

Facility: Waterford III

Exam Level (circle one): RO / SRO(I) / SRO(U)

Date of Examination: 01/21/02

Operating Test No.: 1

B.1 Control Room Systems

System / JPM Title	Type Code*	Safety Function
a. VCT Makeup Using Acid/Water Batches (Primary Makeup Pump Trips)	M, S, A	1
b. Secure a Reactor Coolant Pump (Reverse Rotation)	M, S, L, A	4
c. Perform RCS Boron Equalization	N, S, L	3
d. Restore Normal Power to a 4.16KV Safety Bus and Secure the Emergency Diesel Generator (EDG Oil Leak)	N, S, A	6
e. ESFAS Reset: EFAS Reset Procedure	D, C, L	7
f. Aligning LPSI to Replace CS	D, C, L	5
g. Restoration From Control Room Isolation	D, S	8

B.2 Facility Walk-Through

a. Operate the Atmospheric Dump Valves Locally (Air Lost to Valve Actuator)	M, L, A	4
b. Restore Dry Cooling Tower Sump Pumps During a Control Room Evacuation and a Loss of Offsite Power (No Fire)	N, R, L	8
c. SUPS A Startup	D	6

* Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow-Power, (R)CA

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c.		

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Entergy

Job Performance Measure Examination -

15-Jan-02

MAKEUP TO THE VCT USING ACID/WATER BATCHES (PMU pump trips - Alternate path)

Site: W3 **Job:** RO **System:** CVC **Mode:** Norm **Number:** 49

Revision 3 12/06/2001

Approved rfiletc2 12/07/2001

Estimated Time(min) 30

Alternate Path Yes

References OP-002-005 CHEMICAL AND VOLUME CONTROL 16 00

NRC KA				Evaluation Methods	
3.1-004-A3.09	3.3	3.2		PERFORM	
3.1-004-A4.07	3.9	3.7		SIMULATOR	
3.2-004-A4.12	3.8	3.3		SIMULATE	

Trainee:

Evaluator:

Observer:

Date:

Satisfactory:

Unsatisfactory:

Directions to 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.

Initial Condition

RCS BORON CONCENTRATION IS 735 PPM
BAMT A BORON CONCENTRATION IS 5400 PPM
BAMT B BORON CONCENTRATION IS 5500 PPM
CHARGING AND LETDOWN ARE IN SERVICE

Task Standard

THE DESIRED AMOUNT OF WATER AND ACID HAVE BEEN ADDED AND ALL BORATION AND DILUTION IS SECURED

Tools

NONE

Safety Considerations

NONE

Initiating Cue

THE CRS DIRECTS YOU TO ADD 100 GALLONS OF PMU AND THE PROPER AMOUNT OF BORIC ACID FROM BAMT 'A' TO THE VCT USING ACID/WATER BATCH ADDITION

Terminating Cue

THE DESIRED BATCH ADDITION HAS BEEN ATTAINED AND ALL BORATION AND DILUTION IS SECURED

Performance Consequences

1. EXCESSIVE BORATION THAT WILL REQUIRE ADDITIONAL DILUTION PRIOR TO STARTUP.
2. EXCESSIVE DILUTION - UNDESIRE CRITICALITY AND POSSIBILITY OF CHALLENGING SAFETY PARAMETERS

Human Interfaces

NONE

Skills Knowledge

NONE

Instructor Notes

Task Elements

- | | | |
|---|--------------------------|--------------------------|
| | C | TC |
| 0 Perform the task in accordance with OP-002-005, step 6.11. Unless otherwise noted all steps performed at CP-4. Simulator provides the cues if performed in Simulator for all panel manipulations. | <input type="checkbox"/> | <input type="checkbox"/> |

-
- | | | |
|---|--------------------------|--------------------------|
| | C | TC |
| 1 Inform SM/CRS that this Section is being performed. | <input type="checkbox"/> | <input type="checkbox"/> |

Conditions/Cues 1. After examinee notifies SM/CRS of intent to perform step 6.11, cue examinee SM/CRS has been informed.

Standards 1. SM/CRS has been informed of intent to perform step 6.11 of OP-002-005

-
- | | | |
|---|--------------------------|--------------------------|
| | C | TC |
| 2 At SM/CRS discretion, calculate the volume of Boric Acid to be added on Attachment 11.8, Calculation of Boric Acid Volume for VCT Acid/Water Batches. | <input type="checkbox"/> | <input type="checkbox"/> |

Conditions/Cues 1. After examinee inquires as to the requirement of the SM/CRS, give examinee the prepared Att. 11.8

Standards 1. Boric acid to be added (gallons) has been calculated per Att. 11.8

-
- | | | |
|---|--------------------------|--------------------------|
| | C | TC |
| 3 Verify Direct Boration Valve, BAM-143, control switch in CLOSE. | <input type="checkbox"/> | <input type="checkbox"/> |

Conditions/Cues 1. After examinee locates (and manipulates to CLOSE if needed) the C/S for BAM-143, cue examinee valve is closed

Standards 1. Direct boration valve is closed and C/S is in CLOSE.

-
- | | | |
|--|-------------------------------------|--------------------------|
| | C | TC |
| 4 Set Boric Acid Makeup Batch Counter to volume of Boric Acid desired. | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Conditions/Cues 1. After examinee locates and simulates setting Boric Acid Makeup batch counter to volume of boric acid needed, cue examinee batch counter is properly set

Standards 1. Boric acid makeup batch counter is properly set. The batch counter should be set for 16 Gallons.

MAKEUP TO THE VCT USING ACID/WATER BATCHES (PMU pump trips - Alternate path)

- 5 Verify Boric Acid Makeup Pumps selector switch aligned to desired Boric Acid Makeup Pump.

C TC
☐ ☐

Conditions/Cues 1. After examinee locates and manipulates to proper alignment, the BA MU pump selector switch, cue examinee selector switch is positioned to select desired pump

Standards 1. Boric Acid Makeup Pumps selector switch aligned to desired Boric Acid Makeup Pump
2. This step is critical if not selected to 'A'

-
- 6 Place Makeup Mode selector switch to BORATE.

C TC
☒ ☐

Conditions/Cues 1. After examinee locates and manipulates the Makeup Mode selector switch to BORATE, cue examinee switch is properly positioned

Standards 1. Makeup mode selector switch in BORATE position

-
- 7 Verify selected Boric Acid Makeup Pump Starts.

C TC
☐ ☐

Conditions/Cues 1. After examinee locates selected BA MU pump running indication, cue examinee selected pump indicates running

Standards 1. Selected BA MU pump start is verified

-
- 8 Open VCT Makeup Valve, CVC-510

C TC
☒ ☐

Conditions/Cues After examinee locates and manipulates CVC-510, cue the examinee that the valve is open.

Standards CVC-510 is Opened.

C TC

☐ ☐

- 9 If manual control of Boric Acid flow is desired, then perform the following:
Verify Boric Acid Flow controller, BAM-IFIC-0210Y, in Manual.
Adjust Boric Acid Flow controller, BAM-IFIC-0210Y, output to >3 GPM flow rate.

Conditions/Cues 1. Operator may choose to place the Boric Acid Flow Controller (BAM-IFIC-0210Y) in either Manual or Auto. If manual control is selected, then this step is critical
2. After examinee locates and verifies BA flow controller in manual, cue examinee controller is in manual
3. After examinee adjusts BA flow controller output to greater than 3 gpm flowrate, cue examinee controller is adjusted to greater than 3 gpm flowrate

Standards 1. BA flow controller in Manual with flow rate adjusted to exceed 3 gpm for the totalizer to register properly.

C TC

☐ ☐

- 10 If automatic control of Boric Acid flow is desired, then perform the following:
Place Boric Acid Flow controller, BAM-IFIC-0210Y, in Auto.
Adjust Boric Acid Flow controller, BAM-IFIC-0210Y, setpoint potentiometer to >3 GPM flow rate.

Conditions/Cues 1. Operator may choose to place the Boric Acid Flow Controller (BAM-IFIC-0210Y) in either Manual or Auto. If auto control is selected, then this step is critical
2. After examinee locates and verifies BA flow controller in Auto, cue examinee controller is in Auto
3. After examinee adjusts BA flow controller output to greater than 3 gpm flowrate, cue examinee controller is adjusted to greater than 3 gpm flowrate

Standards BA flow controller in Auto with flow rate setpoint potentiometer adjusted to exceed 3 gpm for the totalizer to register properly.

C TC

☐ ☐

- 11 Verify Boric Acid Makeup Control Valve, BAM-141, Intermediate or Open.

Conditions/Cues 1. After examinee locates BAM-141 indication, cue examinee valve is in Intermediate or Open

Standards 1. BAM-141 indicates Intermediate or Open

MAKEUP TO THE VCT USING ACID/WATER BATCHES (PMU pump trips - Alternate path)

C TC

12 Observe Boric Acid flow rate for proper indication.

☐ ☐

Conditions/Cues 1. After examinee locates and observe BA flowrate indication, cue examinee BA flowrate indication is 5 gpm.

Standards 2. BA flowrate indication greater than 3 gpm

C TC

13 When Boric Acid Makeup Batch Counter has counted down to desired value (0), then verify Boric Acid Makeup Control Valve, BAM-141, Closed.

☐ ☐

Conditions/Cues 1. After examinee locates and verifies BAM batch counter has counted down to desired value (0), cue examinee desired value has been reached
2. After examinee locates indication and verifies BAM-141 closes when BAM batch counter reaches desired value, cue examinee valve goes closed.

Standards 3. BAM batch counter counted down to 0 and BAM-141 closed

C TC

14 Verify Boric Acid Flow controller, BAM-IFIC-0210Y, in Manual.

☐ ☐

Conditions/Cues 1. If manual operation was selected in step 9 this step is not critical
2. After examinee locates and verifies BA flow controller in manual, cue examinee controller is in manual
3. If Auto operation was selected in step 10 then this step IS critical:
4. After examinee locates and places BA flow controller in manual, cue examinee controller is in manual

Standards BAM flow controller in manual

C TC

15 Verify both Boric Acid Flow controller, BAM-IFIC-0210Y, output and setpoint potentiometer set to zero.

☒ ☐

Conditions/Cues 1. After examinee locates and verifies BAM flow controller output and setpoint potentiometer adjusted to zero, cue examinee they are at zero.

Standards 1. BAM flow controller output and setpoint potentiometer at zero

C TC

16 Place Makeup Mode selector switch to MANUAL.

☒ ☐

Conditions/Cues 1. After examinee locates and places Makeup Mode selector switch in Manual, cue examinee switch is in Manual

Standards 1. MU mode selector switch in Manual

MAKEUP TO THE VCT USING ACID/WATER BATCHES (PMU pump trips - Alternate path)

C TC

17 Verify selected Boric Acid Makeup Pump Stops.

☐ ☐

Conditions/Cues 1. After examinee locates selected BAM pump indication and verifies pump has stopped, cue examinee pump has stopped

Standards 1. Selected BAM pump has stopped

C TC

18 Set Primary Makeup Water Batch Counter to volume of Primary Makeup water desired.

☒ ☐

Conditions/Cues 1. After examinee locates and simulates setting PMU batch counter to volume of water needed, cue examinee batch counter is properly set

Standards 1. PMU batch counter set to volume of water needed (100 Gallons - Counter is Gallons X10)

C TC

19 Place Makeup Mode selector switch to DILUTE.

☒ ☐

Conditions/Cues 1. After examinee locates and manipulates the Makeup Mode selector switch to DILUTE, cue examinee switch is properly positioned

Standards 1. MU mode selector switch in DILUTE position

C TC

20 If manual control of Primary Makeup Water flow is desired, then perform the following:
Verify Primary Makeup Water Flow controller, PMU-IFIC-0210X, in Manual.
Adjust Primary Makeup Water Flow controller, PMU-IFIC-0210X, output to >5 GPM flow rate.

☐ ☐

Conditions/Cues 1. Operator may choose to place the PMU Controller in either Manual or Auto. If manual control is selected, then this step is critical
2. After examinee locates and verifies PMU flow controller in manual, cue examinee controller is in manual
3. After examinee adjusts PMU flow controller output to greater than 5 gpm flowrate, cue examinee controller is adjusted to greater than 5 gpm flowrate

Standards 1. PMU flow controller in Manual with flow rate adjusted to exceed 5 gpm for the totalizer to register properly.

MAKEUP TO THE VCT USING ACID/WATER BATCHES (PMU pump trips - Alternate path)

C TC

- 21 If automatic control of Primary Makeup Water flow is desired, then perform the following:
Place Primary Makeup Water Flow controller, PMU-IFIC-0210X, in Auto.
Adjust Primary Makeup Water Flow controller, PMU-IFIC-0210X, setpoint potentiometer to
>5 GPM flow rate.

☐ ☐

Conditions/Cues 1. Operator may choose to place the PMU Flow Controller in either Manual or Auto. If auto control is selected, then this step is critical
2. After examinee locates and verifies PMU flow controller in Auto, cue examinee controller is in Auto
3. After examinee adjusts PMU flow controller output to greater than 5 gpm flowrate, cue examinee controller is adjusted to greater than 5 gpm flowrate

Standards 1. PMU flow controller in Auto with flow rate setpoint potentiometer adjusted to exceed 5 gpm

C TC

- 22 Verify Primary Makeup Water Control Valve, PMU-144, Intermediate or Open.

☐ ☐

Conditions/Cues 1. After examinee locates PMU-144 indication, cue examinee valve is in Intermediate or Open

Standards 1. PMU-144 indication is Intermediate or Open

C TC

- 23 Observe Primary Makeup water flow rate for proper indication. (Alternate Path)

☒ ☐

Conditions/Cues 1. After examinee locates and observes PMU flowrate indication, cue examinee PMU flowrate indication is 100 gpm
2. Cue examinee PMU flowrate suddenly drops to zero, if examinee looks at selected PMU pump C/S, cue examinee pump has stopped
3. If examinee selects opposite PMU pump, cue examinee pump has started and PMU flowrate has restored
4. **If examinee requests guidance from the CRS, Cue the examinee to perform actions needed to ensure PMU addition is per Att. 6.11**

Standards 1. Examinee recovers from PMU pump trip by starting the standby PMU pump and PMU flowrate is > 5 gpm

C TC

- 24 When Primary Makeup Water Batch Counter has counted down to desired value (0), then verify Primary Makeup Water Control Valve, PMU-144, Closed.

☐ ☐

Conditions/Cues 1. After examinee locates and verifies PMU batch counter has counted down to desired value (0), cue examinee desired value has been reached
2. After examinee locates indication and verifies PMU-144 closes when PMU batch counter reaches desired value, cue examinee valve goes closed.

Standards 1. PMU batch counter counted down to 0 and PMU-144 closed

MAKEUP TO THE VCT USING ACID/WATER BATCHES (PMU pump trips - Alternate path)

C TC

25 Verify Primary Makeup Water Flow controller, PMU-IFIC-0210X, in Manual.

☐ ☐

Conditions/Cues 1. If manual operation was selected in step 20 this step is not critical
2. After examinee locates and verifies PMU flow controller in manual, cue examinee controller is in manual
3. If Auto operation was selected in step 21 then this step IS critical:
4. After examinee locates and places PMU flow controller in manual, cue examinee controller is in manual

Standards 1. PMU flow controller in manual

C TC

26 Verify both Primary Makeup Water Flow controller, PMU-IFIC-0210X, output and setpoint potentiometer set to zero.

☒ ☐

Conditions/Cues 1. After examinee locates and verifies PMU flow controller output and setpoint potentiometer adjusted to zero, cue examinee they are at zero

Standards 1. PMU flow controller output and setpoint potentiometer set to zero

C TC

27 Place Makeup Mode selector switch to MANUAL.

☒ ☐

Conditions/Cues 1. After examinee locates and places Makeup Mode selector switch in Manual, cue examinee switch is in Manual

Standards 1. MU Mode selector switch in Manual

C TC

28 End of task.

☐ ☐

Information for Trainee

Directions to Examinee:

Initial Condition

RCS BORON CONCENTRATION IS 735 PPM
BAMT A BORON CONCENTRATION IS 5400 PPM
BAMT B BORON CONCENTRATION IS 5500 PPM
CHARGING AND LETDOWN ARE IN SERVICE

Initiating Cue

THE CRS DIRECTS YOU TO ADD 100 GALLONS OF PMU AND THE PROPER AMOUNT OF
BORIC ACID FROM BAMT 'A' TO THE VCT USING ACID/WATER BATCH ADDITION



Entergy

Job Performance Measure Examination -

15-Jan-02

Startup SUPS A

Site: W3 **Job:** NAO **System:** ID **Mode:** Norm **Number:** 2

Revision 1 11/19/2001

Approved rfletc2 12/07/2001

Estimated Time(min) 15

References OP-006-005 INVERTERS AND DISTRIBUTION 11 01

NRC KA	3.6-062-A3.03	2.3	2.3	Evaluation Methods	PERFORM
	3.6-062-K4.10	3.1	3.5		SIMULATE
	3.6-062-A2.10	3	3.3		
	3.6-062-A3.04	2.9			

Trainee:

Evaluator:

Observer:

Date:

Satisfactory:

Unsatisfactory:

Directions to 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.

Initial Condition

1. SUPS A was completely shutdown for maintenance.
2. PDP 90A is deenergized.
3. SUPS A is ready to be returned to service.

Task Standard

1. SUPS A is energized and in operation, ready to supply its loads

Tools

None

Safety Considerations

1. Electrical safety hazard

Initiating Cue

1. The NPO directs you to startup SUPS A and leave load breakers in the OPEN position

Terminating Cue

1. SUPS A energized and operating with load breakers OPEN

Performance Consequences

1. Equipment damage
2. Personnel injury

Human Interfaces

1. NPO

Skills Knowledge

None

Instructor Notes

Task Elements

- | | | |
|--|--------------------------|--------------------------|
| | C | TC |
| 0 Perform the task in accordance with OP-006-005, section 5.2. All components to be operated are located in RAB SWGR 'A' | <input type="checkbox"/> | <input type="checkbox"/> |

-
- | | | |
|--|--------------------------|--------------------------|
| | C | TC |
| 1 Verify the following SUPS A panel breakers OFF:
ID-EBKR-A-2, SUPS A AC Input to Rectifier
ID-EBKR-A-3, SUPS A Battery Input
ID-EBKR-A-6, SUPS A Inverter Output
ID-EBKR-A-7, SUPS A Bypass Source AC Input | <input type="checkbox"/> | <input type="checkbox"/> |

Conditions/Cues 1. After the examinee locates the individual breakers, cue examinee the breakers are off

Standards 1. Breakers verified off

-
- | | | |
|--|--------------------------|--------------------------|
| | C | TC |
| 2 Verify Manual Bypass Switch in BYPASS TO LOAD. | <input type="checkbox"/> | <input type="checkbox"/> |

Conditions/Cues 1. After examinee locates manual bypass switch, cue examinee the switch is in the 'BYPASS TO LOAD' position
2. Prior to the next step, cue examinee PDP-90A is not energized from the BYPASS source

Standards 1. Examinee verifies the manual bypass switch is in 'BYPASS TO LOAD' position

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- | | | |
|---|--------------------------|--------------------------|
| | C | TC |
| 3 If PDP-90A is not energized from the Bypass source, then:
Refer to Attachment 11.10, SUPS A Circuit Loads, and verify all SUPS A load breakers OFF.
Verify Open System Output breaker, ID-EBKR-A-4. | <input type="checkbox"/> | <input type="checkbox"/> |

Conditions/Cues 1. Cue examinee that another NAO will verify all SUPS A load breakers off per ATT. 11.10
2. After examinee locates the system output breaker, cue examinee it's open

Standards 1. SUPS A load breakers verified off per ATTACHMENT 11.10
2. System output breaker verified off

C TC

☒ ☐

- 4 Verify the following SUPS A supply breakers to ON:
ID-EBKR-312A-2F, SUPS A Normal Supply
ID-EBKR-311A-3M, SUPS A Bypass Supply
ID-EBKR-A-35, SUPS A Emergency Supply (DC)

Conditions/Cues 1. When examinee locates each SUPS supply breaker, cue examinee the breaker is OFF
2. After examinee simulates repositioning breakers, cue examinee the breakers are ON

Standards 1. SUPS supply breakers verified on

C TC

☒ ☐

- 5 Press and hold Precharge pushbutton on SUPS A.
When Precharge light (Amber light) is lit, then Close Battery Input (ID-EBKR-A-3).
Release Precharge pushbutton.

Conditions/Cues 1. After examinee locates the DC INPUT METER, and the PRECHARGE PUSHBUTTON, and has simulated depressing the PRECHARGE PUSHBUTTON, cue examinee the precharge voltage is approximately 125 VDC on DC INPUT METER in and the PRECHARGE LIGHT is lit.

Standards 1. Examinee depresses and holds PRECHARGE PUSHBUTTON until PRECHARGE LIGHT is lit, verifying approximately 125 VDC on DC INPUT METER
2. Examinee closes BATTERY INPUT BREAKER (ID-EBKR-A-3), and then releases the PRECHARGE PUSHBUTTON

C TC

☒ ☐

- 6 Verify Closed the following breakers on SUPS A:
AC Input To Rectifier (ID-EBKR-A-2)
AC Input To Isolimiter (ID-EBKR-A-8)
Bypass Source AC Input (ID-EBKR-A-7)
System Output (ID-EBKR-A-4)
Inverter Output (ID-EBKR-A-6)

Conditions/Cues 1. After examinee locates and simulates closing the breakers, cue the examinee breakers are closed

Standards 2. Examinee verifies breakers are closed

C TC

- 7 If Bypass Source Supplying Load light is Extinguished and Inverter Supplying Load is Illuminated (approximately 30 seconds), then:
Verify unit is In Sync
Transfer Manual Bypass Switch to NORMAL OPERATION.

☒ ☐

Conditions/Cues 1. After examinee locates 'BYPASS SOURCE SUPPLYING LOAD' LIGHT, cue examinee it's not lit.
2. After examinee locates 'INVERTER SUPPLYING LOAD' LIGHT, cue examinee it's lit
3. After examinee locates 'IN SYNC' LIGHT, cue examinee it's lit.
4. After examinee locates and transfers the 'MANUAL BYPASS' SWITCH to NORMAL OPERATION, cue examinee it's in the 'NORMAL OPERATION' position

Standards 1. 'BYPASS SOURCE SUPPLYING LOAD LIGHT' is not lit verified
2. 'INVERTER SUPPLYING LOAD' LIGHT is lit verified
3. 'IN SYNC' LIGHT is lit verified
4. Examinee recognizes that steps 5.2.8 through 5.2.8.2 are not applicable

C TC

- 8 Close, DC Input to AN1 and AN2 breaker, ID-EBKR-A-5.

☒ ☐

Conditions/Cues 1. After examinee locates and simulates closing the breaker, cue examinee the breaker is closed

Standards 1. Examinee closes breaker

C TC

- 9 Perform Attachment 11.9, SUPS A Breaker Lineup.

☐ ☐

Conditions/Cues 1. After examinee locates and verifies breaker positions per ATTACHMENT 11.9, cue examinee all breakers are properly positioned.

Standards 1. All breaker positions verified per ATTACHMENT 11.9

C TC

- 10 Refer to Attachment 11.10, SUPS A Circuit Loads, and place required SUPS A load breakers to ON at SM/CRS discretion.

☐ ☐

Conditions/Cues 1. Cue the examinee the SM has directed another NAO to perform ATTACHMENT 11.10

Standards 1. Examinee verifies ATTACHMENT 11.10 has been performed by another NAO

<input type="checkbox"/>	<input type="checkbox"/>
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12 End of task

C	TC
<input type="checkbox"/>	<input type="checkbox"/>

Information for Trainee

Directions to Examinee:

Initial Condition

1. SUPS was completely shutdown for maintenance.
2. PDP 90A is deenergized.
3. SUPS A is ready to be returned to service.

Initiating Cue

1. The NPO directs you to startup SUPS A and leave load breakers in the OPEN position

Job Performance Measure Examination -

15-Jan-02

Operate The Atmospheric Dump Valve Locally

Site: W3 **Job:** NAO **System:** MS **Mode:** OffNorm **Number:** 8

Revision 5 08/03/2000

Approved rfletc2 12/07/2001

Estimated Time(min)	15
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Alternate Path	Yes
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References	OP-901-502	Att. 8	EVACUATION OF CONTROL ROOM AND SUBSEQUENT PLANT SHUTDOWN	06	02
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NRC KA	2-1-20	4.3	4.2	Evaluation Methods	PERFORM
	3.4-039-A4.07	2.8*	2.9		SIMULATE
	4.2-A68-AA1.0	4.3	4.5		
	4.2-A68-AK3.06	3.9	4.3		

Trainee:

Evaluator:

Observer:

Date:

Satisfactory:

Unsatisfactory:

Directions to 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.

Initial Condition

1. A fire has occurred in CP-2.
2. Control room evacuation has occurred and controls have been transferred to LCP-43.

Task Standard

1. Atmospheric Dump Valve MS-116A is in local control

Tools

NONE

Safety Considerations

NONE

Initiating Cue

You have been ordered by the PNPO to take local control of Atmospheric Dump Valve MS-116A and open it to 50%.

Terminating Cue

1. MS-116A is open to 50%.

Performance Consequences

1. Equipment damage
2. Overheating or overcooling the RCS
3. Cooldown rate in excess of Technical Specifications

Human Interfaces

1. PNPO

Skills Knowledge

None

Instructor Notes

Task Elements

- | | |
|---|---|
| | C TC |
| 0 Perform the task in accordance with referenced procedure OP-901-502, Attachment 8. All components are located in West MSIV area +46 RAB in the vicinity of the MSIV skid. | <input type="checkbox"/> <input type="checkbox"/> |
-

- | | |
|---|--|
| | C TC |
| 1 Note the pressure at the outlet to the transducer | <input checked="" type="checkbox"/> <input type="checkbox"/> |

Conditions/Cues 1. After the examinee locates the pressure gauge, cue the examinee the gauge reads 5 psig

Standards 1. The proper pressure gauge is located and the reading is noted

- | | |
|---|--|
| | C TC |
| 2 Adjust the pressure at the outlet of the air regulator on the front of the panel to the pressure noted in step 1. | <input checked="" type="checkbox"/> <input type="checkbox"/> |

Conditions/Cues 1. After the examinee simulates the method (turn the handle on top of the regulator counter-clockwise) for reducing pressure at the outlet of the regulator: pressure at the outlet of the regulator is 5 psig

Standards 1. Air pressure at the outlet of the air regulator adjusted to 5 psig

- | | |
|---|--|
| | C TC |
| 3 Turn the pneumatic permissive valve above the transducer counter-clockwise from AUTO to MANUAL. | <input checked="" type="checkbox"/> <input type="checkbox"/> |

Conditions/Cues 1. After the examinee simulates the method for manipulating the pneumatic permissive valve, cue the examinee the valve is in the MANUAL position

Standards 1. The pneumatic permissive valve is in the MANUAL position

- | | |
|---|--|
| | C TC |
| 4 Turn the pneumatic permissive valve above the air regulator on the front of the panel counter-clockwise from AUTO to MANUAL | <input checked="" type="checkbox"/> <input type="checkbox"/> |

Conditions/Cues 1. After the examinee simulates the method for manipulating the pneumatic permissive valve, cue the examinee the valve is in the MANUAL position

Standards 1. Pneumatic permissve valve is in the MANUAL position

Operate The Atmospheric Dump Valve Locally

C TC

- 5 Adjust the air regulator on the front of the panel to obtain desired valve position.

☐ ☐

Conditions/Cues 1. After the examinee simulates the method (turn the handle on top of the regulator clock-wise) for raising pressure at the outlet of the regulator and locates the valve position indicator for the atmospheric dump valve, cue examinee the atmospheric dump valve DID NOT MOVE and the NPO at LCP-43 orders you to attempt to position the ADV using the local handwheel.

Standards 1. Examinee attempts to raise the air pressure at the outlet of the air regulator by turning the handle on top of the air regulator clockwise and observes the atmospheric dump valve position (examinee may approach ADV to determine valve position)

C TC

- 6 Unscrew clevis from manual override shaft.

☒ ☐

Conditions/Cues 1. After examinee locates and simulates unscrewing clevis from manual override shaft, cue examinee clevis has been unscrewed from manual override shaft

Standards 1. Clevis is unscrewed from manual override shaft

C TC

- 7 Turn handwheel to expose actuator shaft above manual override shaft.

☒ ☐

Conditions/Cues 1. After examinee locates and simulates turning handwheel to expose actuator shaft, cue examinee actuator shaft is exposed

Standards 1. Actuator shaft is exposed

C TC

- 8 Slide clevis onto actuator shaft.

☒ ☐

Conditions/Cues 1. After examinee locates and simulates sliding clevis onto actuator shaft, cue examinee clevis has been slid onto actuator shaft

Standards 1. Clevis is in position on actuator shaft

C TC

- 9 Place bypass valve (on positioner) to HAND position.

☒ ☐

Conditions/Cues 1. After examinee locates and simulates manipulating bypass valve (on positioner) to HAND position (**Parallel to air line**, Note-valve is not labeled), cue examinee bypass valve is in HAND position

Standards 2. Bypass valve (on positioner) is in HAND position (Parallel to air line).

Operate The Atmospheric Dump Valve Locally

C TC

10 Turn handwheel to position valve plug as desired.

☒ ☐

Conditions/Cues 1. Examinee locates and simulates turning handwheel to the open direction, cue
examinee ADV is at 50%

Standards 1. ADV is open to 50%

C TC

11 End of task

☐ ☐

Information for Trainee

Directions to Examinee:

Initial Condition

1. A fire has occurred in CP-2.
2. Control room evacuation has occurred and controls have been transferred to LCP-43.

Initiating Cue

You have been ordered by the PNPO to take local control of Atmospheric Dump Valve MS-116A and open it to 50%.

Job Performance Measure Examination -

15-Jan-02

Restore Power to Dry Cooling Tower Sump Pumps During a Control Room Evacuation and LOOP

Site: W3 **Job:** NAO **System:** SP **Mode:** OffNorm **Number:** 1

Revision 1 11/19/2001

Approved rfletc2 12/07/2001

Estimated Time(min)	15
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References OP-901-502

EVACUATION OF CONTROL ROOM AND SUBSEQUENT PLANT SHUTDOWN	06	02
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NRC KA	2-4-11	3.4	3.6	Evaluation Methods	PERFORM
	2-4-34	3.8	3.6		SIMULATE
	4.2-A68-AK3.18	4.2	4.5		

Trainee:

Evaluator:

Observer:

Date:

Satisfactory:

Unsatisfactory:

Directions to 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.

Initial Condition

1. A loss of offsite power concurrent with control room evacuation. Emergency Diesel Generator B is supplying power to the B Safety busses.
2. Emergency Diesel Generator A failed to start.

Task Standard

Power restored to B train powered Dry Cooling Tower Sump Pumps.

Tools**Safety Considerations****Initiating Cue**

The NPO orders you to restore power to the B train powered Dry Cooling Tower Sump Pumps in accordance with OP-901-502, Subsection E1, step 16.

Terminating Cue

Power has been restored to the B train powered Dry Cooling Power Sump Pumps.

Performance Consequences

Possible flooding of DCT area

Human Interfaces**Skills Knowledge****Instructor Notes**

Task Elements

- | | |
|---|---|
| | C TC |
| 0 Perform the task in accordance with OP-901-502, E2, step 16. All steps performed in the +1 FHB SWGR room. | <input type="checkbox"/> <input type="checkbox"/> |
-

- | | |
|--|--|
| | C TC |
| 1 IF Emergency Diesel Generator B is supplying power to Train B Safety busses, THEN perform the following:
Place the following switches to bypass: (Switches located on respective pump breaker cubicles at MCC 314B)
(West) DCT #1 Sump Pump B Radiation Monitor bypass switch
(East) DCT #2 Sump Pump B Radiation Monitor bypass switch | <input checked="" type="checkbox"/> <input type="checkbox"/> |
-

Conditions/Cues

1. When examinee locates and simulates placing the radiation monitor bypass switches to Bypass , cue examinee the switches are in Bypass

Standards 1. DCT 1 and 2 sump pump B radiation monitor bypass switches placed to the Bypass position

- | | |
|--|---|
| | C TC |
| 2 Locally Open ALL non-safety bus load breakers on MCC-314B. | <input type="checkbox"/> <input type="checkbox"/> |
-

Conditions/Cues 1. When examinee locates and simulates opening all non-safety-related bus load breakers on MCC-314B, cue examinee the breakers are open (all breakers are to the right side of the Safety to Non-Safety Tie Bkr)

Standards 1. All non-safety-related bus load breakers on MCC-314B are open

- | | |
|--|--|
| | C TC |
| 3 Locally Close SSDEBKR314B-2M, MCC 314B Safety to Non-Safety Tie. | <input checked="" type="checkbox"/> <input type="checkbox"/> |
-

Conditions/Cues 1. When examinee locates and simulates closing the safety to non-safety tie breaker, cue the examinee the breaker is closed

Standards 2. Safety to non-safety tie breaker is closed

- | | |
|---|--|
| | C TC |
| 4 Locally Close SP EBKR314B-4F, West Dry Cooling Tower Sump Pump B. | <input checked="" type="checkbox"/> <input type="checkbox"/> |
-

Conditions/Cues 1. When examinee locates and simulates closing the West DCT sump pump breaker, cue examinee the breaker is closed

Standards 1. West DCT sump pump breaker is closed

C TC

5 Locally Close SP EBKR314B-5F, East Dry Cooling Tower Sump Pump B.

☒ ☐

Conditions/Cues 1. When examinee locates and simulates closing East DCT sump pump breaker,
cue examinee breaker is closed

Standards 1. East DCT sump pump breaker is closed

C TC

6 End of task

☐ ☐

Information for Trainee

Directions to Examinee:

Initial Condition

1. A loss of offsite power concurrent with control room evacuation. Emergency Diesel Generator B is supplying power to the B Safety busses.
2. Emergency Diesel Generator A failed to start.

Initiating Cue

The NPO orders you to restore power to the B train powered Dry Cooling Tower Sump Pumps in accordance with OP-901-502, Subsection E1, step 16.



Entergy

Job Performance Measure Examination -

15-Jan-02

Restore Normal Power to a 4.16 KV Safety Bus and Secure the Emergency Diesel Generator

Site: W3 **Job:** RO **System:** EDG **Mode:** Emerg **Number:** 100

Revision 1 11/20/2001

Approved rfiletc2 12/07/2001

Estimated Time(min) 15

Alternate Path Yes

References OP-902-009 Att. 12 Emergency Operating Procedure Standard 0.1 00
Appendices

NRC KA				Evaluation Methods	
3.6-064-A2.03	3.1	3.1		SIMULATE	
3.6-064-A2.04	2.7	3		SIMULATOR	
3.6-064-A2.01	3.1*	3.3		PERFORM	
3.6-064-K3.02	4.2	4.4			

Trainee:

Evaluator:

Observer:

Date:

Satisfactory:

Unsatisfactory:

Directions to 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.

Initial Condition

1. The plant is in MODE 3 following a Rx trip.
2. 4.16 KV non-safety bus A2 is energized from Offsite Power.
3. 4.16 KV safety bus A3 is energized from EDG A.

Task Standard

1. 4.16 KV safety bus A3 is being powered from non-safety 4.16 KV bus A2.
2. EDG 'A' is secured

Tools

1. Synchronizer Key

Safety Considerations**Initiating Cue**

1. CRS directs you to transfer 4.16 KV safety bus A3 from EDG to offsite power in accordance with OP-902-009 Att. 12C.

Terminating Cue

1. EDG 'A' is secured

Performance Consequences

1. Potential loss of ESF power from 4.16 KV safety bus A3
2. Possible damage to EDG A due to loss of lube oil

Human Interfaces

SM/CRS

Skills Knowledge**Instructor Notes**

Task Elements

- | | |
|---|---|
| | C TC |
| 0 Perform task in accordance with OP-902-009, Attachment 12-C, step 1. All steps performed at CP-1. | <input type="checkbox"/> <input type="checkbox"/> |

Conditions/Cues Examiner to provide cues in main control room. If performed in simulator, then simulator will provide cues.

-
- | | |
|---|---|
| | C TC |
| 1 Verify bus A3S to A2 tie breaker OPEN | <input type="checkbox"/> <input type="checkbox"/> |

Conditions/Cues 1. After examinee locates tie breaker control switch, cue examinee tie breaker is open

Standards 1. A3S to A2 bus tie breaker open

-
- | | |
|-----------------------------------|--|
| | C TC |
| 2 Close bus A2 to A3S tie breaker | <input checked="" type="checkbox"/> <input type="checkbox"/> |

Conditions/Cues 1. After examinee locates and simulates closing tie breaker, cue examinee tie breaker is open

Standards 1. A2 to A3S bus tie breaker closed

-
- | | |
|---|--|
| | C TC |
| 3 Place the synchronizer keyswitch in 'BUS TIE' | <input checked="" type="checkbox"/> <input type="checkbox"/> |

Conditions/Cues 1. After examinee locates synchronizer key and synchronizer keyswitch, and simulates placing the keyswitch in "BUS TIE", cue the examinee the keyswitch is in the 'BUS TIE' position.

Standards 1. Synchronizer keyswitch in the 'BUS TIE' position

-
- | | |
|--|--|
| | C TC |
| 4 Adjust EDG A voltage to equal system voltage | <input checked="" type="checkbox"/> <input type="checkbox"/> |

Conditions/Cues 1. After examinee locates voltage adjuster and simulates adjusting EDG A voltage ~ equal to system voltage, cue examinee EDG A voltage equal to system voltage.

Standards 1. EDG A voltage ~ equal to system voltage

C TC

- 5 Adjust engine speed until synchroscope rotates slowly clockwise.

☒ ☐

Conditions/Cues 1. After examinee locates EDG A speed adjuster and simulates adjusting engine speed until synchroscope rotates slowly clockwise, cue examinee the synchroscope is rotating slowly clockwise.

Standards 1. Synchroscope rotating slowly in the clockwise direction.

C TC

- 6 Close bus A3S to A2 tie breaker at 5 minutes to 12 position on the synchroscope.

☒ ☐

Conditions/Cues 1. After examinee locates and simulates closing the A3S to A2 tie breaker (just as the synchroscope shows 5 minutes to 12 position), cue the examinee the tie breaker is closed.

Standards 1. Examinee verifies synchroscope position at 5 minutes to 12 prior to closing tie breaker.
2. Bus A3S to A2 tie breaker closed

C TC

- 7 Place synchronizer keyswitch in OFF.

☒ ☐

Conditions/Cues 1. After examinee locates and simulates placing the synchronizer keyswitch in OFF, cue the examinee the switch is OFF

Standards 1. Synchronizer keyswitch in OFF

C TC

- 8 Reduce load on EDG A to 0.1 MW and 0.1 MVARs.

☐ ☐

Conditions/Cues 1. After examinee locates the EDG A speed control and simulates reducing MW, cue examinee the NAO reports a large oil leak on the engine driven lube oil pump discharge and crankcase oil level is dropping.

Standards 1. Examinee locates speed control switch and starts to reduce load

C TC

- 9 Examinee depresses EDG A trip pushbutton on CP-1 or orders NAO to pull overspeed trip plunger locally.

☒ ☐

Conditions/Cues 1. After examinee locates and simulates depressing the EDG A trip pushbutton, cue the examinee the EDG A is tripped OR
2. If examinee gives the NAO the order to pull overspeed, cue the examinee that EDG A overspeed plunger is pulled and the EDG A is stopped.

Standards 1. EDG A is secured

Restore Normal Power to a 4.16 KV Safety Bus and Secure the Emergency Diesel Generator

11 End of Task

C **TC**
☐ ☐

Information for Trainee

Directions to Examinee:

Initial Condition

1. The plant is in MODE 3 following a Rx trip.
2. 4.16 KV non-safety bus A2 is energized from Offsite Power.
3. 4.16 KV safety bus A3 is energized from EDG A.

Initiating Cue

1. CRS directs you to transfer 4.16 KV safety bus A3 from EDG to offsite power in accordance with OP-902-009 Att. 12C.

Return Emergency Feedwater to normal after EFAS initiation

Site: W3 **Job:** RO **System:** EFW **Mode:** Emerg **Number:** 12

Revision 4 11/21/2001

Approved rfletc2 12/07/2001

Estimated Time(min)	20
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References	OP-902-009	App. 5-C	Emergency Operating Procedure Standard Appendices	0.1	00
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NRC KA	4.2-A54-AK3.04	4.4	4.6	Evaluation Methods	SIMULATE SIMULATOR
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Trainee:

Evaluator:

Observer: Date:

Satisfactory: 

Unsatisfactory: 

Directions to 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.

Initial Condition

1. A plant trip and an Emergency Feedwater Actuation Signal 1 and 2 has occurred
2. The auxiliary feedwater pump has been started and is now maintaining steam generator levels 50% to 70 % NR
3. The EFW system is no longer needed

Task Standard

1. EFW System has been returned to standby

Tools

None

Safety Considerations

None

Initiating Cue

1. You are ordered by the CRS to return the Emergency Feedwater System to normal in accordance with OP-902-009 Standard Appendices 5 Attachment 5-C

Terminating Cue

1. The EFW System has been reset and placed in automatic standby mode

Performance Consequences

1. Possible Equipment Damage

Human Interfaces

1. SM/CRS

Skills Knowledge

None

Instructor Notes

Task Elements

- | | | |
|---|--------------------------|--------------------------|
| | C | TC |
| 0 Perform task in accordance with OP-902-009, Attachment 5-C. All steps performed in main control room or simulator. All components to be manipulated are located on CP-8 unless otherwise noted. | <input type="checkbox"/> | <input type="checkbox"/> |

-
- | | | |
|--|--------------------------|--------------------------|
| | C | TC |
| 1 Verify steam generator level is being maintained or restored to 50% to 70% NR using MFW. | <input type="checkbox"/> | <input type="checkbox"/> |

Conditions/Cues 1. When examinee has located SG NR level indicators, cue examinee level is 60% NR

Standards 1. Examinee has verified SG level to be 50% to 70% NR or restoring

-
- | | | |
|---|--------------------------|--------------------------|
| | C | TC |
| 2 Verify EFAS-1 manual actuation switches in NORM position (CP-7 and CP-8). | <input type="checkbox"/> | <input type="checkbox"/> |

Conditions/Cues 1. After examinee locates EFAS-1 manual actuation switches, cue examinee switches are in NORM position
(Step is critical if EFAS-1 actuation switches are found in the ACT position)

Standards 1. EFAS-1 manual actuation switches verified in NORM position (CP-7 and CP-8)

-
- | | | |
|---|--------------------------|--------------------------|
| | C | TC |
| 3 Verify EFAS-2 manual actuation switches in NORM position (CP-7 and CP-8). | <input type="checkbox"/> | <input type="checkbox"/> |

Conditions/Cues 1. After examinee locates EFAS-2 manual actuation switches, cue examinee switches are in NORM position
(Step is critical if EFAS-2 actuation switches are found in the ACT position)

Standards 1. EFAS-2 manual actuation switches verified in NORM position (CP-7 and CP-8)

-
- | | | |
|--|-------------------------------------|--------------------------|
| | C | TC |
| 4 Press both EFAS-1 reset pushbuttons (CP-33). | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Conditions/Cues 1. After examinee locates and simulates pressing both EFAS-1 reset pushbuttons on CP-33, cue examinee both pushbuttons have been depressed.
2. When examinee locates initiation lights for EFAS-1 at CP-10, cue examinee lights are lit
3. When examinee locates EFAS-1 alarms on CP-2, cue examinee alrms are clear

Standards 1. EFAS-1 signal has been reset

C TC

- 5 Press both EFAS-2 reset pushbuttons (CP-33).

☒ ☐

Conditions/Cues 1. After examinee locates and simulates pressing both EFAS-2 reset pushbuttons on CP-33, cue examinee both pushbuttons have been depressed.
2. When examinee locates initiation lights for EFAS-2 at CP-10, cue examinee lights are lit
3. When examinee locates EFAS-2 alarms on CP-2, cue examinee alrms are clear

Standards 1. EFAS-2 signal has been reset

C TC

- 6 Verify EFW pump A is secured and place the control switch to normal (mid-position).

☒ ☐

Conditions/Cues 1. When examinee has located EFW pump A control switch and simulated securing the pump, cue examinee pump is secured
2. When examinee has placed the control switch to mid-position, cue examinee control switch is in mid-position
3. When examinee has located the EFW pump A UNAVAILABLE alarm on CP-8, cue examinee the alarm is clear (not critical)

Standards 1. EFW pump A has been verified secure and control switch is in mid-position

C TC

- 7 Verify EFW pump B is secured and place the control switch to normal (mid-position).

☒ ☐

Conditions/Cues 1. When examinee has located EFW pump B control switch and simulated securing the pump, cue examinee pump is secured
2. When examinee has placed the control switch to mid-position, cue examinee control switch is in mid-position
3. When examinee has located the EFW pump B UNAVAILABLE alarm on CP-8, cue examinee the alarm is clear (not critical)

Standards 1. EFW pump B has been verified secure and control switch is in mid-position

C TC

- 8 Verify MS-401A, EFW pump AB TURB STM SUPPLY SG 1 is closed.

☒ ☐

Conditions/Cues 1. After examinee locates the control for MS-401A and manipulates it to the closed position, cue examinee the valve is closed

Standards 1. MS-401A, EFW pump AB TURB STM SUPPLY SG 1 is closed

C TC

- 9 Verify MS-401B, EFW pump AB TURB STM SUPPLY SG 2 is closed.

☒ ☐

Conditions/Cues 1. After examinee locates the control for MS-401B and manipulates it to the closed position, cue examinee the valve is closed

Standards 1. MS-401B, EFW pump AB TURB STM SUPPLY SG 2 is closed

C TC

- 10 Verify Emergency Feedwater flow control valves are closed:

☐ ☐

EFW 223A, SG1 Backup
EFW 224A, SG1 Primary
EFW 223B, SG2 Backup
EFW 224B, SG2 Primary

Conditions/Cues 1. After examinee verifies Emergency Feedwater flow control valves closed, cue examinee the valves are closed

Standards 1. Emergency Feedwater flow control valves are closed

C TC

- 11 Place Emergency Feedwater flow control valves in AUTO:

☒ ☐

EFW 223A, SG1 Backup
EFW 224A, SG1 Primary
EFW 223B, SG2 Backup
EFW 224B, SG2 Primary

Conditions/Cues 1. After examinee locates controls and simulates placing Emergency Feedwater flow control valves in AUTO, cue examinee valves are in AUTO

Standards 1. Emergency Feedwater flow control valves in AUTO

C TC

- 12 Close Emergency Feedwater isolation valves:

☒ ☐

EFW 229A, SG1 Backup
EFW 228A, SG1 Primary
EFW 229B, SG2 Backup
EFW 228B, SG2 Primary

Conditions/Cues 1. After examinee locates control for Emergency Feedwater isolation valves and manipulates to the closed position, cue examinee the valves are closed

Standards 1. Emergency Feedwater isolation valves are closed

C TC

- 13 End of task

☐ ☐

Information for Trainee

Directions to Examinee:

Initial Condition

1. A plant trip and an Emergency Feedwater Actuation Signal 1 and 2 has occurred
2. The auxiliary feedwater pump has been started and is now maintaining steam generator levels 50% to 70 % NR
3. The EFW system is no longer needed

Initiating Cue

1. You are ordered by the CRS to return the Emergency Feedwater System to normal in accordance with OP-902-009 Standard Appendices 5 Attachment 5-C



Entergy

Job Performance Measure Examination -

15-Jan-02

Restore from control room isolation

Site: W3 **Job:** RO **System:** HVC **Mode:** Norm **Number:** 28

Revision 2 11/26/2001

Approved rfletc2 12/07/2001

Estimated Time(min) 5

References OP-003-014 CONTROL ROOM HEATING AND VENTILATION (HVAC) 07 00

NRC KA 3.2-013-A3.02 4.1 4.2 **Evaluation Methods** PERFORM
SIMULATE
SIMULATOR

Trainee:

Evaluator:

Observer:

Date:

Satisfactory:

Unsatisfactory:

Directions to 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.

Initial Condition

1. The control room envelope has been manually isolated as a precaution due to a chemical spill
2. The spill has been contained and chemistry reports that outside air quality is normal

Task Standard

1. Normal control room ventilation is restored

Tools

None

Safety Considerations

None

Initiating Cue

1. The CRS directs you to restore from the control room isolation

Terminating Cue

1. The control room ventilation system has been restored from isolation

Performance Consequences

None

Human Interfaces

1. CRS

Skills Knowledge

None

Instructor Notes

Task Elements

- | | |
|---|---|
| | C TC |
| 0 Perform the task in accordance with OP-003-014, step 8.7. Unless otherwise specified, all steps performed at CP-18. If performed in the simulator, all cues (except for element 1) are provided by the simulator. | <input type="checkbox"/> <input type="checkbox"/> |

-
- | | |
|---|--|
| | C TC |
| 1 Locally at CP-53, place both Control Room Ventilation Manual Isolation switches to RESET. | <input checked="" type="checkbox"/> <input type="checkbox"/> |

Conditions/Cues 1. After examinee locates and resets both Control Room Ventilation Manual Isolation switches, cue examinee both switches have been reset

Standards 1. Both Control Room Ventilation Manual Isolation switches have been reset

-
- | | |
|---|--|
| | C TC |
| 2 Verify following valves are Open:
HVC-101, CR Norm OAI Dnstrm Isol
HVC-102, CR Norm OAI Upstrm Isol | <input checked="" type="checkbox"/> <input type="checkbox"/> |

Conditions/Cues 1. After examinee locates controls/indications for valves, cue examinee valves are open

Standards 1. HVC-101 and HVC-102 are open

-
- | | |
|--|--|
| | C TC |
| 3 Start Toilet Exhaust Fan A(B), HVC-MFAN-0011A(B), then verify following:
HVC-304A, CR Toilet Exh Fan Bypass Damper Closed
HVC-304B, CR Toilet Exh Fan Bypass Damper Closed
HVC-306, CR Toilet Exh Fan Upstrm Isol Open
HVC-307, CR Toilet Exh Fan Dnstrm Isol Open | <input checked="" type="checkbox"/> <input type="checkbox"/> |

Conditions/Cues 1. After examinee locates controls for and verifies position, cue examinee bypass dampers closed and isolations open

Standards 1. Bypass dampers closed and isolations open

C TC

☒ ☐

- 4 Start Control Room Kitchen/Conference Exhaust Fan, HVC-MFAN-0012, then verify following:
HVC-312A, Kitchen/Conf Rm Exh Fan Bypass Damper Closed
HVC-312B, Kitchen/Conf Rm Exh Fan Bypass Damper Closed
HVC-313, Kitchen/Conf Rm Exh Fan Upstream Isol Open
HVC-314, Kitchen/Conf Rm Exh Fan Downstream Isol Open

Conditions/Cues 1. After examinee locates controls for and starts exhaust fan, cue examinee exhaust fan has started.
2. After locating controls/indications for bypass dampers and upstream and downstream isolations, cue examinee dampers are closed and isolations are open

Standards 1. Control Room Kitchen/Conference Exhaust Fan, HVC-MFAN-0012 is running
2. HVC-312A, and HVC-312B are closed
3. HVC-313 and HVC-314 are open

C TC

☒ ☐

- 5 Reset the following valves by taking C/S switch through CLOSE position:
HVC-201A, CR Emerg Fltr Unit N OAI Upstream Isol
HVC-201B, CR Emerg Fltr Unit N OAI Upstream Isol
HVC-203A, CR Emerg Fltr Unit S OAI Upstream Isol
HVC-203B, CR Emerg Fltr Unit S OAI Upstream Isol
HVC-202A, CR Emerg Fltr Unit N OAI Downstream Isol
HVC-202B, CR Emerg Fltr Unit N OAI Downstream Isol
HVC-204A, CR Emerg Fltr Unit S OAI Downstream Isol
HVC-204B, CR Emerg Fltr Unit S OAI Downstream Isol

Conditions/Cues 1. After examinee locates C/S for and manipulates through the CLOSE position, cue examinee the up and downstream OAI isolation valves are reset

Standards 1. Up and downstream OAI isolation valve control switches have been manipulated through the CLOSE position

C TC

☒ ☐

- 6 Verify Closed the following valves:
HVC-201A, CR Emerg Fltr Unit N OAI Upstream Isol
HVC-201B, CR Emerg Fltr Unit N OAI Upstream Isol
HVC-203A, CR Emerg Fltr Unit S OAI Upstream Isol
HVC-203B, CR Emerg Fltr Unit S OAI Upstream Isol

Conditions/Cues 1. After locating controls and indications for and verifying closed the N and S OAI upstream isolation valves, cue examinee isolations are closed

Standards 1. N and S OAI upstream isolation valves are closed

C TC

☒ ☐

- 7 Open the following valves:
- HVC-202A, CR Emerg Fltr Unit N OAI Downstream Isol
 - HVC-202B, CR Emerg Fltr Unit N OAI Downstream Isol
 - HVC-204A, CR Emerg Fltr Unit S OAI Downstream Isol
 - HVC-204B, CR Emerg Fltr Unit S OAI Downstream Isol

Conditions/Cues 1. After examinee locates and manipulates controls to open N and S OAI downstream isolation valves, cue examinee valves are open

Standards 1. N and S OAI downstream isolation valves are open

C TC

☐ ☐

- 8 If required, then Stop Control Room Emergency Filtration Unit A(B), HVC-MFAN-0010A(B), and verify following:
- HVC-205A(B), CR Emerg Fltr Unit A(B) Inlet Damper Closed
 - HVC-213A(B), CR Emerg Fltr Unit A(B) Recirc Damper Closed

Conditions/Cues 1. After examinee locates and manipulates the control for CR Emerg Filtration unit, cue examinee filtration unit is stopped.

2. After examinee locates indication for inlet and recirc damper, cue examinee dampers are closed

3. This step only critical if an Emergency Filtration Unit is running

Standards 1. Control Room Emergency Filtration Unit A(B) is stopped

2. Associated dampers closed

C TC

☐ ☐

- 9 End of task
-

Information for Trainee

Directions to Examinee:

Initial Condition

1. The control room envelope has been manually isolated as a precaution due to a chemical spill
2. The spill has been contained and chemistry reports that outside air quality is normal

Initiating Cue

1. The CRS directs you to restore from the control room isolation

Facility: Waterford III

Exam Level (circle one): RO / SRO(I) / SRO(U)

Date of Examination: 01/21/02

Operating Test No.: 1

B.1 Control Room Systems

System / JPM Title	Type Code*	Safety Function
a. VCT Makeup Using Acid/Water Batches (Primary Makeup Pump Trips)	M, S, A	1
b. Secure a Reactor Coolant Pump (Reverse Rotation)	M, S, L, A	4
c. Perform RCS Boron Equalization	N, S, L	3
d. Restore Normal Power to a 4.16KV Safety Bus and Secure the Emergency Diesel Generator (EDG Oil Leak)	N, S, A	6
e. ESFAS Reset: EFAS Reset Procedure	D, C, L	7
f. Aligning LPSI to Replace CS	D, C, L	5
g. Restoration From Control Room Isolation	D, S	8

B.2 Facility Walk-Through

a. Operate the Atmospheric Dump Valves Locally (Air Lost to Valve Actuator)	M, L, A	4
b. Restore Dry Cooling Tower Sump Pumps During a Control Room Evacuation and a Loss of Offsite Power (No Fire)	N, R, L	8
c. SUPS A Startup	D	6

* Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow-Power, (R)CA

Facility: Waterford III

Exam Level (circle one): RO / SRO(I) / SRO(U)

Date of Examination: 01/21/02

Operating Test No.: 1

B.1 Control Room Systems

System / JPM Title	Type Code*	Safety Function
a. VCT Makeup Using Acid/Water Batches (Primary Makeup Pump Trips)	M, S, A	1
b. Secure a Reactor Coolant Pump (Reverse Rotation)	M, S, L, A	4
c. ESFAS Reset: EFAS Reset Procedure	D, C, L	7
d.		
e.		
f.		
g.		

B.2 Facility Walk-Through

a. Restore Dry Cooling Tower Sump Pumps During a Control Room Evacuation and a Loss of Offsite Power (No Fire)	N, R, L	8
b. SUPS A Startup	D	6
c.		

* Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow-Power, (R)CA



Entergy

Job Performance Measure Examination -

15-Jan-02

MAKEUP TO THE VCT USING ACID/WATER BATCHES (PMU pump trips - Alternate path)

Site: W3 **Job:** RO **System:** CVC **Mode:** Norm **Number:** 49

Revision 3 12/06/2001

Approved rfiletc2 12/07/2001

Estimated Time(min) 30

Alternate Path Yes

References OP-002-005 CHEMICAL AND VOLUME CONTROL 16 00

NRC KA				Evaluation Methods	
3.1-004-A3.09	3.3	3.2		PERFORM	
3.1-004-A4.07	3.9	3.7		SIMULATOR	
3.2-004-A4.12	3.8	3.3		SIMULATE	

Trainee:

Evaluator:

Observer:

Date:

Satisfactory:

Unsatisfactory:

Directions to 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.

Initial Condition

RCS BORON CONCENTRATION IS 735 PPM
BAMT A BORON CONCENTRATION IS 5400 PPM
BAMT B BORON CONCENTRATION IS 5500 PPM
CHARGING AND LETDOWN ARE IN SERVICE

Task Standard

THE DESIRED AMOUNT OF WATER AND ACID HAVE BEEN ADDED AND ALL BORATION AND DILUTION IS SECURED

Tools

NONE

Safety Considerations

NONE

Initiating Cue

THE CRS DIRECTS YOU TO ADD 100 GALLONS OF PMU AND THE PROPER AMOUNT OF BORIC ACID FROM BAMT 'A' TO THE VCT USING ACID/WATER BATCH ADDITION

Terminating Cue

THE DESIRED BATCH ADDITION HAS BEEN ATTAINED AND ALL BORATION AND DILUTION IS SECURED

Performance Consequences

1. EXCESSIVE BORATION THAT WILL REQUIRE ADDITIONAL DILUTION PRIOR TO STARTUP.
2. EXCESSIVE DILUTION - UNDESIRE CRITICALITY AND POSSIBILITY OF CHALLENGING SAFETY PARAMETERS

Human Interfaces

NONE

Skills Knowledge

NONE

Instructor Notes

Task Elements

- | | | |
|---|--------------------------|--------------------------|
| | C | TC |
| 0 Perform the task in accordance with OP-002-005, step 6.11. Unless otherwise noted all steps performed at CP-4. Simulator provides the cues if performed in Simulator for all panel manipulations. | <input type="checkbox"/> | <input type="checkbox"/> |

-
- | | | |
|---|--------------------------|--------------------------|
| | C | TC |
| 1 Inform SM/CRS that this Section is being performed. | <input type="checkbox"/> | <input type="checkbox"/> |

Conditions/Cues 1. After examinee notifies SM/CRS of intent to perform step 6.11, cue examinee SM/CRS has been informed.

Standards 1. SM/CRS has been informed of intent to perform step 6.11 of OP-002-005

-
- | | | |
|---|--------------------------|--------------------------|
| | C | TC |
| 2 At SM/CRS discretion, calculate the volume of Boric Acid to be added on Attachment 11.8, Calculation of Boric Acid Volume for VCT Acid/Water Batches. | <input type="checkbox"/> | <input type="checkbox"/> |

Conditions/Cues 1. After examinee inquires as to the requirement of the SM/CRS, give examinee the prepared Att. 11.8

Standards 1. Boric acid to be added (gallons) has been calculated per Att. 11.8

-
- | | | |
|---|--------------------------|--------------------------|
| | C | TC |
| 3 Verify Direct Boration Valve, BAM-143, control switch in CLOSE. | <input type="checkbox"/> | <input type="checkbox"/> |

Conditions/Cues 1. After examinee locates (and manipulates to CLOSE if needed) the C/S for BAM-143, cue examinee valve is closed

Standards 1. Direct boration valve is closed and C/S is in CLOSE.

-
- | | | |
|--|-------------------------------------|--------------------------|
| | C | TC |
| 4 Set Boric Acid Makeup Batch Counter to volume of Boric Acid desired. | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Conditions/Cues 1. After examinee locates and simulates setting Boric Acid Makeup batch counter to volume of boric acid needed, cue examinee batch counter is properly set

Standards 1. Boric acid makeup batch counter is properly set. The batch counter should be set for 16 Gallons.

MAKEUP TO THE VCT USING ACID/WATER BATCHES (PMU pump trips - Alternate path)

- 5 Verify Boric Acid Makeup Pumps selector switch aligned to desired Boric Acid Makeup Pump.

C TC
☐ ☐

Conditions/Cues 1. After examinee locates and manipulates to proper alignment, the BA MU pump selector switch, cue examinee selector switch is positioned to select desired pump

Standards 1. Boric Acid Makeup Pumps selector switch aligned to desired Boric Acid Makeup Pump
2. This step is critical if not selected to 'A'

-
- 6 Place Makeup Mode selector switch to BORATE.

C TC
☒ ☐

Conditions/Cues 1. After examinee locates and manipulates the Makeup Mode selector switch to BORATE, cue examinee switch is properly positioned

Standards 1. Makeup mode selector switch in BORATE position

-
- 7 Verify selected Boric Acid Makeup Pump Starts.

C TC
☐ ☐

Conditions/Cues 1. After examinee locates selected BA MU pump running indication, cue examinee selected pump indicates running

Standards 1. Selected BA MU pump start is verified

-
- 8 Open VCT Makeup Valve, CVC-510

C TC
☒ ☐

Conditions/Cues After examinee locates and manipulates CVC-510, cue the examinee that the valve is open.

Standards CVC-510 is Opened.

C TC

☐ ☐

- 9 If manual control of Boric Acid flow is desired, then perform the following:
Verify Boric Acid Flow controller, BAM-IFIC-0210Y, in Manual.
Adjust Boric Acid Flow controller, BAM-IFIC-0210Y, output to >3 GPM flow rate.

Conditions/Cues 1. Operator may choose to place the Boric Acid Flow Controller (BAM-IFIC-0210Y) in either Manual or Auto. If manual control is selected, then this step is critical
2. After examinee locates and verifies BA flow controller in manual, cue examinee controller is in manual
3. After examinee adjusts BA flow controller output to greater than 3 gpm flowrate, cue examinee controller is adjusted to greater than 3 gpm flowrate

Standards 1. BA flow controller in Manual with flow rate adjusted to exceed 3 gpm for the totalizer to register properly.

C TC

☐ ☐

- 10 If automatic control of Boric Acid flow is desired, then perform the following:
Place Boric Acid Flow controller, BAM-IFIC-0210Y, in Auto.
Adjust Boric Acid Flow controller, BAM-IFIC-0210Y, setpoint potentiometer to >3 GPM flow rate.

Conditions/Cues 1. Operator may choose to place the Boric Acid Flow Controller (BAM-IFIC-0210Y) in either Manual or Auto. If auto control is selected, then this step is critical
2. After examinee locates and verifies BA flow controller in Auto, cue examinee controller is in Auto
3. After examinee adjusts BA flow controller output to greater than 3 gpm flowrate, cue examinee controller is adjusted to greater than 3 gpm flowrate

Standards BA flow controller in Auto with flow rate setpoint potentiometer adjusted to exceed 3 gpm for the totalizer to register properly.

C TC

☐ ☐

- 11 Verify Boric Acid Makeup Control Valve, BAM-141, Intermediate or Open.

Conditions/Cues 1. After examinee locates BAM-141 indication, cue examinee valve is in Intermediate or Open

Standards 1. BAM-141 indicates Intermediate or Open

MAKEUP TO THE VCT USING ACID/WATER BATCHES (PMU pump trips - Alternate path)

C TC

12 Observe Boric Acid flow rate for proper indication.

☐ ☐

Conditions/Cues 1. After examinee locates and observe BA flowrate indication, cue examinee BA flowrate indication is 5 gpm.

Standards 2. BA flowrate indication greater than 3 gpm

C TC

13 When Boric Acid Makeup Batch Counter has counted down to desired value (0), then verify Boric Acid Makeup Control Valve, BAM-141, Closed.

☐ ☐

Conditions/Cues 1. After examinee locates and verifies BAM batch counter has counted down to desired value (0), cue examinee desired value has been reached
2. After examinee locates indication and verifies BAM-141 closes when BAM batch counter reaches desired value, cue examinee valve goes closed.

Standards 3. BAM batch counter counted down to 0 and BAM-141 closed

C TC

14 Verify Boric Acid Flow controller, BAM-IFIC-0210Y, in Manual.

☐ ☐

Conditions/Cues 1. If manual operation was selected in step 9 this step is not critical
2. After examinee locates and verifies BA flow controller in manual, cue examinee controller is in manual
3. If Auto operation was selected in step 10 then this step IS critical:
4. After examinee locates and places BA flow controller in manual, cue examinee controller is in manual

Standards BAM flow controller in manual

C TC

15 Verify both Boric Acid Flow controller, BAM-IFIC-0210Y, output and setpoint potentiometer set to zero.

☒ ☐

Conditions/Cues 1. After examinee locates and verifies BAM flow controller output and setpoint potentiometer adjusted to zero, cue examinee they are at zero.

Standards 1. BAM flow controller output and setpoint potentiometer at zero

C TC

16 Place Makeup Mode selector switch to MANUAL.

☒ ☐

Conditions/Cues 1. After examinee locates and places Makeup Mode selector switch in Manual, cue examinee switch is in Manual

Standards 1. MU mode selector switch in Manual

MAKEUP TO THE VCT USING ACID/WATER BATCHES (PMU pump trips - Alternate path)

C TC

17 Verify selected Boric Acid Makeup Pump Stops.

☐ ☐

Conditions/Cues 1. After examinee locates selected BAM pump indication and verifies pump has stopped, cue examinee pump has stopped

Standards 1. Selected BAM pump has stopped

C TC

18 Set Primary Makeup Water Batch Counter to volume of Primary Makeup water desired.

☒ ☐

Conditions/Cues 1. After examinee locates and simulates setting PMU batch counter to volume of water needed, cue examinee batch counter is properly set

Standards 1. PMU batch counter set to volume of water needed (100 Gallons - Counter is Gallons X10)

C TC

19 Place Makeup Mode selector switch to DILUTE.

☒ ☐

Conditions/Cues 1. After examinee locates and manipulates the Makeup Mode selector switch to DILUTE, cue examinee switch is properly positioned

Standards 1. MU mode selector switch in DILUTE position

C TC

20 If manual control of Primary Makeup Water flow is desired, then perform the following:
Verify Primary Makeup Water Flow controller, PMU-IFIC-0210X, in Manual.
Adjust Primary Makeup Water Flow controller, PMU-IFIC-0210X, output to >5 GPM flow rate.

☐ ☐

Conditions/Cues 1. Operator may choose to place the PMU Controller in either Manual or Auto. If manual control is selected, then this step is critical
2. After examinee locates and verifies PMU flow controller in manual, cue examinee controller is in manual
3. After examinee adjusts PMU flow controller output to greater than 5 gpm flowrate, cue examinee controller is adjusted to greater than 5 gpm flowrate

Standards 1. PMU flow controller in Manual with flow rate adjusted to exceed 5 gpm for the totalizer to register properly.

MAKEUP TO THE VCT USING ACID/WATER BATCHES (PMU pump trips - Alternate path)

C TC

- 21 If automatic control of Primary Makeup Water flow is desired, then perform the following:
Place Primary Makeup Water Flow controller, PMU-IFIC-0210X, in Auto.
Adjust Primary Makeup Water Flow controller, PMU-IFIC-0210X, setpoint potentiometer to
>5 GPM flow rate.

☐ ☐

Conditions/Cues 1. Operator may choose to place the PMU Flow Controller in either Manual or Auto. If auto control is selected, then this step is critical
2. After examinee locates and verifies PMU flow controller in Auto, cue examinee controller is in Auto
3. After examinee adjusts PMU flow controller output to greater than 5 gpm flowrate, cue examinee controller is adjusted to greater than 5 gpm flowrate

Standards 1. PMU flow controller in Auto with flow rate setpoint potentiometer adjusted to exceed 5 gpm

C TC

- 22 Verify Primary Makeup Water Control Valve, PMU-144, Intermediate or Open.

☐ ☐

Conditions/Cues 1. After examinee locates PMU-144 indication, cue examinee valve is in Intermediate or Open

Standards 1. PMU-144 indication is Intermediate or Open

C TC

- 23 Observe Primary Makeup water flow rate for proper indication. (Alternate Path)

☒ ☐

Conditions/Cues 1. After examinee locates and observes PMU flowrate indication, cue examinee PMU flowrate indication is 100 gpm
2. Cue examinee PMU flowrate suddenly drops to zero, if examinee looks at selected PMU pump C/S, cue examinee pump has stopped
3. If examinee selects opposite PMU pump, cue examinee pump has started and PMU flowrate has restored
4. **If examinee requests guidance from the CRS, Cue the examinee to perform actions needed to ensure PMU addition is per Att. 6.11**

Standards 1. Examinee recovers from PMU pump trip by starting the standby PMU pump and PMU flowrate is > 5 gpm

C TC

- 24 When Primary Makeup Water Batch Counter has counted down to desired value (0), then verify Primary Makeup Water Control Valve, PMU-144, Closed.

☐ ☐

Conditions/Cues 1. After examinee locates and verifies PMU batch counter has counted down to desired value (0), cue examinee desired value has been reached
2. After examinee locates indication and verifies PMU-144 closes when PMU batch counter reaches desired value, cue examinee valve goes closed.

Standards 1. PMU batch counter counted down to 0 and PMU-144 closed

MAKEUP TO THE VCT USING ACID/WATER BATCHES (PMU pump trips - Alternate path)

C TC

25 Verify Primary Makeup Water Flow controller, PMU-IFIC-0210X, in Manual.

☐ ☐

Conditions/Cues 1. If manual operation was selected in step 20 this step is not critical
2. After examinee locates and verifies PMU flow controller in manual, cue examinee controller is in manual
3. If Auto operation was selected in step 21 then this step IS critical:
4. After examinee locates and places PMU flow controller in manual, cue examinee controller is in manual

Standards 1. PMU flow controller in manual

C TC

26 Verify both Primary Makeup Water Flow controller, PMU-IFIC-0210X, output and setpoint potentiometer set to zero.

☒ ☐

Conditions/Cues 1. After examinee locates and verifies PMU flow controller output and setpoint potentiometer adjusted to zero, cue examinee they are at zero

Standards 1. PMU flow controller output and setpoint potentiometer set to zero

C TC

27 Place Makeup Mode selector switch to MANUAL.

☒ ☐

Conditions/Cues 1. After examinee locates and places Makeup Mode selector switch in Manual, cue examinee switch is in Manual

Standards 1. MU Mode selector switch in Manual

C TC

28 End of task.

☐ ☐

Information for Trainee

Directions to Examinee:

Initial Condition

RCS BORON CONCENTRATION IS 735 PPM
BAMT A BORON CONCENTRATION IS 5400 PPM
BAMT B BORON CONCENTRATION IS 5500 PPM
CHARGING AND LETDOWN ARE IN SERVICE

Initiating Cue

THE CRS DIRECTS YOU TO ADD 100 GALLONS OF PMU AND THE PROPER AMOUNT OF
BORIC ACID FROM BAMT 'A' TO THE VCT USING ACID/WATER BATCH ADDITION



Entergy

Job Performance Measure Examination -

15-Jan-02

Startup SUPS A

Site: W3 **Job:** NAO **System:** ID **Mode:** Norm **Number:** 2

Revision 1 11/19/2001

Approved rfletc2 12/07/2001

Estimated Time(min) 15

References OP-006-005 INVERTERS AND DISTRIBUTION 11 01

NRC KA	3.6-062-A3.03	2.3	2.3	Evaluation Methods	PERFORM
	3.6-062-K4.10	3.1	3.5		SIMULATE
	3.6-062-A2.10	3	3.3		
	3.6-062-A3.04	2.9			

Trainee:

Evaluator:

Observer:

Date:

Satisfactory:

Unsatisfactory:

Directions to 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.

Initial Condition

1. SUPS A was completely shutdown for maintenance.
2. PDP 90A is deenergized.
3. SUPS A is ready to be returned to service.

Task Standard

1. SUPS A is energized and in operation, ready to supply its loads

Tools

None

Safety Considerations

1. Electrical safety hazard

Initiating Cue

1. The NPO directs you to startup SUPS A and leave load breakers in the OPEN position

Terminating Cue

1. SUPS A energized and operating with load breakers OPEN

Performance Consequences

1. Equipment damage
2. Personnel injury

Human Interfaces

1. NPO

Skills Knowledge

None

Instructor Notes

Task Elements

- | | |
|--|---|
| | C TC |
| 0 Perform the task in accordance with OP-006-005, section 5.2. All components to be operated are located in RAB SWGR 'A' | <input type="checkbox"/> <input type="checkbox"/> |

-
- | | |
|--|---|
| | C TC |
| 1 Verify the following SUPS A panel breakers OFF:
ID-EBKR-A-2, SUPS A AC Input to Rectifier
ID-EBKR-A-3, SUPS A Battery Input
ID-EBKR-A-6, SUPS A Inverter Output
ID-EBKR-A-7, SUPS A Bypass Source AC Input | <input type="checkbox"/> <input type="checkbox"/> |

Conditions/Cues 1. After the examinee locates the individual breakers, cue examinee the breakers are off

Standards 1. Breakers verified off

-
- | | |
|--|---|
| | C TC |
| 2 Verify Manual Bypass Switch in BYPASS TO LOAD. | <input type="checkbox"/> <input type="checkbox"/> |

Conditions/Cues 1. After examinee locates manual bypass switch, cue examinee the switch is in the 'BYPASS TO LOAD' position
2. Prior to the next step, cue examinee PDP-90A is not energized from the BYPASS source

Standards 1. Examinee verifies the manual bypass switch is in 'BYPASS TO LOAD' position

-
- | | |
|---|---|
| | C TC |
| 3 If PDP-90A is not energized from the Bypass source, then:
Refer to Attachment 11.10, SUPS A Circuit Loads, and verify all SUPS A load breakers OFF.
Verify Open System Output breaker, ID-EBKR-A-4. | <input type="checkbox"/> <input type="checkbox"/> |

Conditions/Cues 1. Cue examinee that another NAO will verify all SUPS A load breakers off per ATT. 11.10
2. After examinee locates the system output breaker, cue examinee it's open

Standards 1. SUPS A load breakers verified off per ATTACHMENT 11.10
2. System output breaker verified off

C TC

☒ ☐

- 4 Verify the following SUPS A supply breakers to ON:
ID-EBKR-312A-2F, SUPS A Normal Supply
ID-EBKR-311A-3M, SUPS A Bypass Supply
ID-EBKR-A-35, SUPS A Emergency Supply (DC)

Conditions/Cues 1. When examinee locates each SUPS supply breaker, cue examinee the breaker is OFF
2. After examinee simulates repositioning breakers, cue examinee the breakers are ON

Standards 1. SUPS supply breakers verified on

C TC

☒ ☐

- 5 Press and hold Precharge pushbutton on SUPS A.
When Precharge light (Amber light) is lit, then Close Battery Input (ID-EBKR-A-3).
Release Precharge pushbutton.

Conditions/Cues 1. After examinee locates the DC INPUT METER, and the PRECHARGE PUSHBUTTON, and has simulated depressing the PRECHARGE PUSHBUTTON, cue examinee the precharge voltage is approximately 125 VDC on DC INPUT METER in and the PRECHARGE LIGHT is lit.

Standards 1. Examinee depresses and holds PRECHARGE PUSHBUTTON until PRECHARGE LIGHT is lit, verifying approximately 125 VDC on DC INPUT METER
2. Examinee closes BATTERY INPUT BREAKER (ID-EBKR-A-3), and then releases the PRECHARGE PUSHBUTTON

C TC

☒ ☐

- 6 Verify Closed the following breakers on SUPS A:
AC Input To Rectifier (ID-EBKR-A-2)
AC Input To Isolimiter (ID-EBKR-A-8)
Bypass Source AC Input (ID-EBKR-A-7)
System Output (ID-EBKR-A-4)
Inverter Output (ID-EBKR-A-6)

Conditions/Cues 1. After examinee locates and simulates closing the breakers, cue the examinee breakers are closed

Standards 2. Examinee verifies breakers are closed

C TC

- 7 If Bypass Source Supplying Load light is Extinguished and Inverter Supplying Load is Illuminated (approximately 30 seconds), then:
Verify unit is In Sync
Transfer Manual Bypass Switch to NORMAL OPERATION.

☒ ☐

Conditions/Cues 1. After examinee locates 'BYPASS SOURCE SUPPLYING LOAD' LIGHT, cue examinee it's not lit.
2. After examinee locates 'INVERTER SUPPLYING LOAD' LIGHT, cue examinee it's lit
3. After examinee locates 'IN SYNC' LIGHT, cue examinee it's lit.
4. After examinee locates and transfers the 'MANUAL BYPASS' SWITCH to NORMAL OPERATION, cue examinee it's in the 'NORMAL OPERATION' position

Standards 1. 'BYPASS SOURCE SUPPLYING LOAD LIGHT' is not lit verified
2. 'INVERTER SUPPLYING LOAD' LIGHT is lit verified
3. 'IN SYNC' LIGHT is lit verified
4. Examinee recognizes that steps 5.2.8 through 5.2.8.2 are not applicable

C TC

- 8 Close, DC Input to AN1 and AN2 breaker, ID-EBKR-A-5.

☒ ☐

Conditions/Cues 1. After examinee locates and simulates closing the breaker, cue examinee the breaker is closed

Standards 1. Examinee closes breaker

C TC

- 9 Perform Attachment 11.9, SUPS A Breaker Lineup.

☐ ☐

Conditions/Cues 1. After examinee locates and verifies breaker positions per ATTACHMENT 11.9, cue examinee all breakers are properly positioned.

Standards 1. All breaker positions verified per ATTACHMENT 11.9

C TC

- 10 Refer to Attachment 11.10, SUPS A Circuit Loads, and place required SUPS A load breakers to ON at SM/CRS discretion.

☐ ☐

Conditions/Cues 1. Cue the examinee the SM has directed another NAO to perform ATTACHMENT 11.10

Standards 1. Examinee verifies ATTACHMENT 11.10 has been performed by another NAO

<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------

12 End of task

C	TC
<input type="checkbox"/>	<input type="checkbox"/>

Information for Trainee

Directions to Examinee:

Initial Condition

1. SUPS was completely shutdown for maintenance.
2. PDP 90A is deenergized.
3. SUPS A is ready to be returned to service.

Initiating Cue

1. The NPO directs you to startup SUPS A and leave load breakers in the OPEN position

Job Performance Measure Examination -

15-Jan-02

Operate The Atmospheric Dump Valve Locally

Site: W3 **Job:** NAO **System:** MS **Mode:** OffNorm **Number:** 8

Revision 5 08/03/2000

Approved rfletc2 12/07/2001

Estimated Time(min)	15
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Alternate Path	Yes
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References	OP-901-502	Att. 8	EVACUATION OF CONTROL ROOM AND SUBSEQUENT PLANT SHUTDOWN	06	02
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NRC KA	2-1-20	4.3	4.2	Evaluation Methods	PERFORM
	3.4-039-A4.07	2.8*	2.9		SIMULATE
	4.2-A68-AA1.0	4.3	4.5		
	4.2-A68-AK3.06	3.9	4.3		

Trainee:

Evaluator:

Observer:

Date:

Satisfactory:

Unsatisfactory:

Directions to 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.

Initial Condition

1. A fire has occurred in CP-2.
2. Control room evacuation has occurred and controls have been transferred to LCP-43.

Task Standard

1. Atmospheric Dump Valve MS-116A is in local control

Tools

NONE

Safety Considerations

NONE

Initiating Cue

You have been ordered by the PNPO to take local control of Atmospheric Dump Valve MS-116A and open it to 50%.

Terminating Cue

1. MS-116A is open to 50%.

Performance Consequences

1. Equipment damage
2. Overheating or overcooling the RCS
3. Cooldown rate in excess of Technical Specifications

Human Interfaces

1. PNPO

Skills Knowledge

None

Instructor Notes

Task Elements

- | | |
|---|---|
| | C TC |
| 0 Perform the task in accordance with referenced procedure OP-901-502, Attachment 8. All components are located in West MSIV area +46 RAB in the vicinity of the MSIV skid. | <input type="checkbox"/> <input type="checkbox"/> |
-

- | | |
|---|--|
| | C TC |
| 1 Note the pressure at the outlet to the transducer | <input checked="" type="checkbox"/> <input type="checkbox"/> |

Conditions/Cues 1. After the examinee locates the pressure gauge, cue the examinee the gauge reads 5 psig

Standards 1. The proper pressure gauge is located and the reading is noted

- | | |
|---|--|
| | C TC |
| 2 Adjust the pressure at the outlet of the air regulator on the front of the panel to the pressure noted in step 1. | <input checked="" type="checkbox"/> <input type="checkbox"/> |

Conditions/Cues 1. After the examinee simulates the method (turn the handle on top of the regulator counter-clockwise) for reducing pressure at the outlet of the regulator: pressure at the outlet of the regulator is 5 psig

Standards 1. Air pressure at the outlet of the air regulator adjusted to 5 psig

- | | |
|---|--|
| | C TC |
| 3 Turn the pneumatic permissive valve above the transducer counter-clockwise from AUTO to MANUAL. | <input checked="" type="checkbox"/> <input type="checkbox"/> |

Conditions/Cues 1. After the examinee simulates the method for manipulating the pneumatic permissive valve, cue the examinee the valve is in the MANUAL position

Standards 1. The pneumatic permissive valve is in the MANUAL position

- | | |
|---|--|
| | C TC |
| 4 Turn the pneumatic permissive valve above the air regulator on the front of the panel counter-clockwise from AUTO to MANUAL | <input checked="" type="checkbox"/> <input type="checkbox"/> |

Conditions/Cues 1. After the examinee simulates the method for manipulating the pneumatic permissive valve, cue the examinee the valve is in the MANUAL position

Standards 1. Pneumatic permissve valve is in the MANUAL position

Operate The Atmospheric Dump Valve Locally

C TC

- 5 Adjust the air regulator on the front of the panel to obtain desired valve position.

☐ ☐

Conditions/Cues 1. After the examinee simulates the method (turn the handle on top of the regulator clock-wise) for raising pressure at the outlet of the regulator and locates the valve position indicator for the atmospheric dump valve, cue examinee the atmospheric dump valve DID NOT MOVE and the NPO at LCP-43 orders you to attempt to position the ADV using the local handwheel.

Standards 1. Examinee attempts to raise the air pressure at the outlet of the air regulator by turning the handle on top of the air regulator clockwise and observes the atmospheric dump valve position (examinee may approach ADV to determine valve position)

C TC

- 6 Unscrew clevis from manual override shaft.

☒ ☐

Conditions/Cues 1. After examinee locates and simulates unscrewing clevis from manual override shaft, cue examinee clevis has been unscrewed from manual override shaft

Standards 1. Clevis is unscrewed from manual override shaft

C TC

- 7 Turn handwheel to expose actuator shaft above manual override shaft.

☒ ☐

Conditions/Cues 1. After examinee locates and simulates turning handwheel to expose actuator shaft, cue examinee actuator shaft is exposed

Standards 1. Actuator shaft is exposed

C TC

- 8 Slide clevis onto actuator shaft.

☒ ☐

Conditions/Cues 1. After examinee locates and simulates sliding clevis onto actuator shaft, cue examinee clevis has been slid onto actuator shaft

Standards 1. Clevis is in position on actuator shaft

C TC

- 9 Place bypass valve (on positioner) to HAND position.

☒ ☐

Conditions/Cues 1. After examinee locates and simulates manipulating bypass valve (on positioner) to HAND position (**Parallel to air line**, Note-valve is not labeled), cue examinee bypass valve is in HAND position

Standards 2. Bypass valve (on positioner) is in HAND position (Parallel to air line).

Operate The Atmospheric Dump Valve Locally

C TC

10 Turn handwheel to position valve plug as desired.

☒ ☐

Conditions/Cues 1. Examinee locates and simulates turning handwheel to the open direction, cue
examinee ADV is at 50%

Standards 1. ADV is open to 50%

C TC

11 End of task

☐ ☐

Information for Trainee

Directions to Examinee:

Initial Condition

1. A fire has occurred in CP-2.
2. Control room evacuation has occurred and controls have been transferred to LCP-43.

Initiating Cue

You have been ordered by the PNPO to take local control of Atmospheric Dump Valve MS-116A and open it to 50%.

Job Performance Measure Examination -

Restore Power to Dry Cooling Tower Sump Pumps During a Control Room Evacuation and LOOP

Site: W3 **Job:** NAO **System:** SP **Mode:** OffNorm **Number:** 1

Revision 1 11/19/2001

Approved rfletc2 12/07/2001

Estimated Time(min) 15

References OP-901-502 EVACUATION OF CONTROL ROOM AND 06 02
SUBSEQUENT PLANT SHUTDOWN

NRC KA	2-4-11	3.4	3.6	Evaluation Methods	PERFORM
	2-4-34	3.8	3.6		SIMULATE
	4.2-A68-AK3.18	4.2	4.5		

Trainee:

Evaluator:

Observer:

Date:

Satisfactory:

Unsatisfactory:

Directions to 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.

Initial Condition

1. A loss of offsite power concurrent with control room evacuation. Emergency Diesel Generator B is supplying power to the B Safety busses.
2. Emergency Diesel Generator A failed to start.

Task Standard

Power restored to B train powered Dry Cooling Tower Sump Pumps.

Tools**Safety Considerations****Initiating Cue**

The NPO orders you to restore power to the B train powered Dry Cooling Tower Sump Pumps in accordance with OP-901-502, Subsection E1, step 16.

Terminating Cue

Power has been restored to the B train powered Dry Cooling Power Sump Pumps.

Performance Consequences

Possible flooding of DCT area

Human Interfaces**Skills Knowledge****Instructor Notes**

Task Elements

- | | |
|---|---|
| | C TC |
| 0 Perform the task in accordance with OP-901-502, E2, step 16. All steps performed in the +1 FHB SWGR room. | <input type="checkbox"/> <input type="checkbox"/> |

-
- | | |
|--|--|
| | C TC |
| 1 IF Emergency Diesel Generator B is supplying power to Train B Safety busses, THEN perform the following:
Place the following switches to bypass: (Switches located on respective pump breaker cubicles at MCC 314B)
(West) DCT #1 Sump Pump B Radiation Monitor bypass switch
(East) DCT #2 Sump Pump B Radiation Monitor bypass switch | <input checked="" type="checkbox"/> <input type="checkbox"/> |

Conditions/Cues

1. When examinee locates and simulates placing the radiation monitor bypass switches to Bypass , cue examinee the switches are in Bypass

- Standards** 1. DCT 1 and 2 sump pump B radiation monitor bypass switches placed to the Bypass position

-
- | | |
|--|---|
| | C TC |
| 2 Locally Open ALL non-safety bus load breakers on MCC-314B. | <input type="checkbox"/> <input type="checkbox"/> |

- Conditions/Cues** 1. When examinee locates and simulates opening all non-safety-related bus load breakers on MCC-314B, cue examinee the breakers are open (all breakers are to the right side of the Safety to Non-Safety Tie Bkr)

- Standards** 1. All non-safety-related bus load breakers on MCC-314B are open

-
- | | |
|--|--|
| | C TC |
| 3 Locally Close SSDEBKR314B-2M, MCC 314B Safety to Non-Safety Tie. | <input checked="" type="checkbox"/> <input type="checkbox"/> |

- Conditions/Cues** 1. When examinee locates and simulates closing the safety to non-safety tie breaker, cue the examinee the breaker is closed

- Standards** 2. Safety to non-safety tie breaker is closed

-
- | | |
|---|--|
| | C TC |
| 4 Locally Close SP EBKR314B-4F, West Dry Cooling Tower Sump Pump B. | <input checked="" type="checkbox"/> <input type="checkbox"/> |

- Conditions/Cues** 1. When examinee locates and simulates closing the West DCT sump pump breaker, cue examinee the breaker is closed

- Standards** 1. West DCT sump pump breaker is closed

C TC

5 Locally Close SP EBKR314B-5F, East Dry Cooling Tower Sump Pump B.

☒ ☐

Conditions/Cues 1. When examinee locates and simulates closing East DCT sump pump breaker,
cue examinee breaker is closed

Standards 1. East DCT sump pump breaker is closed

C TC

6 End of task

☐ ☐

Information for Trainee

Directions to Examinee:

Initial Condition

1. A loss of offsite power concurrent with control room evacuation. Emergency Diesel Generator B is supplying power to the B Safety busses.
2. Emergency Diesel Generator A failed to start.

Initiating Cue

The NPO orders you to restore power to the B train powered Dry Cooling Tower Sump Pumps in accordance with OP-901-502, Subsection E1, step 16.



Entergy

Job Performance Measure Examination -

15-Jan-02

Restore Normal Power to a 4.16 KV Safety Bus and Secure the Emergency Diesel Generator

Site: W3 **Job:** RO **System:** EDG **Mode:** Emerg **Number:** 100

Revision 1 11/20/2001

Approved rfiletc2 12/07/2001

Estimated Time(min) 15

Alternate Path Yes

References OP-902-009 Att. 12 Emergency Operating Procedure Standard 0.1 00
Appendices

NRC KA				Evaluation Methods	
3.6-064-A2.03	3.1	3.1		SIMULATE	
3.6-064-A2.04	2.7	3		SIMULATOR	
3.6-064-A2.01	3.1*	3.3		PERFORM	
3.6-064-K3.02	4.2	4.4			

Trainee:

Evaluator:

Observer:

Date:

Satisfactory:

Unsatisfactory:

Directions to 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.

Initial Condition

1. The plant is in MODE 3 following a Rx trip.
2. 4.16 KV non-safety bus A2 is energized from Offsite Power.
3. 4.16 KV safety bus A3 is energized from EDG A.

Task Standard

1. 4.16 KV safety bus A3 is being powered from non-safety 4.16 KV bus A2.
2. EDG 'A' is secured

Tools

1. Synchronizer Key

Safety Considerations**Initiating Cue**

1. CRS directs you to transfer 4.16 KV safety bus A3 from EDG to offsite power in accordance with OP-902-009 Att. 12C.

Terminating Cue

1. EDG 'A' is secured

Performance Consequences

1. Potential loss of ESF power from 4.16 KV safety bus A3
2. Possible damage to EDG A due to loss of lube oil

Human Interfaces

SM/CRS

Skills Knowledge**Instructor Notes**

Task Elements

- | | |
|---|---|
| | C TC |
| 0 Perform task in accordance with OP-902-009, Attachment 12-C, step 1. All steps performed at CP-1. | <input type="checkbox"/> <input type="checkbox"/> |

Conditions/Cues Examiner to provide cues in main control room. If performed in simulator, then simulator will provide cues.

-
- | | |
|---|---|
| | C TC |
| 1 Verify bus A3S to A2 tie breaker OPEN | <input type="checkbox"/> <input type="checkbox"/> |

Conditions/Cues 1. After examinee locates tie breaker control switch, cue examinee tie breaker is open

Standards 1. A3S to A2 bus tie breaker open

-
- | | |
|-----------------------------------|--|
| | C TC |
| 2 Close bus A2 to A3S tie breaker | <input checked="" type="checkbox"/> <input type="checkbox"/> |

Conditions/Cues 1. After examinee locates and simulates closing tie breaker, cue examinee tie breaker is open

Standards 1. A2 to A3S bus tie breaker closed

-
- | | |
|---|--|
| | C TC |
| 3 Place the synchronizer keyswitch in 'BUS TIE' | <input checked="" type="checkbox"/> <input type="checkbox"/> |

Conditions/Cues 1. After examinee locates synchronizer key and synchronizer keyswitch, and simulates placing the keyswitch in "BUS TIE", cue the examinee the keyswitch is in the 'BUS TIE' position.

Standards 1. Synchronizer keyswitch in the 'BUS TIE' position

-
- | | |
|--|--|
| | C TC |
| 4 Adjust EDG A voltage to equal system voltage | <input checked="" type="checkbox"/> <input type="checkbox"/> |

Conditions/Cues 1. After examinee locates voltage adjuster and simulates adjusting EDG A voltage ~ equal to system voltage, cue examinee EDG A voltage equal to system voltage.

Standards 1. EDG A voltage ~ equal to system voltage

C TC

- 5 Adjust engine speed until synchroscope rotates slowly clockwise.

☒ ☐

Conditions/Cues 1. After examinee locates EDG A speed adjuster and simulates adjusting engine speed until synchroscope rotates slowly clockwise, cue examinee the synchroscope is rotating slowly clockwise.

Standards 1. Synchroscope rotating slowly in the clockwise direction.

C TC

- 6 Close bus A3S to A2 tie breaker at 5 minutes to 12 position on the synchroscope.

☒ ☐

Conditions/Cues 1. After examinee locates and simulates closing the A3S to A2 tie breaker (just as the synchroscope shows 5 minutes to 12 position), cue the examinee the tie breaker is closed.

Standards 1. Examinee verifies synchroscope position at 5 minutes to 12 prior to closing tie breaker.
2. Bus A3S to A2 tie breaker closed

C TC

- 7 Place synchronizer keyswitch in OFF.

☒ ☐

Conditions/Cues 1. After examinee locates and simulates placing the synchronizer keyswitch in OFF, cue the examinee the switch is OFF

Standards 1. Synchronizer keyswitch in OFF

C TC

- 8 Reduce load on EDG A to 0.1 MW and 0.1 MVARs.

☐ ☐

Conditions/Cues 1. After examinee locates the EDG A speed control and simulates reducing MW, cue examinee the NAO reports a large oil leak on the engine driven lube oil pump discharge and crankcase oil level is dropping.

Standards 1. Examinee locates speed control switch and starts to reduce load

C TC

- 9 Examinee depresses EDG A trip pushbutton on CP-1 or orders NAO to pull overspeed trip plunger locally.

☒ ☐

Conditions/Cues 1. After examinee locates and simulates depressing the EDG A trip pushbutton, cue the examinee the EDG A is tripped OR
2. If examinee gives the NAO the order to pull overspeed, cue the examinee that EDG A overspeed plunger is pulled and the EDG A is stopped.

Standards 1. EDG A is secured

Restore Normal Power to a 4.16 KV Safety Bus and Secure the Emergency Diesel Generator

11 End of Task

C **TC**
☐ ☐

Information for Trainee

Directions to Examinee:

Initial Condition

1. The plant is in MODE 3 following a Rx trip.
2. 4.16 KV non-safety bus A2 is energized from Offsite Power.
3. 4.16 KV safety bus A3 is energized from EDG A.

Initiating Cue

1. CRS directs you to transfer 4.16 KV safety bus A3 from EDG to offsite power in accordance with OP-902-009 Att. 12C.

Return Emergency Feedwater to normal after EFAS initiation

Site: W3 **Job:** RO **System:** EFW **Mode:** Emerg **Number:** 12

Revision 4 11/21/2001

Approved rfletc2 12/07/2001

Estimated Time(min)	20
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References	OP-902-009	App. 5-C	Emergency Operating Procedure Standard Appendices	0.1	00
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NRC KA	4.2-A54-AK3.04	4.4	4.6	Evaluation Methods	SIMULATE SIMULATOR
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Trainee:

Evaluator:

Observer:

Date:

Satisfactory:

Unsatisfactory:

Directions to 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.

Initial Condition

1. A plant trip and an Emergency Feedwater Actuation Signal 1 and 2 has occurred
2. The auxiliary feedwater pump has been started and is now maintaining steam generator levels 50% to 70 % NR
3. The EFW system is no longer needed

Task Standard

1. EFW System has been returned to standby

Tools

None

Safety Considerations

None

Initiating Cue

1. You are ordered by the CRS to return the Emergency Feedwater System to normal in accordance with OP-902-009 Standard Appendices 5 Attachment 5-C

Terminating Cue

1. The EFW System has been reset and placed in automatic standby mode

Performance Consequences

1. Possible Equipment Damage

Human Interfaces

1. SM/CRS

Skills Knowledge

None

Instructor Notes

Task Elements

- | | | |
|---|--------------------------|--------------------------|
| | C | TC |
| 0 Perform task in accordance with OP-902-009, Attachment 5-C. All steps performed in main control room or simulator. All components to be manipulated are located on CP-8 unless otherwise noted. | <input type="checkbox"/> | <input type="checkbox"/> |

-
- | | | |
|--|--------------------------|--------------------------|
| | C | TC |
| 1 Verify steam generator level is being maintained or restored to 50% to 70% NR using MFW. | <input type="checkbox"/> | <input type="checkbox"/> |

Conditions/Cues 1. When examinee has located SG NR level indicators, cue examinee level is 60% NR

Standards 1. Examinee has verified SG level to be 50% to 70% NR or restoring

-
- | | | |
|---|--------------------------|--------------------------|
| | C | TC |
| 2 Verify EFAS-1 manual actuation switches in NORM position (CP-7 and CP-8). | <input type="checkbox"/> | <input type="checkbox"/> |

Conditions/Cues 1. After examinee locates EFAS-1 manual actuation switches, cue examinee switches are in NORM position
(Step is critical if EFAS-1 actuation switches are found in the ACT position)

Standards 1. EFAS-1 manual actuation switches verified in NORM position (CP-7 and CP-8)

-
- | | | |
|---|--------------------------|--------------------------|
| | C | TC |
| 3 Verify EFAS-2 manual actuation switches in NORM position (CP-7 and CP-8). | <input type="checkbox"/> | <input type="checkbox"/> |

Conditions/Cues 1. After examinee locates EFAS-2 manual actuation switches, cue examinee switches are in NORM position
(Step is critical if EFAS-2 actuation switches are found in the ACT position)

Standards 1. EFAS-2 manual actuation switches verified in NORM position (CP-7 and CP-8)

-
- | | | |
|--|-------------------------------------|--------------------------|
| | C | TC |
| 4 Press both EFAS-1 reset pushbuttons (CP-33). | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Conditions/Cues 1. After examinee locates and simulates pressing both EFAS-1 reset pushbuttons on CP-33, cue examinee both pushbuttons have been depressed.
2. When examinee locates initiation lights for EFAS-1 at CP-10, cue examinee lights are lit
3. When examinee locates EFAS-1 alarms on CP-2, cue examinee alrms are clear

Standards 1. EFAS-1 signal has been reset

C TC

- 5 Press both EFAS-2 reset pushbuttons (CP-33).

☒ ☐

Conditions/Cues 1. After examinee locates and simulates pressing both EFAS-2 reset pushbuttons on CP-33, cue examinee both pushbuttons have been depressed.
2. When examinee locates initiation lights for EFAS-2 at CP-10, cue examinee lights are lit
3. When examinee locates EFAS-2 alarms on CP-2, cue examinee alrms are clear

Standards 1. EFAS-2 signal has been reset

C TC

- 6 Verify EFW pump A is secured and place the control switch to normal (mid-position).

☒ ☐

Conditions/Cues 1. When examinee has located EFW pump A control switch and simulated securing the pump, cue examinee pump is secured
2. When examinee has placed the control switch to mid-position, cue examinee control switch is in mid-position
3. When examinee has located the EFW pump A UNAVAILABLE alarm on CP-8, cue examinee the alarm is clear (not critical)

Standards 1. EFW pump A has been verified secure and control switch is in mid-position

C TC

- 7 Verify EFW pump B is secured and place the control switch to normal (mid-position).

☒ ☐

Conditions/Cues 1. When examinee has located EFW pump B control switch and simulated securing the pump, cue examinee pump is secured
2. When examinee has placed the control switch to mid-position, cue examinee control switch is in mid-position
3. When examinee has located the EFW pump B UNAVAILABLE alarm on CP-8, cue examinee the alarm is clear (not critical)

Standards 1. EFW pump B has been verified secure and control switch is in mid-position

C TC

- 8 Verify MS-401A, EFW pump AB TURB STM SUPPLY SG 1 is closed.

☒ ☐

Conditions/Cues 1. After examinee locates the control for MS-401A and manipulates it to the closed position, cue examinee the valve is closed

Standards 1. MS-401A, EFW pump AB TURB STM SUPPLY SG 1 is closed

C TC

- 9 Verify MS-401B, EFW pump AB TURB STM SUPPLY SG 2 is closed.

☒ ☐

Conditions/Cues 1. After examinee locates the control for MS-401B and manipulates it to the closed position, cue examinee the valve is closed

Standards 1. MS-401B, EFW pump AB TURB STM SUPPLY SG 2 is closed

C TC

- 10 Verify Emergency Feedwater flow control valves are closed:

☐ ☐

EFW 223A, SG1 Backup
EFW 224A, SG1 Primary
EFW 223B, SG2 Backup
EFW 224B, SG2 Primary

Conditions/Cues 1. After examinee verifies Emergency Feedwater flow control valves closed, cue examinee the valves are closed

Standards 1. Emergency Feedwater flow control valves are closed

C TC

- 11 Place Emergency Feedwater flow control valves in AUTO:

☒ ☐

EFW 223A, SG1 Backup
EFW 224A, SG1 Primary
EFW 223B, SG2 Backup
EFW 224B, SG2 Primary

Conditions/Cues 1. After examinee locates controls and simulates placing Emergency Feedwater flow control valves in AUTO, cue examinee valves are in AUTO

Standards 1. Emergency Feedwater flow control valves in AUTO

C TC

- 12 Close Emergency Feedwater isolation valves:

☒ ☐

EFW 229A, SG1 Backup
EFW 228A, SG1 Primary
EFW 229B, SG2 Backup
EFW 228B, SG2 Primary

Conditions/Cues 1. After examinee locates control for Emergency Feedwater isolation valves and manipulates to the closed position, cue examinee the valves are closed

Standards 1. Emergency Feedwater isolation valves are closed

C TC

- 13 End of task

☐ ☐

Information for Trainee

Directions to Examinee:

Initial Condition

1. A plant trip and an Emergency Feedwater Actuation Signal 1 and 2 has occurred
2. The auxiliary feedwater pump has been started and is now maintaining steam generator levels 50% to 70 % NR
3. The EFW system is no longer needed

Initiating Cue

1. You are ordered by the CRS to return the Emergency Feedwater System to normal in accordance with OP-902-009 Standard Appendices 5 Attachment 5-C



Entergy

Job Performance Measure Examination -

15-Jan-02

Shutown RCP (Reverse Rotation alternate path)

Site: W3 Job: RO System: RCP Mode: OffNorm Number: 11

Revision 1 11/26/2001

Approved rfletc2 12/07/2001

Estimated Time(min) 15

Alternate Path Yes

References	OP-001-002	REACTOR COOLANT PUMP OPERATION	11	05
	OP-901-130	REACTOR COOLANT PUMP MALFUNCTION	02	02

NRC KA	3.4-003-K4.05	2.3	2.7*	Evaluation Methods	DISCUSS
	3.4-003-K6.08	2.1	2.4		PERFORM
	3.4-003-A2.02	3.7	3.9		SIMULATE
					SIMULATOR

Trainee:

Evaluator:

Observer:

Date:

Satisfactory:

Unsatisfactory:

Directions to 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.

Initial Condition

1. Plant is shutdown following a reactor trip and is preparing to perform a cooldown to mode 5.

Task Standard

All RCPs secured

Tools

NONE

Safety Considerations

NONE

Initiating Cue

CRS directs you to secure RCP 2B in preparation for plant cooldown.

Terminating Cue

All RCPs secured

Performance Consequences

Damage to RCP

Human Interfaces

CRS

Skills Knowledge

NONE

Instructor Notes

Task Elements

- | | |
|--|---|
| | C TC |
| 0 Perform all steps in accordance with OP-001-002, step 6.2 (Stopping a Reactor Coolant Pump) and OP-901-130, section E5 (Reactor Coolant Pump Malfunction). All steps are performed at CP-2. An NAO is simulated as stationed in containment to provide local RCP cues). If performed in the Simulator, cues are provided by the Simulator except for cue from NAO. | <input type="checkbox"/> <input type="checkbox"/> |

-
- | | |
|--|---|
| | C TC |
| 1 If the RCP being secured is the last operating RCP, then verify RCS Cold Leg Temperature greater than or equal to 160 degrees F. | <input type="checkbox"/> <input type="checkbox"/> |

Conditions/Cues 1. After examinee locates RCS Cold Leg temperature indication, cue examinee that RCS cold leg temp. is greater than 160 degrees F

Standards 1. RCS cold leg temperature greater than or equal to 160 degrees F verified.

-
- | | |
|--|--|
| | C TC |
| 2 Start RCP Oil Lift Pump A or B for RCP to be secured by placing associated control switch to On. | <input checked="" type="checkbox"/> <input type="checkbox"/> |

Conditions/Cues 1. After examinee locates associated C/S for RCP lift oil pump and turns C/S to ON, cue examinee RCP lift oil pump is running.

Standards 1. Lift Oil pump for RCP to be stopped is running

-
- | | |
|--|---|
| | C TC |
| 3 Verify control switch for the RCP Oil Lift Pump not started in Auto. | <input type="checkbox"/> <input type="checkbox"/> |

Conditions/Cues 1. After examinee locates the associated RCP oil lift pump C/S for the pump NOT STARTED, cue examinee the pump NOT STARTED is in AUTO

Standards 2. A or B RCP oil lift pump (the pump not selected for start) C/S in AUTO

-
- | | |
|--|--|
| | C TC |
| 4 Stop desired RCP by placing associated control switch at CP-2 to Stop. | <input checked="" type="checkbox"/> <input type="checkbox"/> |

Conditions/Cues 1. After examinee locates and manipulates RCS C/S to STOP, cue examinee selected RCP C/S lights indicate RCP is off
2. If examinee checks lift oil pump status, cue examinee both lift oil pumps are running

Standards 1. RCP indicating lights indicate RCP is off

C TC

- 5 When RCP speed indicates rotor is at rest as indicated by PMC PID, (PIDs listed on Att. 11.2), or with SM/CRS authorization, then secure operating RCP Oil Lift Pumps by placing their control switches to Off.

☒ ☐

Conditions/Cues 1. After examinee locates RCP speed indication, cue examinee NAO in containment reports a loud and continuous noise has developed within the RCP that was just stopped, and it appears to be rotating in the reverse direction.
2. If the examinee reports the need to go to OP-901-130 to the CRS, cue the examinee that the CRS orders the examinee to perform the required steps of OP-901-130 while the CRS continues to address the reactor

Standards 1. Examinee recognizes requirement to transition to RCP malfunction procedure OP-901-130 section E5 due to RCP reverse rotation

C TC

- 6 IF conditions permit, THEN verify Reactor Coolant Pump reverse rotation by local observation.

☐ ☐

Conditions/Cues 1. If examinee communicates with NAO to verify local indications of RCP reverse rotation, cue examinee local reverse rotation indications are verified.

Standards 1. Reverse rotation indications verified

C TC

- 7 Start an oil lift pump on affected RCP.

☐ ☐

Conditions/Cues 1. If no RCP oil lift pump is operating for affected RCP, after examinee locates and manipulates to ON one of the associated oil lift pumps, cue examinee oil lift pump is running
2. Step is critical if RCP oil lift pump is not already running for affected RCP

Standards 1. Oil lift pump for affected RCP is running

C TC

- 8 Remove ALL Reactor Coolant Pumps from service.

☒ ☐

Conditions/Cues 1. After examinee locates the C/S for an RCP oil lift pump for each of the operating RCPs and manipulates the C/S to ON, cue examinee that the selected oil lift pump for each of the operating RCPs is on
2. After examinee locates and manipulates the C/S for each of the operating RCPs, cue the examinee all RCPs are off.

Standards 1. A lift oil pump for each RCP is running (**This is not critical**)
2. All RCPs are secured

Shutown RCP (Reverse Rotation alternate path)

9 End of task.

C **TC**
☐ ☐

Information for Trainee

Directions to Examinee:

Initial Condition

1. Plant is shutdown following a reactor trip and is preparing to perform a cooldown to mode 5.

Initiating Cue

CRS directs you to secure RCP 2B in preparation for plant cooldown.



Entergy

Job Performance Measure Examination -

15-Jan-02

ALIGN A LPSI PUMP TO REPLACE A CS PUMP

Site: W3 **Job:** RO **System:** SI **Mode:** Emerg **Number:** 1

Revision 2 08/03/2000

Approved rfletc2 12/07/2001

Estimated Time(min) 10

References	OP-902-008	CTPC-CA	SAFETY FUNCTION RECOVERY	12	00
	OP-902-009	APP. 29	Emergency Operating Procedure Standard Appendices	0.1	00

NRC KA	4.4-E9-EA1.1	4.2	4	Evaluation Methods	DISCUSS
					SIMULATE
					SIMULATOR

Trainee:

Evaluator:

Observer:

Date:

Satisfactory:

Unsatisfactory:

Directions to 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.

Initial Condition

1. AN ESD AND A SGTR HAVE OCCURRED ON SG 1.
2. CONTAINMENT PRESSURE IS 40 PSIA AND RISING RAPIDLY.
3. NEITHER CS PUMP IS AVAILABLE.
4. ALL ESFAS ACTUATIONS HAVE OCCURRED AS REQUIRED. ASSUME ALL COMPONENTS ACTUATED PER DESIGN UNLESS OTHERWISE STATED.
5. OP-902-008, SAFETY FUNCTION RECOVERY PROCEDURE HAS BEEN IMPLEMENTED.
6. THE CRS HAS IMPLEMENTED CONTAINMENT TEMPERATURE AND PRESSURE CONTROL CONTINUING ACTIONS AND HAS DECIDED TO ALIGN LPSI PUMP A TO REPLACE CS PUMP A.
7. THE TSC CONCURS WITH THE DECISION.

Task Standard

ONE LPSI PUMP IS ALIGNED TO CS WITH ACCEPTABLE FLOW TO CONTAINMENT.

Tools

1. LOCKED VALVE KEYS

Safety Considerations

NONE

Initiating Cue

THE CRS DIRECTS YOU THE SNPO TO ALIGN LPSI PUMP A TO REPLACE CS PUMP A IN ACCORDANCE WITH OP-902-009 STANDARD APPENDICES 29.

Terminating Cue

SPRAY FLOW IS ESTABLISHED TO CONTAINMENT USING THE SELECTED LPSI PUMP.

Performance Consequences

1. LOSS OF CONTAINMENT INTEGRITY
2. POSSIBLE OFFSITE DOSE
3. DAMAGE TO EQUIPMENT

Human Interfaces

CRS

Skills Knowledge

NONE

Instructor Notes

ALIGN A LPSI PUMP TO REPLACE A CS PUMP

Task Elements

- | | |
|---|---|
| | C TC |
| 0 Perform the task in accordance with referenced procedure, OP-902-009, Appendix 29. All components operated are located on CP-8. | <input type="checkbox"/> <input type="checkbox"/> |
-

- | | |
|---|---|
| | C TC |
| 1 VERIFY LPSI PUMP A CONTROL SWITCH IN OFF. | <input type="checkbox"/> <input type="checkbox"/> |

Conditions/Cues 1. WHEN THE OPERATOR LOCATES THE C/S FOR LPSI PUMP A AND DEMONSTRATES THE INTENDED ACTION, CUE THE OPERATOR THAT THE SWITCH IS IN OFF.

Standards 1. THE OPERATOR LOCATES THE LPSI PUMP A C/S ON CP-8.
2. THE OPERATOR ENSURES THAT THE C/S IS IN THE OFF POSITION.

- | | |
|--|---|
| | C TC |
| 2 VERIFY CONTAINMENT SPRAY PUMP A CONTROL SWITCH IN OFF. | <input type="checkbox"/> <input type="checkbox"/> |

Conditions/Cues 1. WHEN THE OPERATOR LOCATES THE C/S FOR CS PUMP A AND DEMONSTRATES THE INTENDED ACTION, CUE THE OPERATOR THAT THE C/S IS IN OFF.

Standards 1. THE OPERATOR LOCATES CS PUMP A C/S ON CP-8.
2. THE OPERATOR ENSURES THAT THE C/S IS IN THE OFF POSITION.

- | | |
|---|--|
| | C TC |
| 3 PLACE SI-129A, LPSI FLOW CONTROL VALVE TO AUTO. [KEY 137] | <input checked="" type="checkbox"/> <input type="checkbox"/> |

Conditions/Cues 1. WHEN THE OPERATOR LOCATES THE C/S FOR SI 129A AND DEMONSTRATES THE INTENDED ACTION, CUE THE OPERATOR THAT THE C/S WAS PLACED IN THE AUTO POSITION AND SPRING RETURNED TO THE MID POSITION.

Standards 1. THE OPERATOR OBTAINS KEY FOR SI-129A FROM KEY LOCKER ON SIDE OF NPO DESK.
2. THE OPERATOR LOCATES THE C/S FOR SI-129A ON CP-8.
3. THE OPERATOR INSERTS THE KEY, MOMENTARILY PLACES THE C/S IN THE AUTO POSITION, THEN RELEASES THE C/S TO THE MID POSITION.

ALIGN A LPSI PUMP TO REPLACE A CS PUMP

C TC

- 4 PLACE SI-IFIC-0307 LPSI FLOW CONTROLLER HEADER 2A/2B IN MANUAL.

☒ ☐

Conditions/Cues 1. WHEN THE OPERATOR LOCATES THE FLOW CONTROLLER ON CP-8 AND DEMONSTRATES PROCESS FOR PLACING THE CONTROLLER IN MANUAL, CUE THE OPERATOR THAT THE CONTROLLER IS IN MANUAL AND PROCESS OUTPUT METER READS 100%.

Standards 1. THE OPERATOR LOCATES SI-IFIC-0307 ON CP-8.
2. THE OPERATOR DEPRESSES THE MANUAL PUSHBUTTON ON THE CONTROLLER AND VERIFIES THE RED LIGHT ILLUMINATES.

C TC

- 5 ADJUST SI-IFIC-0307 LPSI FLOW CONTROLLER HEADER 2A/2B TO 0% OUTPUT.

☒ ☐

Conditions/Cues 1. WHEN THE OPERATOR LOCATES THE MANUAL OUTPUT DECREASE PUSHBUTTON ON THE CONTROLLER AND DEMONSTRATES ACTION TO LOWER OUTPUT, CUE THE OPERATOR THAT PROCESS OUTPUT METER READS 0%.

Standards 1. THE OPERATOR LOCATES SI-IFIC-0307 ON CP-8.
2. THE OPERATOR DEPRESSES THE MANUAL OUTPUT DECREASE PUSHBUTTON ON THE CONTROLLER UNTIL OUTPUT READS 0%.

C TC

- 6 VERIFY THE FOLLOWING VALVES CLOSED: SI-415A, SHUTDOWN TEMP CONTROL VALVE [KEY 138], SI-138A, COLD LEG 2B, SI-139A, COLD LEG 2A

☒ ☐

Conditions/Cues 1. WHEN THE OPERATOR LOCATES EACH VALVE C/S ON CP-8 AND DEMONSTRATES THE ACTION TO PLACE EACH VALVE IN THE REQUIRED POSITION, CUE THE OPERATOR THAT THE VALVE IS CLOSED. (AT THE EXAMINER'S DISCRETION HE MAY CUE THE OPERATOR THAT SI-138A OR SI-139A IS NOT MOVING IF THE OPERATOR DOES NOT DEMONSTRATE OVERRIDING THE SIAS SIGNAL TO THE VALVE)

Standards 1. THE OPERATOR LOCATES THE C/S FOR SI-415A ON CP-8 AND VERIFIES THE C/S IS LOCKED IN THE LESS POSITION AND VERIFIES THE ANALOG VALVE POSITION INDICATOR READS 0% OR THAT THE GREEN LIGHT IS LIT AND RED LIGHT IS EXTINGUISHED ABOVE THE C/S.
2. THE OPERATOR LOCATES THE C/S FOR SI-138A ON CP-8 AND PLACES THE C/S TO THE MORE POSITION TO OVERRIDE THE SIAS SIGNAL AND THEN BACK TO LESS UNTIL THE DIGITAL INDICATOR ABOVE THE C/S READS 0% OR THE GREEN LIGHT IS LIT AND RED LIGHT IS EXTINGUISHED ON THE C/S.
3. THE OPERATOR LOCATES THE C/S FOR SI-139A ON CP-8 AND PLACES THE C/S TO THE MORE POSITION TO OVERRIDE THE SIAS SIGNAL AND THEN BACK TO LESS UNTIL THE DIGITAL INDICATOR ABOVE THE C/S READS 0% OR THE GREEN LIGHT IS LIT AND RED LIGHT IS EXTINGUISHED ON THE C/S.

ALIGN A LPSI PUMP TO REPLACE A CS PUMP

7 OPEN SI-125A/SI-412A, SHDN HX A ISOL VALVES. [KEY 136]

C TC
☒ ☐

Conditions/Cues 1. WHEN THE OPERATOR LOCATES THE SWITCH FOR SI-125A/SI-412A ON CP-8 AND DEMONSTRATES ACTION TO OPEN THE VALVES, CUE THE OPERATOR THAT SI-125A AND SI-412A ARE OPEN.

Standards 1. THE OPERATOR OBTAINS THE KEY FOR SI-125A/SI-412A FROM THE KEY LOCKER ON THE SIDE OF THE NPO DESK.
2. THE OPERATOR LOCATES THE SWITCH FOR SI-125A/SI-412A ON CP-8, INSERTS THE KEY, MOMENTARILY PLACES THE C/S TO OPEN, AND RELEASES THE SWITCH.
3. THE OPERATOR VERIFIES THE VALVES OPEN BY OBSERVING BOTH RED LIGHTS ARE LIT AND BOTH GREEN LIGHTS ARE EXTINGUISHED ABOVE C/S.

8 VERIFY CS-125A, CNTMT SPRAY HEADER A VALVE OPEN.

C TC
☐ ☐

Conditions/Cues 1. WHEN THE OPERATOR LOCATES THE C/S FOR CS-125A ON CP-8 AND DEMONSTRATES METHOD FOR VERIFYING VALVE POSITION, CUE THE OPERATOR THAT CS-125A IS OPEN.

Standards 1. THE OPERATOR LOCATES THE C/S FOR CS-125A ON CP-8.
2. THE OPERATOR VERIFIES THAT THE RED LIGHT IS LIT AND THE GREEN LIGHT IS EXTINGUISHED ON THE C/S.

9 START LPSI PUMP A.

C TC
☒ ☐

Conditions/Cues 1. WHEN THE OPERATOR LOCATES LPSI PUMP A C/S ON CP-8 AND DEMONSTRATES ACTION TO START THE PUMP, CUE THE OPERATOR THAT THE PUMP IS RUNNING.

Standards 1. THE OPERATOR LOCATES LPSI PUMP A C/S ON CP-8, MOMENTARILY PLACES THE C/S TO THE START POSITION, AND VERIFIES THE RED LIGHT IS LIT AND THE GREEN LIGHT IS EXTINGUISHED ON THE C/S.
2. THE OPERATOR VERIFIES DISCHARGE PRESSURE INDICATOR ON CP-8 INCREASES.
3. THE OPERATOR VERIFIES CURRENT INDICATION ON CP-8 IS STEADY AND NOT PEGGED (20-60 AMPS) AFTER STARTING CURRENT DROPS OFF.

10 VERIFY CONTAINMENT SPRAY HEADER A FLOW.

C TC
☐ ☐

Conditions/Cues 1. WHEN THE OPERATOR LOCATES CONTAINMENT SPRAY HEADER A FLOW INDICATOR ON CP-8, CUE THE OPERATOR THAT FLOW IS 2000 GPM.

Standards 1. THE OPERATOR LOCATES CONTAINMENT SPRAY HEADER A FLOW INDICATOR ON CP-8 AND VERIFIES FLOW INDICATION MEETS ACCEPTANCE CRITERIA FOR SAFETY FUNCTION.

ALIGN A LPSI PUMP TO REPLACE A CS PUMP

11 END OF TASK

C **TC**
☐ ☐

Information for Trainee

Directions to Examinee:

Initial Condition

1. AN ESD AND A SGTR HAVE OCCURRED ON SG 1.
2. CONTAINMENT PRESSURE IS 40 PSIA AND RISING RAPIDLY.
3. NEITHER CS PUMP IS AVAILABLE.
4. ALL ESFAS ACTUATIONS HAVE OCCURRED AS REQUIRED. ASSUME ALL COMPONENTS ACTUATED PER DESIGN UNLESS OTHERWISE STATED.
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7. THE TSC CONCURS WITH THE DECISION.

Initiating Cue

THE CRS DIRECTS YOU THE SNPO TO ALIGN LPSI PUMP A TO REPLACE CS PUMP A IN ACCORDANCE WITH OP-902-009 STANDARD APPENDICES 29.