operator goes to 1C26 or calls Control Room to verify fans have tripped.
COMMENTS: Cue: Inform operator that green OFF lights for Cable Spreading Room Supply and Exhaust Fans are ON. (1V-AC-32 and 1V-EF-33 have TRIPPED) Cue: If the operator states that he/she will wait for 210 seconds, inform the operator that the pilot control valve has been open for 210 seconds. Otherwise wait for that period of time.	

PERFORMANCE STEP: Critical: C	Close the Pilot Control Valve.
STANDARD:	Operator closes pilot control valve.
COMMENTS	

PERFORMANCE STEP: Critical:	Notify control room that the manual initiation process for the Cardox System is complete.
STANDARD:	Calls control room to report completion of manual initiation.
COMMENTS: Role play as control room and acknowledge completion of manual Cardox initiation.	

PERFORMANCE STEP: Critical:	Close the pilot control valve located by the North Cable Spreading Room door.
STANDARD:	Closes pilot control valve at North Cable Spreading Room door.
COMMENTS Once the operator states that he will go to the cable spreading room and close the valve, inform him that the Operations Department Manager (back on the Admin Bldg. 2nd floor) will close it. (This allows you to start the next JPM from here.)	

PERFORMANCE STEP: Critical:	Secure the Cardox System per Section 7.4 and tag it out per Section 8.4.
STANDARD:	Operator proceeds to Section 7.4 to secure the Cardox System.
COMMENTS: Cue: Inform operator that the Aux Operator will secure the Cardox System, per Section 7.4 of OI-513 and that the control room is writing the tagout.	

Time Stop _____

TERMINATING CUES: Cardox System has been manually initiated per OI 513 Section 5.3. Inform trainee that the Aux Operator will secure the Cardox System per Section 7.4 and the control room is writing the tagout per Section 8.4

VERIFICATION OF COMPLETION

JPM No.: 286000-03 JPM Description: Manually initiate cable spreading room CO_2

Operator: _____ Evaluator: _____

Licensee: ☐ RO ☐ SRO ☐ SRO Cert
☐ STA ☐ NSPEO

Result: ☐ SATISFACTORY ☐ UNSATISFACTORY

COMMENTS/FEEDBACK: (Note any trainee discrepancies or misperformed steps.)

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Evaluator's Signature _____ Date

DUANE ARNOLD ENERGY CENTER

JOB PERFORMANCE MEASURE

NUMBER: 209001-03 (295030-02)

TASK NUMBER: NSPEO 39.02

TITLE: Restore Torus Level Manually Using the Core Spray System (faulted)

Rev. 0

DEVELOPED BY: Michael Fisher — Instructor — 8/10/99 — Date

VALIDATED BY: Merle R Rettengill — SME/Instructor — 8/12/99 — Date

REVIEWED BY: J Weitzel — Plant Reviewer — 8-21-99 — Date

APPROVED BY: [signature] — Training Supervisor-Operations — 8/24/99 — Date

P&I # 1 TMAR# NA

Preparer/Date Michael Fisher 8/31/99

Pages Cover

DUANE ARNOLD ENERGY CENTER

JOB PERFORMANCE MEASURE

JPM No. 209001-03	**JPM Description:** Restore torus level manually using the Core Spray system (faulted)		
Task No. NSPEO 39.02	**Task Description:** Raise torus level manually using the Core Spray system		
K/A Reference: NUIREG-1123 209001	A2.09 (3.1/3.3)		
APPLICABLE METHOD OF TESTING: SRO/RO			
Simulate Performance	X	Actual Performance	
Simulator	In-Plant X	Control Room	
Time for Completion: 10 minutes			

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE

All steps of this checklist should be performed upon initial validation. Prior to JPM usage, revalidate JPM using steps 7 through 10.

JPM No. 209001-03 JPM Title Restore torus level manually using the Core Spray system (faulted)

_____ 1. Task description and number, JPM description and number are identified

_____ 2. Task elements identified and K/A references are included

_____ 3. Performance location specified

in-plant

control room

simulator

_____ 4. Initial conditions and cues identified

setup, required materials, and procedure

malfunctions and instructor actions

initiating and terminating cues

_____ 5. Task standards identified and verified by SME review

_____ 6. Critical tasks/steps identified meet criteria and identified with a "C"

_____ 7. Verify JPM steps fit the most current procedures
Procedure Rev. _____ Date _____

_____ 8. Pilot test JPM

verify cues both verbal and visual are free of conflict

ensure performance time is accurate

9. If the JPM cannot be performed as written with proper responses, then revise the JPM

_____ 10. When JPM is revalidated, SME/Instructor signs and dates JPM

_____ _____
SME/Instructor Date

_____ _____
SME/Instructor Date

_____ _____
SME/Instructor Date

SIMULATOR SETUP:

None

EVENT TRIGGERS:

None

MALFUNCTIONS:

None

OVERRIDES:

None

REMOTE FUNCTIONS:

None

INSTRUCTOR ACTIONS:

1. Read initial conditions and initiating cues to the operator.

TASK STANDARDS:

1. Unlock and attempt to open "A" CS pump CST suction valve V-21-01 no more than four turns. (simulated)
2. Lock "A" CS pump CST suction valve V-21-01. (simulated)

REQUIRED MATERIALS:

OI 151

GENERAL REFERENCES:

OI 151, Rev. 30, 8/1/98

Read to the operator the following information:

INITIAL CONDITIONS:

1. Torus level is approximately four inches below desired level.

INITIATING CUES:

The OSS directs you to restore torus level manually using the "A" Core Spray system.

This task is not time critical.

Inform the evaluator when you have completed the task.

PERFORMANCE INFORMATION

NOTE:

Critical steps are denoted with a "C". Failure to meet the standard for this step constitutes failure.

Time Start _____

PERFORMANCE STEP: Critical:	Contact the control room to verify CST level greater than 10 feet.
STANDARD:	Level verified.
COMMENTS: Instructor will respond for communications to the control room; inform operator that CST level is approximately 12 feet.	

PERFORMANCE STEP: Critical:	Contact the control room to verify outbd torus suction valve MO-2100 and inbd torus suction valve MO-2147 are open.
STANDARD:	Valves verified open or directed to be opened.
COMMENTS: NOTE: Operator may elect to verify these valves locally. Instructor will respond for communications to the control room; inform operator that MO-2100 and MO-2147 are open.	

PERFORMANCE STEP: Critical: C	Unlock and open "A" CS pump CST suction valve V-21-1 two to four turns.
STANDARD:	Valve opened no more than four turns. (simulated)
COMMENTS: Cue: Inform operator that the valve handwheel moves freely. When asked by the operator, there is no flow noise and/or the valve stem did not move. If asked, torus level is not rising. Direct the operator to restore "A" CS to it's previous condition.	

PERFORMANCE STEP: Critical: C	Close and lock "A" CS pump CST suction valve V-21-1. Notify the OSS of valve status.
STANDARD:	Valve closed and locked and OSS notified of valve status.
COMMENTS: Cue: If asked, inform the operator that HPCI will be used in the control room. NOTE: V-21-1 never opened, therefore, the handwheel still turns freely until locked.	

Time Stop _____

TERMINATING CUES:

VERIFICATION OF COMPLETION

JPM No.: 209001-03 JPM Description: Restore torus level manually using the Core Spray system (faulted)

Operator: _____ Evaluator: _____

Licensee: ☐ RO ☐ STA ☐ SRO ☐ NSPEO ☐ SRO Cert

Result: ☐ SATISFACTORY ☐ UNSATISFACTORY

COMMENTS/FEEDBACK: (Note any trainee discrepancies or misperformed steps.)

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Evaluator's Signature _____ Date

DUANE ARNOLD ENERGY CENTER

JOB PERFORMANCE MEASURE

NUMBER 202002-05

Task Number: 12.02

DESCRIPTION: Take Local Control of the MG Set Scoop Tube

Rev. 0

06/13/96

DEVELOPED BY: _____ Instructor — 6/14/96 Date

VALIDATED BY: _____ SME/Instructor — 6/26/96 Date

REVIEWED BY: _____ Plant Reviewer — 6-27-96 Date

APPROVED BY: _____ Training Supervisor-Operations — 7/3/96 Date

DUANE ARNOLD ENERGY CENTER

JOB PERFORMANCE MEASURE

<table>
<tr><td rowspan="2">JPM No. 202002-05

Task No. 12.02</td><td colspan="4">JPM Description:
Take local control of the MG set scoop tube</td></tr>
<tr><td colspan="4">Task Description:
Adjust speed controls from MG set room.</td></tr>
<tr><td>K/A Reference:
202002</td><td colspan="3">K1.02 (4.2/4.2)
K4.01 (3.1/3.1)
A1.06 (3.4/3.3)
SG-9 (3.8/3.5)
K1.02 (3.5/3.5)
A1.01 (3.2/3.2)
A2.5 (3.1/3.1)
K3.02 (4.0/4.0)
A1.05 (3.6/3.6)
SG-7 (3.6/3.6)</td></tr>
<tr><td colspan="4">APPLICABLE METHOD OF TESTING: SRO/RO</td></tr>
<tr><td>Simulate Performance</td><td>X</td><td colspan="2">Actual Performance</td></tr>
<tr><td>Simulator</td><td>In-Plant</td><td>X</td><td>Control Room</td></tr>
<tr><td colspan="4">Time for Completion: 10 minutes</td></tr>
</table>

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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NOTE

All steps of this checklist should be performed upon initial validation. Prior to JPM usage, revalidate JPM using steps 7 through 10.

* * *

JPM# 202002-05 JPM Title Take local control of the MG set scoop tube

JMB 1. Task description, name, and number identified

JMB 2. Task elements identified and K/A references are included

JMB 3. Performance location specified

a. in-plant

b. control room

c. simulator

JMB 4. Initial conditions and cues identified

a. setup, required materials, and procedure

b. malfunctions and instructor actions

c. initiating and terminating cues

JMB 5. Task standards identified and verified by SME review

JMB 6. Critical tasks/steps identified denoted with a "C"

JMB 7. Verify JPM steps fit the most current procedures
Procedure Rev. 41 Date 6/6/96
52 3/25/98 JMB

JMB 8. Pilot test JPM

a. verify cues both verbal and visual are free of conflict

b. ensure performance time is accurate

9. If the JPM cannot be performed as written with proper responses, then revise the JPM

✓ 10. When JPM is revalidated, SME/Instructor signs and dates JPM

Joseph A. Bastone — SME/Instructor — 6/26/96 — Date

SME/Instructor — 7/27/98 — Date

SME/Instructor — Date

SIMULATOR SETUP: NA

MALFUNCTIONS: NA

INSTRUCTOR ACTIONS:

1. Verify that hearing protection equipment is available and used.
2. Note any discrepancies in the comments section for any misperformed steps.
3. Read initial conditions and initiating cues to the operator.

TASK STANDARDS:

1. The scoop tube positioner cover is opened.
2. The circuit breaker for the scoop tube positioner brake is open (OFF) (simulated).
3. The hand crank is installed on the motor drive shaft (simulated).
4. Hand crank rotated to increase MG set speed 1% (simulated).

REQUIRED MATERIALS:

Hand crank
OI 264

GENERAL REFERENCES:

OI 264, Rev. ~~41~~ 52

Read to the operator the following information:

INITIAL CONDITIONS:

1. The plant is operating at 90% power.

2. The "A" MG Scoop tube automatically locked when the speed control signal to the "A" recirc MG set was lost.

3. The annunciator "A" RECIRC MG SCOOP TUBE LOCK (1C04A, C-5) has alarmed.

INITIATING CUES:

The OSS directs you to take local control of the "A" recirc MG set scoop tube and coordinate with the control room operator to match recirc MG set speeds. This task is not time critical.

Inform the evaluator when you have completed the task.

PERFORMANCE INFORMATION

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NOTE:

Critical steps are denoted with a "C". Failure to meet the standard for this step constitutes failure.

* * *

Time Start _____

PERFORMANCE STEP: Critical:	Establish communications with the control room.
STANDARD:	Two-way communication with the control room is simulated established via the page, sound-powered phone, or radio.
COMMENTS:	

PERFORMANCE STEP: Critical: C	Open the hinged cover on the scoop tube positioner.
STANDARD:	Operator opens the cover for the scoop tube positioner.
COMMENTS:	

PERFORMANCE STEP: Critical: C	Open the circuit breaker for the scoop tube positioner brake.
STANDARD:	The circuit breaker for the scoop tube positioner brake is simulated open (OFF).
COMMENTS: Cue: When the operator indicates the proper position for the breaker, inform the operator that the breaker is off.	

PERFORMANCE STEP: Critical:	Verify that the "A" RECIRC MG SCOOP TUBE LOCK (1C04A, C-5) annunciator alarms.
STANDARD:	Simulate communicating with the control room to check status of the alarm.
COMMENTS: Note: Annunciator 1C04A C-5 is in alarming state due to initial conditions.	

PERFORMANCE STEP: Critical: C	Install the hand crank on the motor drive shaft extension (small wheel).
STANDARD:	The hand crank is simulated installed on the motor drive shaft extension (small wheel).
COMMENTS:	

PERFORMANCE STEP: Critical:	Screw in the two red thumbscrews on top of the motor drive.
STANDARD:	Two red thumbscrews on top of motor drive are simulated screwed in.
COMMENTS: Note: This eases brake tension to allow easier operation of crank. Cue: NSOE directs operator to manually raise A recirc MG set speed 1% (about 3/4 turn).	

PERFORMANCE STEP: Critical: C	Rotate hand crank in the "speed increase" direction.
STANDARD:	Operator simulates rotating hand crank approximately 3/4 of a turn in "increase" direction (counter clockwise).
COMMENTS: Cue: When operator has simulated turning the handwheel as directed, direct operator as NSOE to stop raising A recirc MG set speed. Cue: Inform operator that he is relieved of manual control of the A recirc MG set by a second licensed operator.	

Time Stop _____

TERMINATING CUES: Operator simulates rotating hand crank to increase MG speed 1%.

VERIFICATION OF COMPLETION

JPM #: 202002-05 JPM Description: Take local control of the MG set scoop tube

Operator: ______________________ Evaluator: ______________________

Licensee: ☐ RO ☐ SRO ☐ SRO Cert ☐ STA

Result: ☐ SATISFACTORY ☐ UNSATISFACTORY

COMMENTS/FEEDBACK: (Note any trainee discrepancies or misperformed steps.)

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Evaluator's Signature Date

DUANE ARNOLD ENERGY CENTER

JOB PERFORMANCE MEASURE

NUMBER: 261000-07

RO Task Number: 7.04

TITLE: MANUAL INITIATION OF SBGT AND SECONDARY CONTAINMENT ISOLATION

Modified - Alternate Path

Rev. 1

DEVELOPED BY: Michael Fisher — Instructor — 2/5/2001 — Date

VALIDATED BY: [signature] — SME/Instructor — 2/11/2001 — Date

REVIEWED BY: [signature] — Plant Reviewer — 2-11-2001 — Date

APPROVED BY: [signature] for — Training Supervisor-Operations — 2/13/01 — Date

DUANE ARNOLD ENERGY CENTER

JOB PERFORMANCE MEASURE

JPM No. 261000-07 **Task No.** 7.04	**JPM Description:** Manual Initiation of SBGT and Secondary Containment Isolation (Alternate Path). **Task Description:** Perform Manual Initiation (of SBGT) with Group III.		
K/A Reference: 261000	A3.01 3.2/3.3 A3.02 3.2/3.1 A3.03 3.0/2.9	A4.03 3.0/3.0	
APPLICABLE METHOD OF TESTING: SRO/RO			
Simulate Performance		Actual Performance X	
Simulator X	In-Plant	Control Room	
Time for Completion: 8 minutes			

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

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NOTE

All steps of this checklist should be performed upon initial validation. Prior to JPM usage, revalidate JPM using steps 7 through 10.

* * *

JPM #: 261000-07 JPM Description: Manual Initiation of SBGT and Secondary Containment Isolation (Alternate Path)

✓ 1. Task description and number, JPM description and number are identified

✓ 2. Task elements identified and K/A references are included

✓ 3. Performance location specified

in-plant

control room

simulator

✓ 4. Initial conditions and cues identified

setup, required materials, and procedure

malfunctions and instructor actions

initiating and terminating cues

✓ 5. Task standards identified and verified by SME review

✓ 6. Critical tasks/steps identified meet criteria and identified with a "C"

✓ 7. Verify JPM steps fit the most current procedures
Procedure Rev. 36 Date 9/19/2000

✓ 8. Pilot test JPM

verify cues both verbal and visual are free of conflict

ensure performance time is accurate

9. If the JPM cannot be performed as written with proper responses, then revise the JPM

_____ 10. When JPM is revalidated, SME/Instructor signs and dates JPM

SME/Instructor	Date
SME/Instructor	Date
SME/Instructor	Date

SIMULATOR SETUP: Any IC with the Group 3 Isolations reset

EVENT TRIGGERS:

None

MALFUNCTIONS:

Time	Malfunction No.	Malfunction Title	ET	Delay	F. Sev.	Ramp	I. Sev.
Setup	STPC02	SBGT B Fails to Auto Start	n/a	0	n/a	n/a	n/a

OVERRIDES:

NONE

REMOTE FUNCTIONS:

NONE

INSTRUCTOR ACTIONS:

1. Read initial conditions and initiating cues to the operator.
2. Reset to any IC without a Group 3 isolation signal present.
3. Insert malfunction.
4. Place simulator in run.

TASK STANDARDS:

1. RIS-4131A and RIS-4131B in the TRIP TEST position.
2. RIS 4131A and RIS-4131B in the OPERATE position.
3. L/R-5830A verified to be in the TRIP position.
4. L/R 5830B determined to be in the non-tripped position.
5. B SBGT Train manually initiated.

REQUIRED MATERIALS:

OI 170 Section 5.1 and 4.1

GENERAL REFERENCES:

OI 170, Rev. 25, 5/30/97

Read to the operator the following information:

INITIAL CONDITIONS:

1. Refuel floor evolutions are in progress.
2. A crate of highly radioactive material has been dropped from the Reactor Building crane.
3. Health Physics has reported that airborne radioactivity levels in the Reactor Building are increasing.

INITIATING CUES:

OSS directs you to manually initiate Standby Gas Treatment system and secondary containment isolation with both trains running.

This task is not time critical.

Inform the evaluator when you have completed the task.

PERFORMANCE INFORMATION

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NOTE:

Critical steps are denoted with a "C". Failure to meet the standard for this step constitutes failure.

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Time Start _____

PERFORMANCE STEP: Critical: C	Place the mode switches for both Fuel Pool Exhaust Radiation Monitors, RIS-4131A and RIS-4131B, in the TRIP TEST position.
STANDARD:	The operator places the switches for the Fuel Pool Exhaust Radiation Monitors, RIS-4131A and RIS-4131B, to the TRIP TEST position at 1C36.
COMMENTS: **Cue:** Acknowledge Report	

PERFORMANCE STEP: Critical: C	Return both Fuel Pool Exhaust Radiation Monitor mode switches, Channels A and B, to the OPERATE position.
STANDARD:	The operator returns the switches for the Fuel Pool Exhaust Radiation Monitors, RIS-4131A and RIS-4131B, to the in the Operate position at 1C36.
COMMENTS:	

PERFORMANCE STEP: Critical:	Depress the Reset Pushbuttons on both Fuel Pool Exhaust Rad. Monitors.
STANDARD:	At 1C36 depress and then release the Reset Pushbuttons on both Fuel Pool Exhaust Rad Monitors.
COMMENTS:	

NOTE: Candidate may complete the verification of the A SBGT train before addressing the B SBGT train. The below CUE should be given later in that case.

PERFORMANCE STEP: Critical: C	Verify that the Lockout Relays L/R-5830A and B are in the TRIP position at Panels 1C24A and B.
STANDARD:	At 1C24, the operator observe that Lockout Relay L/R-5830A is in the TRIPPED position **AND** that Lockout Relay L/R-5830B is not tripped.
COMMENTS: **CUE:** When the operator communicates the failure of the B SBGT lockout relay, direct the operator to manually initiate B SBGT train using the TEST pushbutton IAW OI 170.	

PERFORMANCE STEP: Critical: C	Start the B SBGT Train by depressing the test pushbutton PB-5831B on Panel 1C24B.
STANDARD:	The operator depresses the TEST pushbutton for B SBGT on Panel 1C24B.
COMMENTS:	

PERFORMANCE STEP: Critical:	Verify applicable SBGT system automatic actions per Section 4.0.
STANDARD:	The Operator verifies proper responses of the A and B SBGT trains in the following steps from Section 4.0 of OI 170.
COMMENTS:	

PERFORMANCE STEP: Critical:	Acknowledge SBGT 1C24 TROUBLE, 1C07A, B-11, annunciator
STANDARD:	The operator acknowledges SBGT 1C24 TROUBLE annunciator 1C07A, B-11 NOTE: This annunciator may be acknowledged by the Simulator Driver acting as an operator that would be in the front panels.
COMMENTS:	

NOTE: The following step applies to BOTH trains of SBGT

PERFORMANCE STEP: Critical:	Acknowledge A (B) SBGT RUNNING 1C24A[B], A-2, annunciator	
STANDARD:	The operator acknowledges A (B) SBGT RUNNING annunciator 1C24A [B], A-2	
Train Checked:	A:	B:
COMMENTS:		

PERFORMANCE STEP: Critical:	If the automatic startup is due to a Group III isolation, verify that Inboard[Outboard] Isolation Lockout Relay L/R-5830A[B] for A[B] SBGT train is in the TRIP position.
STANDARD:	The operator verifies that L/R-5830A is tripped and L/R-5830B is not tripped. NOTE: This step may be skipped, since it was previously performed.
COMMENTS:	

NOTE: The following steps apply to BOTH trains of SBGT

PERFORMANCE STEP: Critical:	Verify Cooldown/Outside Air Valve AV-5801A[B] indicates closed	
STANDARD:	The operator verifies that the Cooldown/Outside Air Valve AV-5801A[B] GREEN closed light is on.	
Train Checked:	A:	B:
COMMENTS:		

PERFORMANCE STEP: Critical:	Verify Intake Valve AV-5825A[B] is open.	
STANDARD:	The operator verifies that the Intake Valve AV-5825A[B] RED open light is on.	
Train Checked:	A:	B:
COMMENTS:		

PERFORMANCE STEP: Critical:	Confirm the Constant Heater EC-5805A[B] indicates on when air flow is greater than 2400 scfm	
STANDARD:	The operator verifies that the Constant Heater EC-5805A[B] RED on light is on.	
Train Checked:	A:	B:
COMMENTS:		

PERFORMANCE STEP: Critical:	Confirm the Variable Heater dT Controller DTIC-5805A[B] is operating properly by observing the desired temperature rise (approx. 16 degrees-dT) as controlled on 1C24A[B] (subtract TI-5805A[B] from TI-5833A[B].	
STANDARD:	The operator verifies that there is a temperature difference between TI-5805A[B] and TI-5833A[B]. NOTE: There is a time delay before the variable heaters can establish the 16 degrees-dT.	
Train Checked:	A:	B:
COMMENTS:		

PERFORMANCE STEP: Critical:	Verify [illegible]ot Valve AV-5815A[B] is open.	
STANDARD:	The operator verifies that the Fan Inlet Valve AV-5815A[B] RED open light is on.	
Train Checked:	A:	B:
COMMENTS:		

PERFORMANCE STEP: Critical:	Verify Exhaust fans 1V-EF-15A[B] is running.	
STANDARD:	The operator verifies that the Exhaust Fan 1V-EF-15A[B] RED running light is on.	
Train Checked:	A:	B:
COMMENTS:		

PERFORMANCE STEP: Critical:	Verify Discharge Valve AV-5817A[B] is open.	
STANDARD:	The operator verifies that Discharge Valve AV-5817A[B] RED open light is on.	
Train Checked:	A:	B:
COMMENTS:		

PERFORMANCE STEP: Critical:	Verify air flow less than or equal to 4000 cfm on FIC-5828A[B].	
STANDARD:	The operator verifies air flow less than or equal to 4000CFM on FIC-5828A[B].	
Train Checked:	A:	B:
COMMENTS:		

The following steps are not common steps.

PERFORMANCE STEP: Critical:	Verify Rx Bldg. to outside air ΔP is greater than or equal to .25" H_2O on DPI-4638.
STANDARD:	The operator verifies that Rx Bldg. to outside air ΔP is greater than or equal to .25" H_2O on DPI-4638
COMMENTS:	

PERFORMANCE STEP: Critical:	For the OG stack exhaust fan 1V-EF-18A[B], verify that one fan is running and that the other fan hand switch is in AUTO
STANDARD:	The operator verifies that one OG stack exhaust fan 1V-EF-18A[B] RED running light is on and that the other fan's handswitch is in AUTO
COMMENTS:	

PERFORMANCE STEP: Critical:	At Panel 1C23A[B], verify that AV-7602A[B] Inlet Valve is open.
STANDARD:	The operator verifies that Inlet Valve AV-7602A RED open light is on. The operator verifies that Inlet Valve AV-7602B GREEN closed light is on.
COMMENTS: Inlet Valve AV-7602B is closed due to lockout relay failure.	

PERFORMANCE STEP: Critical:	Record start time in the SBGT run log.
STANDARD:	The operator logs the SBGT start times.
COMMENTS:	

PERFORMANCE STEP: Critical:	Proceed to Section 4.2 in order to place an activated SBGT train in the standby mode, if desired.
STANDARD:	The operator asks the SS if it is desired to place one SBGT train in the standby mode.
COMMENTS: CUE: Instruct the operator that both trains are to remain running due to the B train failure.	

NOTE: The following step is optional and is allowed to be performed at an earlier stage after starting the B SBGT train.

PERFORMANCE STEP: Critical:	As desired to establish air flow greater than 2400 scfm and less than 4000 scfm, open Refuel Pool to SBGT inlet valve AV-7604U.
STANDARD:	The operator places the Refuel Pool to SBGT Inlet Valve AV-7604U handswitch to the OPEN position and verifies that the RED running light is on.
COMMENTS:	

Time Stop _____

TERMINATING CUES: When the Auto Actions of Section 4 have been verified Cue the operator that the JPM is complete.

VERIFICATION OF COMPLETION

JPM #: 261000-07 JPM Description: Manual Initiation of SBGT and Secondary Containment Isolation (Alternate Path).

Operator: _____ Evaluator: _____

Licensee: ☐ RO ☐ SRO ☐ SRO Cert ☐ STA

Result: ☐ SATISFACTORY ☐ UNSATISFACTORY

COMMENTS/FEEDBACK: (Note any trainee discrepancies or misperformed steps.)

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Evaluator's Signature Date

DUANE ARNOLD ENERGY CENTER

JOB PERFORMANCE MEASURE

NUMBER: 215005-02

TASK NUMBER: 99.12

TITLE: Respond to APRM Upscale and Remove a Flow Unit from Service

Rev. 1

REVISED BY: Michael Fisher — Date: 2/5/2001

VALIDATED BY: SME/Instructor — Date: 2/6/2001

REVIEWED BY: Plant Reviewer — Date: 2-6-01

APPROVED BY: Training Supervisor-Operations — Date: 2/13/01

DUANE ARNOLD ENERGY CENTER

JOB PERFORMANCE MEASURE

JPM No. 210005-02 **Task No.** 99.12	**JPM Description:** Respond to APRM Upscale and Remove a Flow Unit from Service **Task Description:** Respond to APRM Upscale	
K/A Reference: 215005	A2.05 3.5/3.6	
APPLICABLE METHOD OF TESTING:		
Simulate Performance		Actual Performance X
Simulator X	In-Plant	Control Room
Time for Completion: 20 minutes		

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE

All steps of this checklist should be performed upon initial validation. Prior to JPM usage, revalidate JPM using steps 7 through 10.

JPM No. 215005-02

JPM Title
Respond to APRM Upscale and Remove a Flow Unit from Service

✓ 1. Task description and number, JPM description and number are identified

✓ 2. Task elements identified and K/A references are included

✓ 3. Performance location specified
in-plant
control room
simulator

✓ 4. Initial conditions and cues identified
setup, required materials, and procedure
malfunctions and instructor actions
initiating and terminating cues

✓ 5. Task standards identified and verified by SME review

✓ 6. Critical tasks/steps identified meet criteria and identified with a "C"

✓ 7. Verify JPM steps fit the most current procedures
Procedure Rev. 22 Date 6/15/00

✓ 8. Pilot test JPM
verify cues both verbal and visual are free of conflict
ensure performance time is accurate

9. If the JPM cannot be performed as written with proper responses, then revise the JPM

_____ 10. When JPM is revalidated, SME/Instructor signs and dates JPM

_____ _____
SME/Instructor Date

_____ _____
SME/Instructor Date

_____ _____
SME/Instructor Date

SIMULATOR SETUP:
Any Full Power IC

EVENT TRIGGERS:

NONE

MALFUNCTIONS:

Time	Malfunction No.	Malfunction Title	ET	Delay	F. Sev.	Ramp	I. Sev.
Setup	NM11A	APRM Flow unit failure			0	0	

OVERRIDES:

NONE

REMOTE FUNCTIONS:

NONE

INSTRUCTOR ACTIONS:

1. Verify Simulator Setup and Flow Unit Malfunction.
2. Read initial conditions and initiating cues to the operator.

TASK STANDARDS:

1. Recirc flow signal downscale identified as cause of the 1/2 scram.
2. Determine that a manual reactor scram is NOT necessary.
3. FLOW unit A identified as downscale.
4. MODE switch for the "A" flow unit taken to a position other than OPERATE or STANDBY.
5. Turn the REACTOR SCRAM RESET switch C71A-S5 first to one side then to the other.

REQUIRED MATERIALS:

ARP 1C05A

GENERAL REFERENCES:

ARP 1C05A

Read to the operator the following information:

INITIAL CONDITIONS:

1. The plant is operating at power.
2. No testing or maintenance is in progress on RPS instrumentation.
3. An "A" RPS AUTO SCRAM has occurred.

INITIATING CUES:

Diagnose the cause of the "A" RPS AUTO SCRAM and take appropriate actions.

This task IS NOT time critical.

Inform the evaluator when you have completed the task.

PERFORMANCE INFORMATION

NOTE:
Critical steps are denoted with a "C". Failure to meet the standard for this step constitutes failure.

Time Start _____

PERFORMANCE STEP: Critical:	Check the SCRAM GROUP A & B light on 1C05 to determine if a full reactor scram has occurred.
STANDARD:	SCRAM GROUP B lights verified ON.
COMMENTS: Given as an Initial Condition. This verification may not be explicitly stated.	

PERFORMANCE STEP: Critical:	Verify SCRAM GROUP A 1, 2, 3, 4 lights are OFF.
STANDARD:	SCRAM GROUP A lights verified OFF.
COMMENTS: Given as an Initial Condition. This verification may not be explicitly stated.	

PERFORMANCE STEP: Critical: **C**	Identify the cause of the A RPS Auto Scram.
STANDARD:	Recirc flow signal downscale identified as cause of the 1/2 scram. (A/C/E APRMs flow biased upscale trip)
COMMENTS: Indications include: • Annunciator 1C05A, C-2, APRM upscale • APRM recorders (unchanged) • Annunciator 1C05A , E-2 (Flow unit problems) • UPSC/INOP/COMPAR lights	

PERFORMANCE STEP: Critical: **C**	Verify that plant conditions have not degraded to the point that an automatic scram is unavoidable.
STANDARD:	Determine that a manual reactor scram is NOT necessary.
COMMENTS: This Step is becomes CRITICAL and UNSAT only if the operator manually scrams the reactor.	

PERFORMANCE STEP: Critical:	Correct the cause of the A RPS auto scram.
STANDARD:	References Annunciator 1C05A , E-2 APRM FLOW UNIT UPSCALE, INOP OR COMPARE ERROR.
COMMENTS:	

PERFORMANCE STEP: Critical:	Concurrently perform ARP 1C05B, A-6 ROD OUT BLOCK.
STANDARD:	References ARP 1C05B, A-6.
COMMENTS: There are no pertinent actions in the Rod Block ARP at this time.	

PERFORMANCE STEP: Critical:	At panel 1C05, monitor flow units to determine if UPSC/INOP or COMPAR lights are on.
STANDARD:	COMPAR condition verified.
COMMENTS:	

PERFORMANCE STEP: itical:	At panel 1C37, confirm the COMPARATOR error condition.
STANDARD:	FLOW unit COMPARATOR errors confirmed at 1C37.
COMMENTS:	

PERFORMANCE STEP: Critical: **C**	At panel 1C37, monitor flow unit panel meters (behind panel doors) to determine which flow unit indication is different from the others and is causing the COMPARATOR error(s).
STANDARD:	FLOW unit A identified as downscale.
COMMENTS:	

PERFORMANCE STEP: Critical:	Place the FLOW UNIT ROD BLOCK BYPASS switch in the position for the malfunctioning flow unit with permission from the OSS .
STANDARD:	SS/SM permission obtained and FLOW UNIT ROD BLOCK BYPASS switch taken to "A".
COMMENTS: Role play SS/SM and grant permission to reposition the FLOW UNIT ROD BLOCK BYPASS switch.	

PERFORMANCE STEP: Critical:	Verify that the alarm and rod withdrawal block conditions clear.
STANDARD:	Verify that 1C05A, E-2 clears and Identify that the ROD BLOCK annunciator DOES NOT clear.
COMMENTS: The APRM upscale condition prevents the reset of the Rod Block annunciator. (This discrepancy is the source of a JPM follow-up question). As necessary, Role Play SS/SM: State that the problem will be investigated at a later time direct the operator to continue.	

PERFORMANCE STEP: Critical:	If the malfunctioning flow unit is producing an APRM rod block and scram condition by reducing APRM flow biased setpoints, perform the following in addition to bypassing the affected flow limit rod block: Place the MODE switch for the affected flow unit in a position other than OPERATE or STANDBY.
STANDARD:	(At 1C-37) MODE switch for the "A" flow unit taken to a position other than OPERATE or STANDBY.
COMMENTS: Cue: If asked for tagout, inform the student that another operator will write and hang the tag. You are to continue with the actions of the ARP.	

PERFORMANCE STEP: Critical:	While at 1C37, Operator may depress the reset pushbuttons for the Flow Unit COMPAR and/or APRM UPSCALE alarm lights. (Not procedurally required)
STANDARD:	Operator may depress the reset pushbuttons for the Flow Unit COMPAR and/or APRM UPSCALE alarm lights.
COMMENTS:	

PERFORMANCE STEP: Critical:	Verify that the alarm and rod withdrawal block conditions clear.
STANDARD:	Verify 1C05A C-2 (APRM Upscale) and 1C05B, A-6 (Rod Block) annunciators reset.
COMMENTS:	

PERFORMANCE STEP: Critical: **C**	Reset the 1/2 Scram per OI 358 (RPS).
STANDARD:	Turn the REACTOR SCRAM RESET switch C71A-S5 first to one side then to the other.
COMMENTS:	

PERFORMANCE STEP: Critical:	Verify the SCRAM GROUP indication lights are on.
STANDARD:	SCRAM GROUP indication lights verified on.
COMMENTS:	

PERFORMANCE STEP: Critical:	Verify the "A" RPS AUTO SCRAM (1C05A, A-2) annunciator is reset.
STANDARD:	Annunciator 1C05A, A-2 confirmed reset.
COMMENTS:	

Time Stop _____

TERMINATING CUES: None

VERIFICATION OF COMPLETION

JPM No.: 215005-02

JPM Description: Respond to APRM Upscale and Remove a Flow Unit from Service

Operator: _____ Evaluator: _____

Licensee: ☐ RO ☐ STA ☐ SRO ☐ NSPEO ☐ SRO Cert

Result: ☐ SATISFACTORY ☐ UNSATISFACTORY

COMMENTS/FEEDBACK: (Note any trainee discrepancies or misperformed steps.)

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Evaluator's Signature Date

DUANE ARNOLD ENERGY CENTER

JOB PERFORMANCE MEASURE

NUMBER 295003-03

RO TASK NUMBER: 15.05

TITLE: Perform the Required Actions to Re-Energize a De-Energized Essential 4160V Bus from the Standby Transformer

Rev. 2

DEVELOPED BY: Michael Fisher — Instructor — 2/5/2001 — Date

VALIDATED BY: [signature] — SME/Instructor — 2/6/2001 — Date

REVIEWED BY: [signature] — Plant Reviewer — 2-6-01 — Date

APPROVED BY: [signature] for — Training Supervisor-Operations — 2/13/01 — Date

DUANE ARNOLD ENERGY CENTER

JOB PERFORMANCE MEASURE

JPM No. 295003-03	**JPM Description:** Perform the required actions to re-energize a de-energized essential 4160 V bus from the Standby transformer.		
Task No. RO 15.05	**Task Description:** Re-energize a dead 4160 V bus from the Standby transformer.		
K/A Reference: **295003**	AA1.01 (3.7/3.8)		
APPLICABLE METHOD OF TESTING:			
Simulate Performance		Actual Performance X	
Simulator X	In-Plant	Control Room	
Time for Completion: 10 Minutes			

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE

All steps of this checklist should be performed upon initial validation. Prior to JPM usage, revalidate JPM using steps 7 through 10.

JPM No. 295003-03 JPM Title Re-energize a dead 4160V essential bus from the standby transformer.

✓ 1. Task description and number, JPM description and number are identified

✓ 2. Task elements identified and K/A references are included

✓ 3. Performance location specified
- in-plant
- control room
- simulator

✓ 4. Initial conditions and cues identified
- setup, required materials, and procedure
- malfunctions and instructor actions
- initiating and terminating cues

✓ 5. Task standards identified and verified by SME review

✓ 6. Critical tasks/steps identified meet criteria and identified with a "C"

✓ 7. Verify JPM steps fit the most current procedures
Procedure Rev. 28 Date 7/18/2000

✓ 8. Pilot test JPM
- verify cues both verbal and visual are free of conflict
- ensure performance time is accurate

9. If the JPM cannot be performed as written with proper responses, then revise the JPM

_____ 10. When JPM is revalidated, SME/Instructor signs and dates JPM

SME/Instructor	Date
SME/Instructor	Date
SME/Instructor	Date

SIMULATOR SETUP:

Any shutdown IC that has 1A3 powered from the Startup Transformer. Place the "A" SBDG handswitch in PTL, and place a warning tag on the handswitch.

EVENT TRIGGERS: None

MALFUNCTIONS:

Time	Malfunction No.	Malfunction Title	ET	Delay	F. Sev.	Ramp	I. Sev.
0	ED01B	Loss of "J" Breaker	0	0	N/A	N/A	N/A
0	ED01C	Loss of "K" Breaker	0	0	N/A	N/A	N/A
0	ED07C	1A3 failure to auto transfer	0	0	N/A	N/A	N/A

OVERRIDES: None

REMOTE FUNCTIONS: None

INSTRUCTOR ACTIONS:

1. Note any discrepancies in the comments section for any misperformed steps.
2. Read initial conditions and initiating cues to the operator.
3. Place the A SBDG handswitch in the PTL position, and put a warning tag on the handswitch.
4. Instructor may choose to manually trip the "J" and "K" breakers, but Malfunction ED07C must be inserted first.

TASK STANDARDS:

1. Bus 1A3 Manual Transfer Switch in MANUAL.
2. Insert the handle in the standby transformer to BUS 1A3 SYNC switch and place it in the ON position.
3. 4KV BREAKER 1A301 STANDBY TRANSFORMER TO BUS 1A3 closed.

REQUIRED MATERIALS:

AOP 301

GENERAL REFERENCES:

AOP 301

Read to the operator the following information:

INITIAL CONDITIONS:

1. The DAEC was shutdown to repair a large lube oil leak on the "A" SBDG, which is being tagged out for repair.
2. The "A" SBDG handswitch is in PTL.
3. The electric plant was in a normal shutdown plant lineup, with the Startup transformer supplying power to the Essential and Non-Essential 4KV busses.
4. The "J" and "K" breakers have tripped open, causing a loss of STARTUP Transformer.
5. AOP 301 (Loss of Essential Electrical Power) has been entered, and completed through Restoration of Power to Essential 4160V Buses, Step one.

INITIATING CUES:

The OSS directs you to re-energize Bus 1A3 from the STANDBY transformer IAW AOP 301.

This task is NOT time critical.

Inform the evaluator when you have completed the task.

PERFORMANCE INFORMATION

NOTE:

Critical steps are denoted with a "C". Failure to meet the standard for this step constitutes failure.

Time Start _____

PERFORMANCE STEP: Critical:	Verify no 1A3 Bus Lockout condition exists (1C08A, A5 reset)
STANDARD:	Annunciator 1C08A, A5 verified reset.
COMMENTS:	

PERFORMANCE STEP: Critical:	Verify no STANDBY Transformer Lockout condition exists (1C08A, A11 is reset).
STANDARD:	1C08A, A11 is verified reset
COMMENTS:	

PERFORMANCE STEP: Critical: C	Place the Bus 1A3 Transfer Switch to MANUAL
STANDARD:	Bus 1A3 Transfer Switch taken to manual
COMMENTS: Student should observe annunciator 1C08A, D7 (4KV Bus Auto Transfer Inop) come in.	

PERFORMANCE STEP: Critical: C	Insert the synch switch handle in the SYNCHRONIZE switch for 4KV BREAKER 1A301 STANDBY TRANSFORMER TO BUS 1A3 and place it to the ON position.
STANDARD:	Handle inserted and 1A3 Synch switch turned ON.
COMMENTS:	

PERFORMANCE STEP: Critical:	If necessary, reset the degraded voltage condition by pushing the degrade voltage reset pushbutton for 1A3
STANDARD:	1A3 degraded voltage push-button reset, if necessary.
COMMENTS: The student may push the reset button, even if the amber light is OFF.	

PERFORMANCE STEP: Critical: C	Reenergize bus 1A3 by taking the 4KV BREAKER 1A301 handswitch momentarily to CLOSE
STANDARD:	1A301 Handswitch taken to CLOSE
COMMENTS: Student should observe red breaker closed light come on, 1A3 bus voltage white lights come ON, or other indications that 1A3 is reenergized.	

PERFORMANCE STEP: Critical:	Place 1A3 SYNCHRONIZE switch for 4KV BREAKER 1A301 STANDBY TRANSFORMER TO BUS 1A3 in the OFF position and remove the handle.
STANDARD:	1A3 SYNCHRONIZE switch turned OFF, and switch removed.
COMMENTS: If the student continues to step 3 of the restoration section (follow up actions), inform him that these will be completed later.	

Time Stop _____

TERMINATING CUES: When the student informs you that 1A3 is powered from the Standby Transformer, inform him the JPM is completed.

VERIFICATION OF COMPLETION

JPM No.: 295003-03 JPM Description: Re-energize a dead 4160V essential bus from the standby transformer.

Operator: _____ Evaluator: _____

Licensee: ☐ RO ☐ SRO ☐ SRO Cert
☐ STA ☐ NSPEO

Result: ☐ SATISFACTORY ☐ UNSATISFACTORY

COMMENTS/FEEDBACK: (Note any trainee discrepancies or misperformed steps.)

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Evaluator's Signature Date

DUANE ARNOLD ENERGY CENTER

JOB PERFORMANCE MEASURE

NUMBER: 217000-16

TASK NUMBER: 3.04

TITLE: Perform Required Actions for Manual Startup of RCIC System to Establish a Cooldown

Rev. 0

DEVELOPED BY: Michael [signature] — Instructor — Date: 2/5/2001

VALIDATED BY: [signature] — SME/Instructor — Date: 2/11/2001

REVIEWED BY: [signature] — Plant Reviewer — Date: ~~2-6-01~~ 2-11-2001 2-11-01

APPROVED BY: [signature] for — Training Supervisor-Operations — Date: 2/13/01

TDT-3.08
Rev. 4

DUANE ARNOLD ENERGY CENTER

JOB PERFORMANCE MEASURE

JPM No. 217000-16 **Task No.** 3.04	**JPM Description:** Perform required actions for manual startup of RCIC system to Establish a Cooldown. **Task Description:** Perform a Manual Startup using the Flow Indicating Controller.	
K/A Reference: 217000	A4.04 (3.6/3.6)	
APPLICABLE METHOD OF TESTING: SRO/RO		
Simulate Performance		Actual Performance X
Simulator X	In-Plant	Control Room
Time for Completion: 10 minutes		

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE

All steps of this checklist should be performed upon initial validation. Prior to JPM usage, revalidate JPM using steps 7 through 10.

JPM No. 217000-16 JPM Title Perform required actions for manual startup of RCIC system to Establish a Cooldown

✓ 1. Task description and number, JPM description and number are identified

✓ 2. Task elements identified and K/A references are included

✓ 3. Performance location specified
in-plant
control room
simulator

✓ 4. Initial conditions and cues identified
setup, required materials, and procedure
malfunctions and instructor actions
initiating and terminating cues

✓ 5. Task standards identified and verified by SME review

✓ 6. Critical tasks/steps identified meet criteria and identified with a "C"

✓ 7. Verify JPM steps fit the most current procedures
Procedure Rev. 39 Date 11/03/00

✓ 8. Pilot test JPM
verify cues both verbal and visual are free of conflict
ensure performance time is accurate

9. If the JPM cannot be performed as written with proper responses, then revise the JPM

_____ 10. When JPM is revalidated, SME/Instructor signs and dates JPM

SME/Instructor	Date
SME/Instructor	Date
SME/Instructor	Date

SIMULATOR SETUP: Reset to IC 5.

EVENT TRIGGERS:

None

MALFUNCTIONS:

None

OVERRIDES:

None

REMOTE FUNCTIONS:

None

INSTRUCTOR ACTIONS:

1. Insert a manual reactor scram.
2. After scram, take appropriate IPOI 5 actions. Insure reactor water level remains <211 inches by tripping both feed pumps prior to 180 inches.
3. Reset scram.
4. Start RHR loop A and B in Torus Cooling per OI 149.
5. Place HPCI Aux Oil Pump handswitch in PTL and tag.
6. Read initial conditions and initiating cues to the operator.

TASK STANDARDS:

1. MO-2316 is open. (Redundant Shutoff)
2. MO-2515 is open. (Test Bypass)
3. HS-2415 placed in start. (Vacuum Pump)
4. HS-2426 placed in open. (Lube Oil Cooler Supply)
5. HS-2404 placed in the OPEN position. (Steam Supply)

REQUIRED MATERIALS:

OI 150

GENERAL REFERENCES:

OI 150

Read to the operator the following information:

INITIAL CONDITIONS:

1. A plant shutdown due to HPCI being inoperable is in progress.
2. RHR loops "A" and "B" are in torus cooling.
3. NSPEO is in RCIC Room awaiting RCIC startup.

INITIATING CUES:

The OSS directs you to startup RCIC, in the CST to CST mode, using the flow indicating controller to establish a cooldown not to exceed 80°F/hr.

This task is not time critical.

Inform the evaluator when you have completed the task.

PERFORMANCE INFORMATION

NOTE:
Critical steps are denoted with a "C". Failure to meet the standard for this step constitutes failure.

Time Start _____

PERFORMANCE STEP: Critical:	Start 1V-AC-15A and B RCIC ROOM CLG UNITS at 1C23.
STANDARD:	1V-AC-15A and B started.
COMMENTS:	

PERFORMANCE STEP: Critical:	Verify RCIC pump and turbine have adequate lubricant level by observing the local lubricant level indicators.
STANDARD:	NSPEO contacted to ensure lubricant level is satisfactory.
COMMENTS: When contacted as the NSPEO and asked about lubricant level report that RCIC pump and turbine have adequate lubricant.	

PERFORMANCE STEP: Critical:	Verify one train of Standby Gas Treatment System is operable per OI-170.
STANDARD:	Observe SBGT lineup to verify one train is operable.
COMMENTS:	

PERFORMANCE STEP: Critical: C	Open the REDUNDANT SHUTOFF valve MO-2316 on 1C03.
STANDARD:	MO-2316 is open.
COMMENTS:	

PERFORMANCE STEP: Critical: C	Open TEST BYPASS valve MO-2515 to 44-46% as indicated on RCIC TEST BYP MO-2515 position ZI 2515.
STANDARD:	MO-2515 is open.
COMMENTS: NOTE: Opening MO-2515 is the critical portion of this step, NOT the percentage open.	

PERFORMANCE STEP: Critical:	Verify MO-2511 PUMP DISCHARGE valve is open.
STANDARD:	MO-2511 is verified open.
COMMENTS: NOTE: MO-2511 is normally open.	

PERFORMANCE STEP: Critical: C	Start 1P-227 VACUUM PUMP by placing handswitch HS-2415 on Panel 1C04 in the START position.
STANDARD:	HS-2415 placed in start and vacuum pump start observed.
COMMENTS:	

PERFORMANCE STEP: Critical: C	Open MO-2426 LUBE OIL COOLER SUPPLY by placing HS-2426 in the OPEN position momentarily and observing proper valve position indication.
STANDARD:	HS-2426 placed in open and proper lube oil cooler supply valve indication is observed.
COMMENTS:	

PERFORMANCE STEP: Critical:	If time permits, ensure unnecessary/unauthorized personnel are clear of the RCIC Room.
STANDARD:	NSPEO contacted to ensure unnecessary personnel are clear of RCIC Room.
COMMENTS: When contacted as the NSPEO, report all personnel are clear of the RCIC Room.	

PERFORMANCE STEP: Critical: C	Open MO-2404 TURBINE STEAM SUPPLY by placing the handswitch in the OPEN position momentarily and observing proper valve position indication and that RCIC turbine speed, pump discharge pressure, and RCIC flow indicators indicate increases.
STANDARD:	HS-2404 placed in the OPEN position and proper valve indication, turbine speed, pump discharge pressure and flow increase is observed.
COMMENTS:	

PERFORMANCE STEP: Critical:	Verify that the following drain valves automatically close: CV-2410 RCIC STEAM LINE ISOLATION CV-2411 RCIC STEAM LINE ISOLATION CV-2436 CLOSED RADWASTE DISCH ISOL
STANDARD:	CV-2410, CV-2411, and CV-2436 verified CLOSED.
COMMENTS:	

PERFORMANCE STEP: Critical:	Verify that MO-2510 MIN FLOW BYPASS opens when RCIC flow is less than 80 gpm with pump discharge pressure greater than 125 psig.
STANDARD:	MO-2510 verified to be open when system flow is < 80 gpm and system pressure is > 125 psig.
COMMENTS:	

PERFORMANCE STEP: Critical:	Verify HV-2406 TURBINE CONTROL VALVE Governor Valve is throttling to control turbine speed.
STANDARD:	HV-2406 is verified to be throttling.
COMMENTS:	

PERFORMANCE STEP: Critical:	Throttle MO-2515 to achieve desired discharge pressure.
STANDARD:	Operator throttles MO-2515 as desired.
COMMENTS:	

PERFORMANCE STEP: Critical:	Verify MO-2510 MIN FLOW BYPASS valve closes as RCIC flow raises above 80 gpm.
STANDARD:	MO-2510 is verified closed when greater than 80 gpm..
COMMENTS:	

PERFORMANCE STEP: Critical:	Adjust FIC-2509 FLOW CONTROL until desired flow is achieved; do not throttle RCIC turbine speed below the minimum of 2000 rpm.
STANDARD:	FIC-2509 is throttled as necessary.
COMMENTS: If the operator starts monitoring cooldown, inform him that the STA will plot cooldown.	

Time Stop _____

TERMINATING CUES: RCIC is operating in CST to CST mode.

VERIFICATION OF COMPLETION

JPM No.: 217000-16 JPM Description: Perform required actions for manual startup of RCIC system to establish a cooldown.

Operator: _____ Evaluator: _____

Licensee: ☐ RO ☐ SRO ☐ SRO Cert
☐ STA ☐ NSPEO

Result: ☐ SATISFACTORY ☐ UNSATISFACTORY

COMMENTS/FEEDBACK: (Note any trainee discrepancies or misperformed steps.)

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Evaluator's Signature Date

DUANE ARNOLD ENERGY CENTER

JOB PERFORMANCE MEASURE

NUMBER: 239001-02

TASK NUMBER: 95.15

TITLE: Install EOP Defeat 5 to depressurize the reactor

Rev. 0

DEVELOPED BY: Michael Fisher — Instructor — 2/5/2001 — Date

VALIDATED BY: [signature] — SME/Instructor — 2/11/2001 — Date

REVIEWED BY: [signature] — Plant Reviewer — 2-11-2001 ~~2-11-01~~ — Date

APPROVED BY: [signature] for — Training Supervisor-Operations — 2/13/01 — Date

DUANE ARNOLD ENERGY CENTER

JOB PERFORMANCE MEASURE

JPM No. 239001-02	**JPM Description:** Install EOP Defeat 5 to depressurize the reactor.		
Task No. 95.15	**Task Description:** Perform the required actions of the MSIV and Main Steam Line Drain Total Isolation Defeat.		
K/A Reference: **239001**	A2.03 4.0/4.2		
APPLICABLE METHOD OF TESTING:			
Simulate Performance		Actual Performance X	
Simulator X	In-Plant	Control Room	
Time for Completion: 10 minutes			

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE

All steps of this checklist should be performed upon initial validation. Prior to JPM usage, revalidate JPM using steps 7 through 10.

JPM No. 239001-02 JPM Title Install EOP Defeat 5 to depressurize the reactor.

✓ 1. Task description and number, JPM description and number are identified

✓ 2. Task elements identified and K/A references are included

✓ 3. Performance location specified

- a. in-plant
- b. control room
- c. simulator

✓ 4. Initial conditions and cues identified

- a. setup, required materials, and procedure
- b. malfunctions and instructor actions
- c. initiating and terminating cues

✓ 5. Task standards identified and verified by SME review

✓ 6. Critical tasks/steps identified meet criteria and identified with a "C"

✓ 7. Verify JPM steps fit the most current procedures
Procedure Rev. 2 Date 9-21-00

✓ 8. Pilot test JPM

- a. verify cues both verbal and visual are free of conflict
- b. ensure performance time is accurate

9. If the JPM cannot be performed as written with proper responses, then revise the JPM

_____ 10. When JPM is revalidated, SME/Instructor signs and dates JPM

SME/Instructor	Date
SME/Instructor	Date
SME/Instructor	Date

SIMULATOR SETUP:

EVENT TRIGGERS

None

MALFUNCTIONS:

Time	Malfunction No.	Malfunction Title	ET	Delay	F. Sev.	Ramp	I. Sev.
0	AD01D	PSV-4403 leak	N/A	0	7%	0	0
0	SW24	WW load blockage	N/A	0	100%	0	0

OVERRIDES:

Time	Override Tag	Override Description	ET	Delay	Value.	Ramp
0	AD HS-4400		N/A	0	CLOSE	0
0	AD HS-4401		N/A	0	CLOSE	0
0	AD HS-4402		N/A	0	CLOSE	0
0	AD HS-4405		N/A	0	CLOSE	0
0	AD HS-4406		N/A	0	CLOSE	0
0	AD HS-4407		N/A	0	CLOSE	0

REMOTE FUNCTIONS:

None

INSTRUCTOR ACTIONS:

1. Insert malfunctions and overrides.
2. Override ADS logic.
3. Place ADS handswitches in the OPEN position.
4. Allow 850 psig in RUN to cause a Group 1, then place the Mode Switch in the SHUTDOWN position.
5. Read initial conditions and initiating cues to the operator.

TASK STANDARDS:

1. HS-4427A placed in OVERRIDE position
2. HS-4427B placed in OVERRIDE position
3. HS-4427C placed in OVERRIDE position
4. HS-4427D placed in OVERRIDE position
5. All MSIV handswitches taken to CLOSE and PCIS reset
6. MO-1043 is OPEN
7. CV-1064 is OPEN
8. MO-4424 is OPEN
9. MO-4423 is OPEN

REQUIRED MATERIALS:

EOP Defeat 5

GENERAL REFERENCES:

EOP Defeat 5, Rev. 1, 2/16/1999

Read to the operator the following information:

INITIAL CONDITIONS:

1. The reactor scrammed due to a safety relief valve failing open.
2. The Mode Switch was NOT taken out of RUN prior to 850 psig.
3. DW temperature is 280 degrees F.
4. Emergency Depressurization has been directed.
5. All SRVs have failed.

INITIATING CUES:

The OSS directs you to perform the required actions of EOP Defeat 5 in order to depressurize the RPV with the Main Steam Line Drains.

This task is not time critical.

Inform the evaluator when you have completed the task.

PERFORMANCE INFORMATION

NOTE:
Critical steps are denoted with a "C". Failure to meet the standard for this step constitutes failure.

Time Start _____

NOTE: The first four steps may be performed in any order.

PERFORMANCE STEP: Critical: C	At Panel 1C15, place GROUP 1 CHANNEL A1 ALL SIGNALS OVERRIDE keylock switch HS-4427A in OVERRIDE and confirm amber light is ON.
STANDARD:	HS-4427A taken to OVERRIDE and the amber light is confirmed ON.
COMMENTS:	

PERFORMANCE STEP: Critical: C	At Panel 1C15, place GROUP 1 CHANNEL A2 ALL SIGNALS OVERRIDE keylock switch HS-4427C in OVERRIDE and confirm amber light is ON.
STANDARD:	HS-4427C taken to OVERRIDE and the amber light is confirmed ON.
COMMENTS:	

PERFORMANCE STEP: Critical: C	At Panel 1C17, place GROUP 1 CHANNEL B1 ALL SIGNALS OVERRIDE keylock switch HS-4427B in OVERRIDE and confirm amber light is ON.
STANDARD:	HS-4427B taken to OVERRIDE and the amber light is confirmed ON.
COMMENTS:	

PERFORMANCE STEP: Critical: C	At Panel 1C17, place GROUP 1 CHANNEL B2 ALL SIGNALS OVERRIDE keylock switch HS-4427D in OVERRIDE and confirm amber light is ON.
STANDARD:	HS-4427D taken to OVERRIDE and the amber light is confirmed ON.
COMMENTS:	

PERFORMANCE STEP: Critical: C	Verify all MSIV handswitches are in CLOSE position and reset Group 1 using DIV 1 RESET and DIV 2 RESET pushbuttons on 1C05.
STANDARD:	All MSIV handswitches are verified in the CLOSE position and PCIS is reset using the DIV 1 and DIV 2 pushbuttons.
COMMENTS:	

PERFORMANCE STEP: Critical: C	At 1C04, open MO-1043 MSL HEADER DRAINS BYPASS valve.
STANDARD:	MO-1043 is open.
COMMENTS:	

PERFORMANCE STEP: Critical:	At 1C04, verify CLOSED, MO-1044 MSL DRAIN ORIFICE BYPASS valve.
STANDARD:	MO-1044 is verified CLOSED.
COMMENTS:	

PERFORMANCE STEP: Critical: C	At 1C04, open CV-1064 MSL HEADER DRAIN valve by placing HS-1064 in OPEN position.
STANDARD:	CV-1064 is OPEN.
COMMENTS:	

PERFORMANCE STEP: Critical: C	At 1C04, open MO-4424 OUTBD MAIN STM LINE DRAIN ISOL valve by placing handswitch HS-4424 in OPEN position.
STANDARD:	MO-4424 is OPEN.
COMMENTS:	

PERFORMANCE STEP: Critical: C	At 1C03, open MO-4423 INBD MAIN STM LINE DRAIN ISOL valve by placing handswitch HS-4423 in OPEN position.
STANDARD:	MO-4423 is OPEN.
COMMENTS:	

PERFORMANCE STEP: Critical:	At 1C04, open MO-1044 MSL DRAIN ORIFICE BYPASS as necessary to vent the RPV.
STANDARD:	MO-1044 is opened.
COMMENTS: CUE: If asked if opening MO-1044 is necessary, direct the operator to open MO-1044.	

Time Stop _____

TERMINATING CUES: All 4 Override switches taken to OVERRIDE and MSL Drain valves are open.

VERIFICATION OF COMPLETION

JPM No.: 239001-02 JPM Description: Install EOP Defeat 5 to depressurize the reactor.

Operator: _____ Evaluator: _____

Licensee: ☐ RO ☐ SRO ☐ SRO Cert
☐ STA ☐ NSPEO

Result: ☐ SATISFACTORY ☐ UNSATISFACTORY

COMMENTS/FEEDBACK: (Note any trainee discrepancies or misperformed steps.)

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Evaluator's Signature Date

DUANE ARNOLD ENERGY CENTER

JOB PERFORMANCE MEASURE

NUMBER: 259001-11

TASK NUMBER: 45.03

TITLE: RESTART OF A REACTOR FEED PUMP FOLLOWING A REACTOR SCRAM

Rev. 0

DEVELOPED BY: Michael Fricke — Instructor — 2/5/2001 — Date

VALIDATED BY: Jeffrey A. Kruse — SME/Instructor — 2-11-01 — Date

REVIEWED BY: Gary Gebhardt — Plant Reviewer — 2-6-01 — Date

APPROVED BY: S/R Thullen for — Training Supervisor-Operations — 2/13/01 — Date

DUANE ARNOLD ENERGY CENTER

JOB PERFORMANCE MEASURE

JPM No. 259001-11	**JPM Description:** Restart of a Reactor Feed Pump following a Reactor Scram.		
Task No. 45.03	**Task Description:** Restart of a Reactor Feed Pump following a Reactor Scram.		
K/A Reference: **259001**	A4.02 (3.9/3.7)		
APPLICABLE METHOD OF TESTING: RO/SRO			
Simulate Performance		Actual Performance X	
Simulator X	In-Plant	Control Room	
Time for Completion: 10 minutes			

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE

All steps of this checklist should be performed upon initial validation. Prior to JPM usage, revalidate JPM using steps 7 through 10.

JPM No. 259001-11 JPM Title Restart of a Reactor Feed Pump following a Reactor Scram

✓ 1. Task description and number, JPM description and number are identified

✓ 2. Task elements identified and K/A references are included

✓ 3. Performance location specified

   a. in-plant

   b. control room

   c. simulator

✓ 4. Initial conditions and cues identified

   a. setup, required materials, and procedure

   b. malfunctions and instructor actions

   c. initiating and terminating cues

✓ 5. Task standards identified and verified by SME review

✓ 6. Critical tasks/steps identified meet criteria and identified with a "C"

✓ 7. Verify JPM steps fit the most current procedures
Procedure Rev. 51 Date 8/2/00

✓ 8. Pilot test JPM

   a. verify cues both verbal and visual are free of conflict

   b. ensure performance time is accurate

9. If the JPM cannot be performed as written with proper responses, then revise the JPM

_____ 10. When JPM is revalidated, SME/Instructor signs and dates JPM

SME/Instructor	Date
SME/Instructor	Date
SME/Instructor	Date

SIMULATOR SETUP:

EVENT TRIGGERS

None

MALFUNCTIONS:

None

OVERRIDES:

None

REMOTE FUNCTIONS:

None

INSTRUCTOR ACTIONS:

1. Reset to IC-14.
2. Start "B" Well Water pump and secure "D" Well Water pump.
3. Insert a manual scram.
4. Ensure that reactor water level exceeds 211", and then lower reactor water level to less than 200".
5. Perform appropriate steps of IPOI 5, with the exception of leaving both Condensate pumps running.
6. Place HC-1579 and HC-1621 in AUTO. Place the Master feed Reg valve controller in MANUAL and close both feed reg valves.
7. Read initial conditions and initiating cues to the operator.

TASK STANDARDS:

1. Verify that the aux lube oil pumps are running.
2. Verify that the high reactor water level trips are reset.
3. Start "B" RFP.

REQUIRED MATERIALS:

OI-644

GENERAL REFERENCES:

OI-644

Read to the operator the following information:

INITIAL CONDITIONS:

A reactor scram has occurred.

Both feedwater pumps tripped when reactor water level exceeded 211".

INITIATING CUES:

As the OSS, I direct you to perform a restart of the "B" Reactor Feed Pump, in accordance with OI-644.

This task is not time critical.

Inform the evaluator when you have completed the task.

PERFORMANCE INFORMATION

NOTE:
Critical steps are denoted with a "C". Failure to meet the standard for this step constitutes failure.

Time Start _____

PERFORMANCE STEP: Critical:	Verify only one Condensate pump running.
STANDARD:	The operator will secure either "A" Condensate pump using HS-1401 or B Condensate pump using HS-1411.
COMMENTS: The operator may choose to secure either of the Condensate pumps.	

PERFORMANCE STEP: Critical: C	Verify 1P-2A and 1P2B, RFP AUX LUBE OIL PUMPS, are running.
STANDARD:	The operator will verify that 1P2A and 1P2B are running or will start the pumps as necessary.
COMMENTS:	

PERFORMANCE STEP: Critical: C	Verify RFP/MN TURB HI LEVEL CH.A, B, C trips are RESET at 1C05.
STANDARD:	The operator will reset the RFP/MN HI LEVEL trips by pushing in the reset pushbuttons.
COMMENTS:	

PERFORMANCE STEP: Critical:	Verify CV-1611 "B" REACTOR FEED PUMP 1P1B RECIRC valve is CLOSED.
STANDARD:	The operator will verify that CV-1611 is closed.
COMMENTS:	

PERFORMANCE STEP: Critical:	Slowly throttle open MO-1708 CONDENSATE DEMIN BYPASS valve.
STANDARD:	The operator will slowly throttle open the Condensate Demin Bypass valve using HS-1708 as necessary to maintain adequate RFP suction pressure.
COMMENTS:	

PERFORMANCE STEP: Critical: C	Start "B" Reactor Feed Pump 1P-1B.
STANDARD:	The operator will start the "B" Reactor Feed Pump using HS-1616.
COMMENTS:	

PERFORMANCE STEP: Critical:	Verify FIC-1611 establishes and maintains a recirc flow of at least 2800 gpm.
STANDARD:	The operator will verify that a recirc flow of at least 2800 gpm exists.
COMMENTS:	

PERFORMANCE STEP: Critical:	Stop "B" RFP AUX LUBE OIL PUMP 1P2B by placing handswitch HS-1648 to STOP and then to AUTO.
STANDARD:	The operator will stop "B" RFP Aux Lube Oil pump and return the handswitch to AUTO.
COMMENTS:	

PERFORMANCE STEP: Critical:	Manually control Reactor Water Level, until the FRV can be transferred to AUTO per the appropriate section of this OI.
STANDARD:	The operator will manually control reactor water level.
COMMENTS:	

Time Stop _____

TERMINATING CUES: "B" RFP running and the operator controlling level

VERIFICATION OF COMPLETION

JPM No.: 259001-11 JPM Description: Rapid Restart of "B" RFP Following a Reactor Scram.

Operator: _____ Evaluator: _____

Licensee: ☐ RO ☐ SRO ☐ SRO Cert
☐ STA ☐ NSPEO

Result: ☐ SATISFACTORY ☐ UNSATISFACTORY

COMMENTS/FEEDBACK: (Note any trainee discrepancies or misperformed steps.)

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Evaluator's Signature Date

DUANE ARNOLD ENERGY CENTER

JOB PERFORMANCE MEASURE

NUMBER: 201001-06

TASK NUMBER: 10.01

TITLE: Startup CRD under Normal Conditions

Rev. 0

DEVELOPED BY: Michael Jenkins — Instructor — 2/5/2001 — Date

VALIDATED BY: [signature] — SME/Instructor — 2/6/2001 — Date

REVIEWED BY: [signature] — Plant Reviewer — 2-6-01 — Date

APPROVED BY: [signature] — Training Supervisor-Operations — 2/13/01 — Date

DUANE ARNOLD ENERGY CENTER

JOB PERFORMANCE MEASURE

JPM No. 201001-06	**JPM Description:** Startup CRD under Normal Conditions	
Task No. 10.01	**Task Description:** Startup CRD under Normal Conditions	
K/A Reference: **201001**	A201 3.2/3.3	
APPLICABLE METHOD OF TESTING: RO/SRO		
Simulate Performance	Actual Performance X	
Simulator X	In-Plant	Control Room
Time for Completion: 10 minutes		

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE

All steps of this checklist should be performed upon initial validation. Prior to JPM usage, revalidate JPM using steps 7 through 10.

JPM No. 201001-06 JPM Title Startup CRD under Normal Conditions

✓ 1. Task description and number, JPM description and number are identified

✓ 2. Task elements identified and K/A references are included

✓ 3. Performance location specified

   a. in-plant

   b. control room

   c. simulator

✓ 4. Initial conditions and cues identified

   a. setup, required materials, and procedure

   b. malfunctions and instructor actions

   c. initiating and terminating cues

✓ 5. Task standards identified and verified by SME review

✓ 6. Critical tasks/steps identified meet criteria and identified with a "C"

✓ 7. Verify JPM steps fit the most current procedures
Procedure Rev. 46 Date 1/12/2001

✓ 8. Pilot test JPM

   a. verify cues both verbal and visual are free of conflict

   b. ensure performance time is accurate

9. If the JPM cannot be performed as written with proper responses, then revise the JPM

_____ 10. When JPM is revalidated, SME/Instructor signs and dates JPM

_____ _____
SME/Instructor Date

_____ _____
SME/Instructor Date

_____ _____
SME/Instructor Date

SIMULATOR SETUP:

EVENT TRIGGERS

None

MALFUNCTIONS:

Time	Malfunction No.	Malfunction Title	ET	Delay	F. Sev.	Ramp	I. Sev.
0	RD11B	B CRD pump trip	N/A	0	N/A	0	N/A

OVERRIDES:

None

REMOTE FUNCTIONS:

Time	Remote Function No.	Remote Function Title	Value	Ramp
As req				

INSTRUCTOR ACTIONS:

1. Reset to any at power IC that has "B" CRD pump running.
2. Insert malfunction to trip "B" CRD pump.
3. Read initial conditions and initiating cues to the operator.

TASK STANDARDS:

1. V-17-08 closed to ½ turn open.
2. FC-1814 shifted to MANUAL and adjusted to 0 gpm.
3. 1P209A started.
4. V-17-08 slowly opened.
5. CRD flow raised to 40 gpm and FC-1814 returned to AUTO.

REQUIRED MATERIALS:

OI-255

GENERAL REFERENCES:

OI-255 Rev. 44, 11/04/1999

Read to the operator the following information:

INITIAL CONDITIONS:

1. "B" CRD pump has just tripped.
2. Electrical Maintenance has reported a problem with the breaker for "B" CRD pump.
3. GEMAC Reference Leg Backfill has been isolated for three days.

INITIATING CUES:

You are directed to start 1P209A, "A" CRD Pump, in accordance with OI-255.

This task is not time critical.

Inform the evaluator when you have completed the task.

PERFORMANCE INFORMATION

NOTE:
Critical steps are denoted with a "C". Failure to meet the standard for this step constitutes failure.

Time Start _____

PERFORMANCE STEP: Critical:	Verify the GEMAC Reactor Level Instruments Reference Legs Backfill system is isolated.
STANDARD:	GEMAC reference leg backfill system verified to be isolated.
COMMENTS: Given as part of the initial conditions.	

PERFORMANCE STEP: Critical:	Verify adequate oil level in CRD pump 1P209A motor and speed changer.
STANDARD:	NSPEO sent to verify adequate oil.
COMMENTS:	

PERFORMANCE STEP: Critical: C	Close 1P209A Pump Discharge Isolation V-17-08 to approximately ½ open.
STANDARD:	NSPEO directed to throttle V-17-08 to ½ turn open.
COMMENTS:	

PERFORMANCE STEP: Critical: C	Adjust CRD SYSTEM FLOW CONTROL FC-1814 to 0 gpm in MANUAL.
STANDARD:	CRD flow controller FC-1814 taken to MANUAL and adjusted to 0 gpm.
COMMENTS:	

PERFORMANCE STEP: Critical: C	Start CRD Pump 1P-209A by momentarily placing handswitch HS-1807A on Panel 1C05 in the START position.
STANDARD:	1P209A started.
COMMENTS:	

PERFORMANCE STEP: Critical: C	Slowly open Discharge Isolation V-17-08.
STANDARD:	NSPEO directed to slowly open V-17-08.
COMMENTS:	

PERFORMANCE STEP: Critical:	Vent CRD Discharge Filters 1F-201A and B.
STANDARD:	NSPEO directed to vent the CRD pump discharge filters.
COMMENTS:	

PERFORMANCE STEP: Critical:	Throttle Drive Water ΔP MO-1830 open.
STANDARD:	MO-1830 throttled open.
COMMENTS: MO-1830 should already be throttled open.	

PERFORMANCE STEP: Critical: C	Slowly raise CRD System flow to 40 gpm with FC-1814 CRD SYSTEM FLOW CONTROL in MANUAL, then shift to AUTO.
STANDARD:	CRD System flow raised to 40 gpm and FC-1814 shifted to AUTO.
COMMENTS:	

PERFORMANCE STEP: Critical:	Adjust DRIVE WATER ΔP MO-1830, using HS-1830, at Panel 1C05 to maintain 260 psid.
STANDARD:	MO-1830 adjusted to maintain 260 psid.
COMMENTS:	

PERFORMANCE STEP: Critical:	At Panel 1C05, verify INLET TO CRD RETURN LINE MO-1833 is fully open.
STANDARD:	MO-1833 verified fully open.
COMMENTS:	

Time Stop _____

TERMINATING CUES:

VERIFICATION OF COMPLETION

JPM No.: 201001-06 JPM Description: Startup CRD under Normal Conditions

Operator: _____ Evaluator: _____

Licensee: ☐ RO ☐ SRO ☐ SRO Cert
☐ STA ☐ NSPEO

Result: ☐ SATISFACTORY ☐ UNSATISFACTORY

COMMENTS/FEEDBACK: (Note any trainee discrepancies or misperformed steps.)

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Evaluator's Signature Date