

JOB PERFORMANCE MEASURE

TASK CONDITIONS:

1. You are the Assist NSO
2. Unit 1 is in mode 1
3. Unit 1 Containment Chiller (1WO01CA) tripped 5 minutes ago. An NLO was dispatched and is standing by for a start of the standby chiller 1WO01CB.

INITIATING CUES:

You are directed to perform a REMOTE start of B Containment Chiller 1WO01CB and Chilled Water pump 1WO01PB per BOP VP-1. The Shift Manager directs you NOT to change position of the control switch for A Containment Chiller 1WO01CA.

JOB PERFORMANCE MEASURE

Rev. 0, 08/20/03

TASK TITLE: Perform a REMOTE start of the Containment Chiller

JPM No.: N-300

TPO No: K&A No.: 022A4.02

K&A IMP. 3.2 / 3.1

TRAINEE: _____

DATE: ____/____/____

The Trainee: PASSED _____ this JPM

TIME STARTED: _____

FAILED _____

TIME FINISHED: _____

EVALUATION METHOD: PERFORM _____ SIMULATE _____

LOCATION: IN PLANT _____ SIMULATOR X _____

MATERIALS:

BOP VP-1 RCFC REFRIGERATION UNIT AND CHILLED WATER SYSTEM STARTUP

BOP VP-2 RCFC REFRIGERATION UNIT AND CHILLED WATER SYSTEM SHUTDOWN

GENERAL REFERENCES:

1. BOP VP-1, RCFC REFRIGERATION UNIT AND CHILLED WATER SYSTEM STARTUP
2. BOP VP-2 RCFC REFRIGERATION UNIT AND CHILLED WATER SYSTEM SHUTDOWN

TASK STANDARDS:

1. Perform start of 1WO01CB
2. Demonstrates the use of good Core Work Practices (CWP).

TASK CONDITIONS:

1. You are an Assist NSO
2. Unit 1 is in mode 1
3. Unit 1 Containment Chiller (1WO01CA) tripped 5 minutes ago. An NLO was dispatched and is standing by for a start of the standby chiller 1WO01CB.

INITIATING CUES:

You are directed to perform a REMOTE start of B Containment Chiller 1WO01CB and Chilled Water pump 1WO01PB per BOP VP-1. The Shift Manager directs you NOT to change position of the control switch for A Containment Chiller 1WO01CA.

CRITICAL ELEMENTS: (*)

4, 6, 13

APPROXIMATE COMPLETION TIME: 15 Minutes

RECORD START TIME _____

NOTE

If this JPM is given on the simulator, only the cues underlined are required to be given to the examinee.

NOTE

Provide the candidate with a copy of BOP VP-1

1. Refer to BOP VP-1 Locate and open BOP VP-1 ☐ ☐ ☐

Cue: Prerequisites are completed

NOTE

Provide the candidate with a copy of BOP VP-2 if requested to shutdown 1WO01PA

NOTE

The Limitations and Actions state that BOTH chilled water pumps should not be operated at the same time. The candidate should shutdown the 1WO01PA prior to starting 1WO01PB. Step 1 and 2 of BOP VP-2 are N/A due to the Chiller being tripped. IF candidate decides to shutdown A Chilled water Pump the next step will be performed

2. Stop 1WO01PA Primary Cnmt Stop 1WO01PA at 0PM02J ☐ ☐ ☐
Chilled water pump

Cue: 1WO02PA is stopped

3. Verify/Open the supply and return valves	Verify/Open	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Cue: 1SX016B OPEN light is LIT	• 1SX016B (1PM06J)
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Cue: 1SX027B OPEN light is LIT	• 1SX027B (1PM06J)
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Cue: 1SX112B OPEN light is LIT	• 1SX112B (0PM02J)
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Cue: 1SX114B OPEN light is LIT	• 1SX114B (0PM02J)
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*4. Verify/Open the Containment Isolation valves	Verify/Open at 1PM06J	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Cue: 1WO006B CLOSED light is LIT	• 1WO006B
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Cue: 1WO020B CLOSED light is LIT	• 1WO020B
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Cue: 1WO056B open light is LIT	• 1WO056B
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After valve strokes:

Cue: 1WO006B open light is LIT

Cue: 1WO020B open light is LIT

Cue: 1WO056B open light is LIT

5. Verify chilled water pump suction pressure acceptable (Step F.3)	• Direct NLO to verify chilled water pump suction pressure at least 10 psig Locally	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Cue: NLO reports 1PIWO009 is reading 12 psig

NOTE

The candidate should shutdown the 1WO01PA prior to starting 1WO01PB. IF 1WO01PA is not shutdown, the WO flow in Step 7 will not be able to be adjusted to proper range.

- *6. Start chilled water pump 1WO01PB • Start chilled water pump ☐ ☐ ☐
1WO01PB

Cue: 1WO01PB run light is LIT

NOTE

The candidate may direct the NLO to perform Steps 7-11, if this occurs provide the cues for each of the steps 7-11

7. Verify flow is in acceptable range (Step F.5) • Direct NLO to verify flow on 1FIWO027 is above 2700 gpm ☐ ☐ ☐

**Cue: IF 1WO01PA is SHUTDOWN
NLO reports 1FIWO027 is reading 2860 gpm and stable**

**Cue: IF 1WO01PA is still RUNNING
NLO reports 1FIWO027 is reading 3890 gpm**

- Direct NLO to Adjust 1WO005B to maintain between 2700 and 3000 gpm.

**Cue: IF 1WO01PA is still RUNNING
NLO reports cannot reduce flow to less than 3100 gpm**

8. Verify chiller oil level is visible in the sight glass (Step F.6) • Direct NLO to verify chiller oil level is visible in the local sight glass ☐ ☐ ☐

Cue: NLO reports the oil level is visible in the sight glass

9. Verify oil reservoir temperature is acceptable (Step F.7) • Direct NLO to verify oil reservoir temperature is 130-140F Locally ☐ ☐ ☐

Cue: NLO reports oil temperature is 133F

- | | | | | |
|---|--|---|---|---|
| 10. Place electrical demand selector in the chiller local panel to 60% (Step F.8) | • Direct NLO to Place electrical demand selector in the chiller local panel to 60% | □ | □ | □ |
|---|--|---|---|---|

Cue: NLO reports electrical demand selector in the chiller local panel at 60%

- | | | | | |
|---|--|---|---|---|
| 11. Verify local control switch at chiller control panel to STOP (Step F.10a) | • Direct NLO to Verify/Place local control switch at chiller control panel to stop | □ | □ | □ |
|---|--|---|---|---|

Cue: NLO reports Local control switch is in STOP

- | | | | | |
|--|---|---|---|---|
| 12. Verify local/remote transfer switch to REMOTE (Step F.10b) | • Direct NLO to Verify/Place local/remote transfer switch to REMOTE | □ | □ | □ |
|--|---|---|---|---|

Cue: NLO reports Local/remote switch is in REMOTE

NOTE

After the chiller gets a start signal, the amber AUTO TRIP light will be on until the chiller starts. The chiller should start ~ 60 seconds after the start signal.

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|--|--|---|---|---|
| *13. Place remote control switch for chiller to CLOSE (Step F.10c) | • Place remote control switch for chiller on 0PM02J to CLOSE | □ | □ | □ |
|--|--|---|---|---|

Cue: The control switch is in close

- | | | | | |
|---|--|---|---|---|
| 14. Reset safety indicators on local control panel (Step F.10d) | • Direct NLO to Reset safety indicators on local control panel | □ | □ | □ |
|---|--|---|---|---|

Cue: NLO reports the safety indicators have been reset

NOTE

Procedure steps F.11-F.13 require no actions. They are information steps for the local operator

The candidate may direct the NLO to report Steps F.11-F.13, if this occurs provide the following cues:

CUE:11. Program timer light will come on. 12. Oil pump started in ~25 seconds. 13 Compressor started ~30 seconds after oil pump starts.

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|--|--|--|
| 15. Check that the program timer light goes off. (Step F.14) | <ul style="list-style-type: none">• Direct NLO to Check that the program timer light goes off. | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
|--|--|--|

Cue: NLO reports The program timer light is off

- | | | |
|---|---|--|
| 16. Momentarily CLOSE 1SX147B until dual indication is present. (Step F.15) | <ul style="list-style-type: none">• Momentarily CLOSE 1SX147B until dual indication is present. | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
|---|---|--|

Cue: 1SX147B has dual indication

NOTE

The remainder of BOP VP-1 are local operator actions. Provide the candidate the following Cue.

CUE: The NLO reports Steps F.16-F.22 are complete.

This JPM is completed.

RECORD STOP TIME _____

COMMENTS:

JOB PERFORMANCE MEASURE

TASK CONDITIONS:

- 1. *You are the Assist NSO.***
- 2. *Unit 1 is in mode 3 preparing for Startup***
- 3. *Based on recent alarms, the DRPI status is in question***

INITIATING CUES:

The Unit Supervisor has directed you to perform BOP RD-8 to determine if DRPI Limiting Conditions for Operation and TCLO's are met.

JOB PERFORMANCE MEASURE

Rev. 0, 8/28/2001

TASK TITLE: Respond to a DRPI failure

JPM No.: N-301

TPO No: K&A No.: 014A1.02

K&A IMP: 3.2/3.6

TRAINEE: _____

DATE: ____/____/____

The Trainee: PASSED _____ this JPM

TIME STARTED: _____

FAILED _____

TIME FINISHED: _____

EVALUATION METHOD: PERFORM _____ SIMULATE _____

LOCATION: IN PLANT _____ SIMULATOR X

MATERIALS:

BOP RD-8 DRPI SYSTEM TROUBLESHOOTING Rev.0

GENERAL REFERENCES:

1. BOP RD-8 DRPI SYSTEM TROUBLESHOOTING Rev.0

TASK STANDARDS:

Perform 1BOP RD-8 to determine if DRPI LCO's and TLCO's are met.

TASK CONDITIONS:

4. ***You are the Assist NSO.***
5. ***Unit 1 is in mode 3 preparing for Startup***
6. ***Based on recent alarms, the DRPI status is in question***

INITIATING CUES:

The Unit Supervisor has directed you to perform BOP RD-8 to determine if DRPI Limiting Conditions for Operation and TLCO's are met.

CRITICAL ELEMENTS: (*) 3, 9, 11

APPROXIMATE COMPLETION TIME: 18 minutes

RECORD START TIME _____

NOTE:

If this JPM is given on the simulator, only the cues underlined are required to be given to the Candidate.

NOTE:

Candidate may determine that LCO's and TLCO's are met at any time during this JPM

NOTE:

Give Candidate a Copy of BOP RD-8, DRPI System Troubleshooting

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|---|---|--------------------------|--------------------------|--------------------------|
| 1. Refer to BOP RD-8, DRPI System Troubleshooting | • Locate and open BOP RD-8, DRPI System Troubleshooting | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | | | | |
| 2. Check if SER 2151 alarm status
<u>CUE: (If asked) SER point 2151 is NOT in alarm</u> | • Determine SER 2151 is not in alarm. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

*3. Check SER point 2150 alarm status

Determine SER point 2150 is in alarm record data per Step F.2



CUE: (If asked)SER point 2150 is in alarm

CUE: GW for Rod K6

- General Warning

CUE: Rod K6

- Individual Rod

CUE: Rod K6 at 0 steps

- Rod Position

CUE: NO Central Control Failure

- Central Control Failure

CUE: NO Urgent Alarm

- Urgent alarm

CUE: NO Data A failure

- Data A Failure

CUE: Data B Failure LIT

- Data B Failure

Note:

Candidate may inform Unit NSO/US that upcoming actions will change DRPI state

4. Test Data Train on the back of the DRPI display panel

- Place the ACCURACY MODE switch on the back of the DRPI display panel in the A ONLY position



CUE: Unit Supervisor directs you to place the ACCURACY MODE switch in the(desired) position

5. Record data for the selected accuracy mode

With ACCURACY MODE selected to the A ONLY position record data

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CUE: GW for ALL RODS

CUE: ALL

CUE: N/A

CUE: NO Central Control Failure

CUE: NO Urgent Alarm

CUE: NO Data A failure

CUE: Data B Failure LIT

- General Warning
- ALL
 - Rod Position
 - Central Control Failure
 - Urgent alarm
 - Data A Failure
- Data B Failure

NOTE:

ROD CONTROL URGENT FAILURE (1-10-C6) will alarm when next step is performed. The EXAMINER will provide the following cue to the candidate after it is silenced.

CUE: Unit 1 Operator has silenced alarm 1-10-C6

6. Test other Data Train on the back of the DRPI display panel

- Place the ACCURACY MODE switch on the back of the DRPI display panel in the B ONLY position

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CUE: (If asked) Unit Supervisor directs you to place the ACCURACY MODE switch in the (desired) position

7. Record data for other Data train

With the ACCURACY MODE
is selected to B ONLY
position record data:

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CUE: GW for ALL RODS

- General Warning

CUE: ALL

- ALL

CUE: N/A

- Rod Position

CUE: NO Central Control Failure

- Central Control Failure

CUE: NO Urgent Alarm

- Urgent alarm

CUE: NO Data A failure

- Data A Failure

CUE: Data B Failure LIT

- Data B Failure

8. Evaluate data and
determine and record which
channel is operable

- Evaluate data and
determine channel A is
operable

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NOTE: A is the OPERABLE Channel

NOTE:

Procedure says ACCURACY MODE Switch SHOULD remain in the A+B position if only one channel on an individual rod is failed.

*9. Place the ACCURACY MODE
switch on the back of the DRPI
display panel to an operable
channel

- Place the
ACCURACY MODE
switch on the back of the
DRPI display panel to an
operable channel

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**CUE: (IF ASKED) As Unit
Supervisor ask for
recommended position**

- A+B
- A ONLY

**CUE: US concurs with your
evaluation on the accuracy
mode switch position.**

10. If Central Control Failure is indicated perform step F.3.c

- Determine Central Control Failure is not indicated

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CUE(IF ASKED) Reactor Engineer states that NO Central Control card failure exists.

*11 Determine if DRPI LCO's and TLCO's are met

- Determine applicable Technical Specifications LCO's & TLCO's are being met.

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CUE: Tech Spec books may be referred to as necessary

NOTE: All LCO's and TLCO's are satisfied.

- TLCO 3.1.g
- LCO 3.1.7

Cue: This JPM is completed.

RECORD STOP TIME_____

COMMENTS:

JOB PERFORMANCE MEASURE

TASK CONDITIONS:

1. You are the Unit 1 Assist NSO
2. The Unit is in Mode 1, all conditions are normal
3. Essential Service Water pump 1SX01PA is in service with increased amps (165)

INITIATING CUES:

The Unit Supervisor directs you to start SX pump 1B and then stop SX Pump 1A.
An NLO is in the field ready to provide any local operations.

JOB PERFORMANCE MEASURE

Rev. 1, 08/05/2002

TASK TITLE: Swap SX Pumps (1SX016B is Closed)

JPM No.: N-109

TPO No: 4C.SX-03

K&A No.: 075A4.01

K&A IMP. 3.2/3.2

TRAINEE: _____

DATE: ____/____/____

The Trainee: PASSED _____ this JPM

TIME STARTED: _____

FAILED _____

TIME FINISHED: _____

EVALUATION METHOD: PERFORM _____ SIMULATE _____

LOCATION: SIMULATOR X

MATERIALS:

Batch file N-109

GENERAL REFERENCES:

1. BOP SX-9, Switching a Standby Essential Service Water Pump with an Operating Essential Service Water Pump (Rev. 13)

TASK STANDARDS:

Take the actions necessary to swap Essential Service Water Pumps.

TASK CONDITIONS:

1. You are the Unit 1 Assist NSO
2. The Unit is in Mode 1, all conditions are normal
3. Essential Service Water pump 1SX01PA is in service with increased amps (165)

INITIATING CUES:

The Unit Supervisor directs you to start SX pump 1B and then stop SX Pump 1A.
An NLO is in the field ready to provide any local operations.

CRITICAL ELEMENTS: (*) 3, 6, & 9

APPROXIMATE COMPLETION TIME: 20 minutes

RECORD START TIME _____

NOTE

If this JPM is performed on the simulator, only the cues underlined are required to be provided to the trainee.

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|--|----------------------------|--------------------------|--------------------------|--------------------------|
| 1. Refer to BOP SX-9, Essential Service Water Pump Startup | ◦ LOCATE and OPEN BOP SX-9 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|--|----------------------------|--------------------------|--------------------------|--------------------------|

Note: JPM step 1 may be performed at any time

Cue: All prerequisites have been met

Cue: (if asked) U2 will swap SX pumps after you are done

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|---|---|--------------------------|--------------------------|--------------------------|
| 2. Verify SX Tower alignment | At OPM01J VERIFY/OPEN: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Cue: There are 6 OSX163 valves OPEN | • Adequate flow path | | | |
| | ◦ 2 OSX163 valves are OPEN, per pump -OR- | | | |
| | ◦ 1 OSX162 valve is OPEN per pump | | | |
| Cue: (If asked) There are NO OSX162 valves OPEN | | | | |

- | | | | | |
|---|---|--------------------------|--------------------------|--------------------------|
| *3. Verify RCFC system alignment | At 1PM06J VERIFY/OPEN: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Cue: 1SX016B 'RED' light is LIT | <ul style="list-style-type: none"> • 1SX016B, RCFC 1B and 1D SX supply | | | |
| Cue: (after the 1SX016B is opened) 1SX016B 'GREEN' light is lit | <ul style="list-style-type: none"> ◦ 1SX027B, RCFC 1B and 1D SX return | | | |
| Cue: 1SX027B 'GREEN' light is LIT | | | | |
| 4. Verify system alignment | At 1PM06J VERIFY/OPEN: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <u>Cue: 1SX001B is de-energized open</u> | <ul style="list-style-type: none"> ◦ 1SX001B, 1B SX pump suction | | | |

NOTE

Cue candidate to call NLO at 4155 for Step 5

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|-------------------------------|---------------------------|---|---|---|
| 5. SX pump 1B local alignment | DIRECT local operator to: | □ | □ | □ |
|-------------------------------|---------------------------|---|---|---|
-
- | | |
|---|---|
| Cue: <u>Local operator reports that 1SX143B is OPEN (step F.6)</u> | <ul style="list-style-type: none"> ◦ VERIFY/OPEN
1SX143B, 1B SX pump
dsch vlv |
| Cue: <u>Local operator reports that 1SX2180B is OPEN (step F.7)</u> | <ul style="list-style-type: none"> ◦ VERIFY/OPEN
1SX2180B, 1B SX pump
oil cooler SX inlet
isolation |
| Cue: <u>Local operator reports that 1SX2179B is THROTTLED OPEN (step F.8)</u> | <ul style="list-style-type: none"> ◦ VERIFY/OPEN or
THROTTLED
1SX2179B, 1B SX pump
oil cooler outlet isolation |
| Cue: <u>Local operator reports that the 1B SX pump has been vented (step F.9 & F.10)</u> | <ul style="list-style-type: none"> ◦ VENT the 1B SX pump |
| Cue: (Simulator operator has to perform this) | <ul style="list-style-type: none"> ◦ START the auxiliary lube
oil pump for the 1B SX
pump |
-
- Local operator reports that the auxiliary lube oil pump for the 1B SX pump is running (step F.11) -AND/OR- The 'Aux Oil Run' light is LIT**

*6. Start the pump At 1PM06J: ☐ ☐ ☐

Cue: *The 1B SX pump control switch is in the START position* • START 1B SX pump

Cue: *The 1B SX pump 'GREEN' light is LIT*

Cue: *The 1B SX pump control switch is in the AFTER-START position*

NOTE

Cue candidate to call NLO at 4155 for Steps 7 & 8

Simulator Operator has to perform these steps.

7. Auxiliary lube oil pump ☐ ☐ ☐

Cue: The local operator reports that the 1B SX pump auxiliary lube oil pump has been stopped and that the shaft driven lube oil pump discharge pressure is 12 psig (step F.13) - DIRECT the local operator to STOP the 1B SX pump auxiliary lube oil pump paying attention to the CAUTION
AND/OR- *The 'Aux Oil Run' light is NOT LIT*

8. Auxiliary lube oil pump ☐ ☐ ☐

Cue: Local operator reports that the auxiliary lube oil pump for the 1A SX pump is running (step F.14) - DIRECT the local operator to START the 1A SX pump auxiliary lube oil pump
AND/OR- *The 'Aux Oil Run' light is LIT*

*9. Stop the pump

At 1PM06J:

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Cue: *The 1A SX pump control switch is in the TRIP position*

- TRIP 1A SX pump

Cue: *The 1A SX pump 'BLUE' light is LIT*

Cue: *The 1A SX pump control switch is in the AFTER-TRIP position*

NOTE

Cue candidate to call NLO at 4155 for Step 10

Simulator Operator has to perform this step.

10. Aux oil pump

DIRECT local operator to:

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Cue: The local operator reports that the 1A SX pump auxiliary oil pump is OFF (step F.16)
AND/OR- The 'Aux Oil Run' light is NOT LIT

- STOP 1A SX pump aux oil pump when SX pump shaft stops turning

- VERFIY/OPEN 1SX143A, 1A SX pump discharge valve

Cue: The local operator reports that 1SX143A is OPEN (step F.17)

Cue: This JPM is completed

RECORD STOP TIME

COMMENTS:

JOB PERFORMANCE MEASURE

TASK CONDITIONS:

1. You are the extra NSO.
2. The unit's ESF busses are being supplied by the SATs.
3. The 1A Diesel Generator has been running unloaded for approximately fifteen minutes after a manual start for a post maintenance run..
4. Jacket water and lube oil temperatures are acceptable for loading the diesel generator.

INITIATING CUES:

The Unit Supervisor directs you to parallel and load the 1A Diesel Generator to 5400 KW per step F.5 of BOP DG-11.

JOB PERFORMANCE MEASURE

Rev. 4, 10/02/2002

TASK TITLE: Synchronize a D/G to a Bus and Load to 5400 KW JPM No.: N-19a
(DG will not pick up load)

TPO No: IV.C.DG-02

K&A No.: 064A2.09

K&A IMP. 3.1/3.3

TRAINEE: _____

DATE: ____/____/____

The Trainee: PASSED _____ this JPM

TIME STARTED: _____

FAILED _____

TIME FINISHED: _____

EVALUATION METHOD: PERFORM _____ SIMULATE _____

LOCATION: IN PLANT _____ SIMULATOR X

MATERIALS:

None

GENERAL REFERENCES:

1. BOP DG-11, Diesel Generator Startup (Rev. 17)
2. BOP DG-11T1, Diesel Generator Start /Stop Log (Rev. 1)

TASK STANDARDS:

Perform the actions necessary to synchronize and load the 1A Diesel Generator to it's ESF bus.

TASK CONDITIONS:

1. You are the extra NSO.
2. The unit's ESF busses are being supplied by the SATs.
3. The 1A Diesel Generator has been running unloaded for approximately fifteen minutes after a manual start.
4. Jacket water and lube oil temperatures are acceptable for loading the diesel generator.

INITIATING CUES:

The Unit Supervisor directs you to parallel and load the 1A Diesel Generator to 5400 KW per step F.5 of BOP DG-11.

CRITICAL ELEMENTS: (*) 6, 9, & 11

APPROXIMATE COMPLETION TIME: 15 minutes

RECORD START TIME _____

NOTE

If this JPM is given on the simulator, only the cues underlined are required to be given to the trainee.

Provide candidate a copy of BOP DG-11. If requested provide candidate a copy of BOP DG-11T1.

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|---|---------------------------------------|--------------------------|--------------------------|--------------------------|
| 1. Refer to BOP DG-11, Diesel Generator Startup | ◦ LOCATE and OPEN BOP DG-11, step F.5 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|---|---------------------------------------|--------------------------|--------------------------|--------------------------|

Cue: All prerequisites have been met

Cue: (If asked) The 1A DG was started per step F.1

Cue: (If asked) The 1A DG was started fifteen minutes ago

Note: This step may be performed at any time.

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|---|--|--------------------------|--------------------------|--------------------------|
| 2. Notify Electric Operations of pending diesel generator parallel operation, estimated run time, and loading | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|---|--|--------------------------|--------------------------|--------------------------|

Cue: Electric Operations has been informed ◦ Notify Electric Operations

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|--|------------|--------------------------|--------------------------|--------------------------|
| 3. Auto Re-close Circuit Arm Selector Switch | At 1PM01J: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|--|------------|--------------------------|--------------------------|--------------------------|

Cue: The Auto Re-close Circuit Arm Selector Switch is in the SURV TEST position ◦ PLACE Auto Re-close Circuit Arm Selector Switch to SURV TEST

4. Verify DG operating properly	At 1PM01J, CHECK:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	◦ DG frequency			
<u>Cue: DG frequency is 60 Hz</u>	◦ DG voltage			
Cue: DG voltage is 4160 volts				
5. Verify the same voltage across each phase.	At 1PM01J, CHECK:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	◦ DG phase voltages			
Cue: All DG phase voltages are approximately equal				
*6. Turn on the 1A DG Feed to 141 Sync Selector switch.	At 1PM01J:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cue: The Sync Selector switch for DG 1A Feed to 4KV Bus 141 is ON	• TURN Sync Selector switch for DG 1A Feed to 4KV Bus 141 to ON			
7. Adjust the incoming voltage.	At 1PM01J:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cue: Incoming voltage is 2 volts higher than running voltage	▪ ◦ ADJUST incoming voltage SLIGHTLY HIGHER than running voltage using DG 1A Volt Adj control			
8. Adjust 1A DG speed.	At 1PM01J:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cue: The synchroscope is rotating slowly in the FAST direction	◦ Adjust speed so synchroscope rotates SLOWLY in FAST DIRECTION using DG 1A Gov Adj control			

*9. Synchronize the DG At 1PM01J: ☐ ☐ ☐

Cue: *(If requested) NLO is locally monitoring temperatures per notes in BOP*

Cue: *ACB 1413 'RED' light is LIT*

- PLACE control switch for ACB 1413 to CLOSE when synchroscope is slightly before 12 o'clock

10. Verify the synchroscope is locked in. At 1PM01J: ☐ ☐ ☐

Cue: *The synchroscope is "locked in" at the 12 o'clock position*

- VERIFY synchroscope "locks in" at 12 o'clock

NOTE

ALTERNATE PATH BEGINS AT STEP 11

*11. Immediately load the 1A DG to 1000 KW. At 1PM01J: ☐ ☐ ☐

Cue: *The diesel generator is NOT loading*

Note: *The governor adjust is failed such that the diesel generator will NOT load*

- IMMEDIATELY attempt to load DG to 1000 KW by going to RAISE on Gov Adj Control
- OPEN output breaker

Cue: *The diesel generator output breaker 'GREEN' light is LIT*

12. Notify the US of the unsuccessful loading of the diesel ☐ ☐ ☐

Cue: *The Unit Supervisor acknowledges the failure and will initiate an WR for maintenance to investigate*

- NOTIFY Unit Supervisor of the unsuccessful loading of the diesel

Cue: *This JPM is completed*

RECORD STOP TIME _____

COMMENTS:

JOB PERFORMANCE MEASURE

TASK CONDITIONS:

1. You are an extra NSO.
2. The unit is in mode 31.
3. All controls are in automatic.
4. Annunciator 1-5-B2, ACCUM 1B PRESS HIGH LOW, is Lit.

INITIATING CUES:

You are directed to take action in accordance with the BAR.

JOB PERFORMANCE MEASURE

Rev. 7, 09/16/02

TASK TITLE: Decrease SI Accumulator Pressure

JPM No.: N-04

TPO No: IV.C.SI-04

K&A No.: 006A1.13

K&A IMP. 3.5 / 3.7

TRAINEE: _____

DATE: ____/____/____

The Trainee: PASSED _____ this JPM

TIME STARTED: _____

FAILED _____

TIME FINISHED: _____

EVALUATION METHOD: PERFORM _____ SIMULATE _____

LOCATION: IN PLANT _____ SIMULATOR X _____

MATERIALS:

Batch file N-04

GENERAL REFERENCES:

1. BOP SI-9, Lowering SI Accumulator Pressure (Rev. 8)
2. BAR 1-5-B2, ACCUM 1B PRESS HIGH LOW (Rev. 1)
3. Tech Spec 3.5.1

TASK STANDARDS:

Perform actions necessary to return accumulator pressure to within Technical Specification limits.

TASK CONDITIONS:

1. You are an extra NSO.
2. The unit is in mode 31.
3. All controls are in automatic.
4. Annunciator 1-5-B2, ACCUM 1B PRESS HIGH LOW, is Lit.

INITIATING CUES:

You are directed to take action in accordance with the BAR.

CRITICAL ELEMENTS: (*)

7, 8, & 11

APPROXIMATE COMPLETION TIME: 9 Minutes

RECORD START TIME _____

NOTE

If this JPM is given on the simulator, only the cues underlined are required to be given to the Traineeexaminee.

Examiner NOTE

If candidate wants to lower Accumulator level direct as Shift Manager to lower Pressure.

- | | | |
|---|--|----------|
| 1. Check Accumulator 1B parameters. | Check Accum 1B: | □□ □□ □□ |
| | o Pressure | |
| Cue: <i>Pressure is 650 psig on MCB meters 1PI-962 & 963.</i> | | |
| | o Level | |
| Cue: <i>Both level channels indicate 55% and stable.</i> | | |
| Cue: <i>(If requested) <u>SER points 0602 and 2067 have printed out</u></i> | | |
| | | |
| 2. Enter Tech Specs LCOAR. | o Insure Tech Spec LCOAR entered due to high pressure and US is aware. | □□ □□ □□ |
| Cue: <i><u>US has entered LCOAR , and directs you to LOWER SI Accumulator Pressure to within Tech Spec limits.</u></i> | | |

NOTE

Provide candidate a copy of BOP SI-9

- | | | |
|--|--|-----------------------|
| <p>3. Refer to BOP SI-9, Lowering SI Accumulator Pressure.</p> <p>Cue: <u><i>There are no personnel are in CNMT</i></u></p> | <p>Locate and open BOP SI-9.</p> <ul style="list-style-type: none"> o Verify there are no people in U1 CNMT | <p>□□ □□ □□</p> |
| <p>4. Verify/Close 1SI8880, Accumulator N2 Supply Isolation Valve.</p> <p>Cue: <i>Valve 1SI8880 'GREEN' light is LIT.</i></p> | <p>At 1PM06J:</p> <ul style="list-style-type: none"> o Verify/Close 1SI8880. | <p>□□ □□ □□</p> |
| <p>5. Verify/Close 1SI943, Accumulator Vent Control Valve.</p> <p>Cue: <i>Valve 1SI943 potentiometer is at 0%.</i></p> | <p>At 1PM06J:</p> <ul style="list-style-type: none"> o Verify/Close 1SI943. | <p>□□ □□ □□</p> |
| <p>6. Initiate 1BOL 5.1.</p> <p>Cue: <u><i>The US has initiated 1BOL 5.1.</i></u></p> | <ul style="list-style-type: none"> o Inform US to initiate 1BOL 5.1. | <p>□□ □□ □□</p> |
| <p>*7. Open 1SI8875B, 1B Accumulator Vent Valve.</p> <p>Cue: <i>Valve 1SI8875B 'RED' light is LIT</i></p> | <p>At 1PM06J:</p> <ul style="list-style-type: none"> • Open 1SI8875B. | <p>□□ □□ □□</p> |

- | | | | | | |
|-----|---|---|----|----|----|
| *8. | Throttle open 1SI943, Accumulator Vent Control Valve. | At 1PM06J: | □□ | □□ | □□ |
| | | <ul style="list-style-type: none"> Throttle/Open 1SI943. | | | |

Cue: *Valve 1SI943 indicates DEMANDED position.*

- | | | | | | |
|----|---|--|----|----|----|
| 9. | Verify Pressure decrease | Monitor SI Accumulator Pressure Indicators: | □□ | □□ | □□ |
| | NOTE: <i>As the trainee examineecandidate verifies his indications on 1PI-962 &/or 963, announce 5 psig incremental pressure changes 5 seconds apart .</i> | <ul style="list-style-type: none"> 1PI-962 1PI-963 | | | |

- | | | | | | |
|-----|-------------------------------|--|----|----|----|
| 10. | Close Accumulator Vent Valve. | When accumulator pressure is IN NORMAL BAND, 602-647 PSIG: | □□ | □□ | □□ |
|-----|-------------------------------|--|----|----|----|

Cue: <i>Valve 1SI943 potentiometer is at 0%</i>	<ul style="list-style-type: none"> Close 1SI943
--	--

- | | | | | | |
|------|--|---|----|----|----|
| *11. | Close 1SI8875B, 1B Accumulator Vent Valve. | At 1PM06J: | □□ | □□ | □□ |
| | | <ul style="list-style-type: none"> Close 1SI8875B. | | | |

Cue: *Valve 1SI8875B 'GREEN' light is LIT*

- | | | | | | |
|-----|-------------|--------------------------------|----|----|----|
| 12. | Exit LCOAR. | Notify US LCOAR can be exited. | □□ | □□ | □□ |
|-----|-------------|--------------------------------|----|----|----|

Cue: *US has been notified and LCOAR will be exited.*

Cue: *This JPM is completed.*

RECORD STOP TIME _____

COMMENTS:

JOB PERFORMANCE MEASURE

JPM No.: N-08a(NOT
READY)

TASK CONDITIONS:

1. You are the Unit Extra NSO
2. The unit is in Mode 1.

INITIATING CUES:

You have been directed by the Unit Supervisor to perform adjust the NI's following a calorimetric per _1BOSR 3.1.2-11, using the Plant Process Computer. 1BOSR 3.1.2-1 is complete up to Step 28, Step 29 is in progress. N41 is Out of Service due to a channel failure. Rods are currently in MANUAL.

JOB PERFORMANCE MEASURE

Rev. 07, 8/1325/20031

TASK TITLE: Perform Calorimetric Using Process Plant
ComputerNI ADJUSTMENT FOLLOWING
CALORIMETRIC

JPM No.: N-08a

TPO No: 4C.NI-05

K&A No.: 015A1.01

K&A IMP. 3.5 / 3.8

TRAINEE: _____

DATE: ____/____/____

The Trainee: PASSED _____ this JPM

TIME STARTED: _____

FAILED _____

TIME FINISHED: _____

EVALUATION METHOD: PERFORM _____

LOCATION: IN PLANT _____ SIMULATOR X

MATERIALS:

1. Plant Process Computer
12. Copy of 1_BOSR 3.1.2-1

GENERAL REFERENCES:

1_BOSR 3.1.2-1, Calorimetric Calculation Daily Surveillance (Rev. 108)

TASK STANDARDS:

Perform the actions necessary to access the plant computer and run the calorimetric program.adjust NI's to meet the acceptance criteria of 1BOSR 3.1.2-1, Calorimetric Calculation Daily Surveillance (Rev. 10)

TASK CONDITIONS:

1. You are the Unit Extra NSO.
2. The unit is in Mode 1.

INITIATING CUES:

You have been directed by the Unit Supervisor to adjustment the NI's following a calorimetric per 1BOSR 3.1.2-1. 1BOSR 3.1.2-1 is complete up to Step 28, Step 29 is in progress. N41 is Out of Service due to a channel failure. Rods are currently in MANUAL.

You have been directed by the Unit Supervisor to perform a calorimetric per _BOSR 3.1.2-1, using the Plant Process Computer.

CRITICAL ELEMENTS: (*) 31, 52, 64, 96, 7, 8, 10

APPROXIMATE COMPLETION TIME: 181 minutes

NOTE

If this JPM is performed on the simulator, only the cues underlined are required to be provided to the trainee.

RECORD START TIME _____

NOTE

Provide candidate with a copy of 1BOSR 3.1.2-1.

- | | | | | | |
|---|---|---|--------------------------|--------------------------|--------------------------|
| *1. Refer to Obtain the Current percent power reading from N43 and record on Data Sheet D8 _BOSR 3.1.2-1, Calorimetric Calculation Daily Surveillance | • | ◦ LOCATE and OPENRecord current reading of N43 on Data Sheet D8 _BOSR 3.1.2-1 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|---|---|---|--------------------------|--------------------------|--------------------------|

Note: *Step 1 may be performed at any time.*

Cue: *All prerequisites and precautions are metN43 is reading 54.3*

Cue: *(If asked) All applicable Tech Specs have been evaluated/entered*

- | | | | | | |
|---|---|---|--------------------------|--------------------------|--------------------------|
| *2. Data sheet D2 blocks 1 and 2Subtract power difference from step F.28 from current N43 reading and record on Data Sheet D8 | • | Record the result of the calculation on Data Sheet D8 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|---|---|---|--------------------------|--------------------------|--------------------------|

RECORD:

- Date/time/name
- Gross MW
- Control bank positions
- Prerequisites met

- | | | | | | | |
|--|---|---|-----------------------------|--------------------------|--------------------------|--------------------------|
| *3. Data sheet D2 block 3Place Rod Control in Manual | • | • | Place Rod Control in Manual | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|--|---|---|-----------------------------|--------------------------|--------------------------|--------------------------|

Cue: Rod Control is in manual RECORD NIS power

NOTE:

Evaluator will have the fuses for N41 to give to the candidate.

- | | | | | | |
|--|---|-------------------------------------|--------------------------|--------------------------|--------------------------|
| *4. Install control power fuses for inoperable channel | • | Install control power fuses for N41 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|--|---|-------------------------------------|--------------------------|--------------------------|--------------------------|

Cue: Control Power fuses installed

- | | | | | | |
|--|---|--|--------------------------|--------------------------|--------------------------|
| 5. Adjust the gain pot until the Hi Rx Trip bistable is RESET4. Go to the process computer menu. | ○ | VERIFY/RESET the HI Rx Trip bistable at 1PM05J° On OPCON page of HMI computer DEPRESS MENU key | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|--|---|--|--------------------------|--------------------------|--------------------------|
- Cue: HI Rx Trip bistable is RESET**

- | | | | | | |
|---|---|--|--------------------------|--------------------------|--------------------------|
| *65. Select option "23" calorimetricReset the Positive Rate Trip by placing the RATE MODE Switch to RESET | • | SELECT option 23Reset the Positive Rate Trip | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|---|---|--|--------------------------|--------------------------|--------------------------|

Cue: HI Positive Rate Trip bistable is RESET

NOTE:

Alternate Path starts here

The Positive Rate trip for N43 will alarm when the candidate adjusts the gain pot.

- | | | | | | |
|--|---|--|--------------------------|--------------------------|--------------------------|
| *76. Determine type of calorimetric to useAdjust the OOT channel to the value recorded in step 2 by adjusting the gain pot | • | SELECT the 10 minute average long outpAdjust N43 to value recorded in step 2ut | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|--|---|--|--------------------------|--------------------------|--------------------------|

Cue: (If asked) There are no flow inconsistenciesN43 is reading 56.5

- *8. VERIFY/RESET Positive Rate Trips at 1PM07JSelect desired output device ☐ ☐ ☐

Cue: For this JPM, use the CRT Positive Rate Trips Reset.

- ° SELECT CRT
Verify Positive Rate Trips
RESET

98. Verify SG blowdown flowAfter adjustments completed initial data sheet ☐ ☐ ☐

Cue: Radwaste operator reports that blowdown flows are (same as values in computerData Sheet has been initialed)

- ° CONTACT
radwaste to verify SG
blowdown flowInitial Data
Sheet 8 for adjustment
complete on N43

- *109. Run the programRemove the Control Power fuse for the INOPERABLE NI Channel ☐ ☐ ☐

Cue: Fuses have been removed

- DEPRESS
ExecuteVERIFY/RESET on the OPERABLE CHANNELS
- HI Pwr HI Flux RX Trip
- Positive Rate Trip
- Remove the
CONTROL POWER
Fuse for N41
- VERIFY the following
bistables have tripped
- Lo Pwr HI Flux Rx Trip
(won't energize
manually blocked
when power is > P-10)
- HI Pwr HI Flux RX Trip

110. Data sheet D8 blocks 26 and 27
Return Rod Control to AUTO

Cue: Rod Control is in AUTO

Cue: This JPM is completed

- When Tave within 1 degree of Tref Place Rod Control System in AUTO°



RECORD NIS
and calorimetric power
values

RECORD STOP TIME _____

COMMENTS:

JOB PERFORMANCE MEASURE

TASK CONDITIONS:

1. You are the Unit 1 Assist NSO.
2. The Unit 1 has tripped 15 minutes ago, and 1BEP-0, 'Reactor Trip or Safety Injection' has been exited.
3. 1BEP ES-0.1, 'Reactor Trip Response' is in progress.
4. Both AF pumps have failed to start and neither can be started at this time.
Both AF pumps have failed to start and cannot be started at this time.

INITIATING CUES:

1. ***The US has directed you to restore FW per Attachment C of 1BEP ES-0.1 and inform the US when levels are trending toward normal.***
2. ***Call the WEC at x-4155 for in field assistance if required.***

JOB PERFORMANCE MEASURE

Rev. 0, 09/19/2002

TASK TITLE: Restore FW per Attachment C of 1BEP ES-0.1 JPM No.: N-121

TPO No: IV.D.EP-11

K&A No.: 059A4.11

K&A IMP: 3.1/3.3

TRAINEE: _____

DATE: ____/____/____

The Trainee: PASSED _____ this JPM

TIME STARTED: _____

FAILED _____

TIME FINISHED: _____

EVALUATION METHOD: PERFORM _____ SIMULATE _____

LOCATION: PLANT _____ SIMULATOR X _____

MATERIALS:

1. Copy of 1BEP ES-0.1, Attachment C

GENERAL REFERENCES:

1. 1BEP ES-0.1, Rev 101, Reactor Trip Response

TASK STANDARDS:

1. Correctly performs the actions to restore FW.
2. Demonstrates the use of good Core Work Practices (CWP).

TASK CONDITIONS:

1. You are the Unit 1 Assist NSO.
2. The Unit 1 tripped 15 minutes ago and 1BEP-0, 'Reactor Trip or Safety Injection' has been exited. Unit has tripped 15 minutes ago, and 1BEP-0 has been exited.
3. 1BEP ES-0.1, 'Reactor Trip Response' is in progress. 1BEP ES-0.1 is in progress.
4. Both AF pumps have failed to start and neither cannot be started at this time.

INITIATING CUES:

- 1. The US has directed you to restore FW per Attachment C of 1BEP ES-0.1.**
- 2. Call the WEC at x-4155 for in field assistance if required..**

CRITICAL ELEMENTS: (*) 8, 9, 11, & 12

APPROXIMATE COMPLETION TIME: 15 minutes

RECORD START TIME _____

NOTE

If this JPM is performed on the simulator, only the cues underlined are required to be provided to the trainee candidate.

- | | | | | |
|--|-------------------------------|--------------------------|--------------------------|--------------------------|
| 1. Refer to 1BEP ES-0.1, Reactor Trip Response | ◦ LOCATE and OPEN 1BEP ES-0.1 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | | | <input type="checkbox"/> | |

Note: Step 1 may be performed at any time (Attachment C)

NOTE

If candidate informs Unit Supervisor that 1BFR H.1 should be entered at any time during this JPM provide the following cue as the Unit Supervisor.

Cue: The rest of the crew will address 1BFR H.1 continue with procedure you are doing.

NOTE

Provide the trainee candidate with a copy of 1BEP ES-0.1, Attachment C.

- | | | | | |
|---|---------------------------|--------------------------|--------------------------|--------------------------|
| 2. Check Bus 159 energized. | At 1PM01J: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Cue: <u>The Bus 159 bus alive light is lit</u> | ◦ Check Bus 159 energized | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

- | | | | | |
|---|--|--------------------------|--------------------------|--------------------------|
| 3. Check at least two CD/CB pumps running. | At 1PM03J: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Cue: <u>The 1A and 1B CD/CB pumps 'GREEN' lights are lit</u> | ◦ Check at LEAST two CD/CB pumps running | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

4. Verify running CD/CB pump recirc valves are in AUTO.	At 1PM03J:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cue: <i>The 1CB113A and 1CB113B control switches are in auto</i>	o Verify the running CD/CB pump associated 1CB113 is in AUTO	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Place the FW Reg Valves to ZERO demand.	At 1PM04J, place in manual and lower demand to ZERO:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cue: <i>(for each valve) The controller for 1FW5_0 is in manual</i>	o 1FW510	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	o 1FW520			
Cue: <i>(after/as demand is lowered) The controller for 1FW5_0 is at zero demand</i>	o 1FW530			
	o 1FW540			
6. Place the FW Bypass Reg Valves to ZERO demand.	At 1PM04J, place in manual and lower demand to ZERO:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cue: <i>(for each valve) The controller for 1FW5_0A is in manual</i>	o 1FW510A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	o 1FW520A			
Cue: <i>(after/as demand is lowered) The controller for 1FW5_0A is at zero demand</i>	o 1FW530A			
	o 1FW540A			
7. Place the FW tempering flow control valves to ZERO demand.	At 1PM04J, place in manual and lower demand to ZERO:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cue: <i>(for each valve) The controller for 1FW034_ is in manual</i>	o 1FW034A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	o 1FW034B			
Cue: <i>(after/as demand is lowered) The controller for 1FW034_ is at zero demand</i>	o 1FW034C			
	o 1FW034D			

*8. Depress both FW Isolation reset pushbuttons.	At 1PM06J depress:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cue: <i>The Train 'A' FWI reset pushbutton has been depressed</i>	• Train 'A' FW Isolation reset pushbutton	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cue: <i>The Train 'B' FWI reset pushbutton has been depressed</i>	• Train 'B' FW Isolation reset pushbutton			
*9. Depress both FW Isolation Aux relay reset pushbuttons.	At 1PM06J depress:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cue: <i>The Train 'A' FWI Aux Relay reset pushbutton has been depressed</i>	• Train 'A' FW Isolation Aux Relay reset pushbutton	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cue: <i>The Train 'B' FWI Aux Relay reset pushbutton has been depressed</i>	• Train 'B' FW Isolation Aux Relay reset pushbutton			
10. Check FW isolation Aux relay lights not lit.	At 1PM06J, check:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cue: <i>The Train 'A' FWI Aux Relay 'RED' light is not lit</i>	o Train 'A' FW Isolation Aux Relay lightt not lit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cue: <i>The Train 'B' FWI Aux Relay 'RED' light is not lit</i>	o Train 'B' FW Isolation Aux Relay lightt not lit			

NOTE

Candidate may request local start of Auxiliary Oil Pump(AOP), direct candidate to call the WEC at 4155 and request local start of (AOP). Simulator operator will start the AOP..

*11. Start the S/U FW pump.	At 1PM04J:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cue: <i>The 1FW059 'RED' light is lit</i>	• Open 1FW059	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cue: <i>The 1FW076 control switch is in modulate and the associate 'RED' light is lit</i>	• Place 1FW076 in modulate and the valve opens			
Cue: <i>The S/U FW pump 'RED' light is lit</i>	• Start the S/U FW pump			
*12. Establish FW tempering flow.	At 1PM04J:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cue: <i>(for each valve) The 1FW0354_ 'GREEN' light is lit</i>	• Open 1FW035A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	• Open 1FW035B			
	• Open 1FW035C			
	• Open 1FW035D			
Cue: <i>(for each valve) The 1FW0354_ shows dual indication</i>	• Throttle open 1FW034A			
	• Throttle open 1FW034B			
Cue: <i>(if asked, for each valve) The controller for 1FW034_ indicates 90 gpm flow</i>	• Throttle open 1FW034C			
	• Throttle open 1FW034D			

13. Check SG levels stable or increasing.

At 1PM04J, check (or via HMI):

☐☐☐

o SG levels stable or increasing

☐☐☐

o If feedwater flow is NOT sufficient

• Trip main FW pumps and close the associated recirc valves

o 1FW012A

o 1FW012B

o 1FW012C

Cue: All four SG levels are increasing slowly

Cue: This JPM is completed

RECORD STOP TIME _____

COMMENTS:

JOB PERFORMANCE MEASURE

TASK CONDITIONS:

1. You are the unit NSO.
2. Unit 1 is in Mode 1.
3. All systems and controls are in automatic.
4. 120 gpm letdown is in service.
5. Seal Injection filters were just swapped from 1B to 1A

INITIATING CUES:

1. The US directs you to perform 1BOSR 5.5.1-1, Seal Injection Flow Verification Monthly Surveillance for the 1A CV Pump.
2. The SM has signed and dated the data package cover sheet.

JOB PERFORMANCE MEASURE

Rev. 3, 7/17/2001

TASK TITLE: Perform RCS Controlled Leakage Monthly Surveillance

JPM No.: N-72a

TPO No: IV.C.RC-10

K&A No.: 004A4.11

K&A IMP. 3.4/3.3

TRAINEE: _____

DATE: ____/____/____

The Trainee: PASSED _____ this JPM

TIME STARTED: _____

FAILED _____

TIME FINISHED: _____

EVALUATION METHOD: PERFORM _____ SIMULATE _____

LOCATION: IN PLANT _____ SIMULATOR _____

MATERIALS:

Copy of 1BOSR 5.5.1-1

GENERAL REFERENCES:

1. 1BOSR 5.5.1-1, Seal Injection Flow Verification Monthly Surveillance (Rev. 2)
2. Tech Specs, Figure 3.5.5-1, Seal Injection Flow Limits (Amendment 106)

TASK STANDARDS:

Perform actions necessary to complete a seal injection flow verification monthly surveillance.

TASK CONDITIONS:

1. You are the unit NSO.
2. Unit 1 is in Mode 1.
3. All systems and controls are in automatic.
4. 120 gpm letdown is in service.
5. Seal Injection filters were just swapped for 1B to 1A

INITIATING CUES:

1. The US directs you to perform 1BOSR 5.5.1-1, Seal Injection Flow Verification Monthly Surveillance.
2. The SM has signed and dated the data package cover sheet.

CRITICAL ELEMENTS: (*) 3, 6, 7, 8, 9, 11, 12

APPROXIMATE COMPLETION TIME: 15 minutes

RECORD START TIME

NOTE

Provide candidate with a copy of 1BOSR 5.5.1-1.

NOTE

If this JPM is given on the simulator, only the cues underlined are required to be given to the candidate.

1. ☐ Ensure all applicable prerequisites, precautions, and limitations and actions are satisfactorily addressed.

Cue: Permission to perform has been granted

RCS pressure = 2235 psig

1CV8369A-D have been set for full RCS pressure

1A CV pump run light is LIT

- CHECK RCS pressure between 2215 and 2255 psig
- Check 1CV8369A-D set for full RCS Pressure
- Check only 1 CV pump running



Record Initial Conditions

Cue: Unit in mode 3

1A CV pump run light is LIT

1CV121 is in auto

P0480=2235 P0481=2234

P0482=2236 P0483=2235

Record Initial Conditions

- Unit Mode
- CV pump Status
- 1CV121 Status
- Pressurizer Pressure
- Calculate Average Pressure



*3. Lineup CV system for leakrate

Cue: 1CV 121 is in MANUAL

- PLACE 1CV 121 in MANUAL

NOTE

Notification to the SM of failure to meet acceptance criteria can be made at any time during any of the following steps.

NOTE

WHEN the SM or his designee is notified that the acceptance criteria for the surveillance has NOT been met, provide the following cue:

Cue: The SM understands the LCOAR for RCS controlled leakage should be entered.

☐

4 ☐ Record data

RECORD:

Cue: 1A RCP = 10.2 gpm

○ 1A RCP seal injection
1FI-145A ____gpm

Cue: 1B RCP = 10 gpm

○ 1B RCP seal injection
1FI-144A ____gpm

Cue: 1C RCP = 10.2 gpm

○ 1C RCP seal injection
1FI-143A ____gpm

Cue: 1D RCP = 10.1 gpm

○ 1D RCP seal injection
1FI-142A ____gpm

Cue: Total Injection flow is 40.5
gpm

• Total Injection Flow
____gpm

☐

5. ☐ Record ☐ Data

Cue: 1CV121 is 38% open

• 1CV121 position ____%
Open

Cue: Charging header pressure = 2310
psig

• Charging header pressure
1PI-120A ____psig

Cue: RCS pressure = 2235 psig

• Avg RCS pressure____
psig

*6 ☐ Calculate charging header / RCS
D/P

• CALCULATE charging
pump discharge header
pressure to RCS pressure
D/P_____

Cue: 75 psid

*7 ☐ Verify ☐ total RCP seal injection flow

• DETERMINE total RCP
seal injection flow is NOT
within acceptance region
of TS Figure 3.5.5-1

*☐ Notify☐ SM that total RCP seal injection flow is NOT within acceptance region

- NOTIFY SM that seal injection flow is NOT within acceptance region

Cue: *The SM understands that seal injection flow is NOT within acceptance region.*

- Go to Section F.4 to adjust injection flow

NOTE

Alternate Path starts here. Operator is directed to proceed to step F.4 of the procedure to adjust seal injection flow. Simulator operator will need to adjust 1CV8369A/B/C/D as directed by the Operator.

CUE: There are sufficient operators in the field to complete adjustments quickly call 4155 to contact NLO to perform adjustments.

*9☐ Adjustment of seal injection for 1A CV pump☐

- ADJUST 1CV121 to 100% open

Cue: *1CV121 is full open*

- Adjust 1CV182 and seal injection throttle valves as necessary to within limits of T.S. Figure 3.5.5-1

Cue: *SIM OPERATOR
1CV8369A/B/C/D adjusted (as requested)*

1. Record data

RECORD:

Cue: 1A RCP = 7.8 gpm

○ 1A RCP seal injection
1FI-145A ____gpm

Cue: 1B RCP = 7.8 gpm

○ 1B RCP seal injection
1FI-144A ____gpm

Cue: 1C RCP = 7.8 gpm

○ 1C RCP seal injection
1FI-143A ____gpm

Cue: 1D RCP = 7.8 gpm

○ 1D RCP seal injection
1FI-142A ____gpm

Cue: Total Injection flow is 31.2
gpm

• Total Injection Flow
____gpm

• Charging header pressure
_PI-120A ____psig

Cue: Charging header pressure
= 2340 psig

• RCS pressure____
psig

Cue: RCS pressure = 2235 psig

*1. Calculate charging header / RCS
D/P

• CALCULATE charging
pump discharge header
pressure to RCS pressure
D/P____

Cue: 105 psid

*2. Verify total RCP seal injection
flow

• DETERMINE total RCP
seal injection flow is
within acceptance region
of TS Figure 3.5.5-1

1. Adjust 1CV12 to establish
normal charging and seal injection
flows

Reestablish normal charging
and seal injection flows

**Cue: Normal charging and seal
injection flow established**

• Adjust 1CV121 and
1CV182 to establish
normal charging and seal
injection flow

NOTE:

When the Operator has started to adjust charging flow to begin trending Pressurizer level back to normal level, the intent of step 14 is satisfied.

1. ☐ Adjust 1FK121 to maintain normal Pressurizer level.

- Adjust 1CV121 to maintain Pressurizer level

Cue: *Pressurizer level is stable in normal range.*

Cue: *This JPM is completed*

RECORD STOP TIME _____

COMMENTS:

JOB PERFORMANCE MEASURE

TASK CONDITIONS:

1. You are an extra NSO, there are no non-licensed operators available.
2. Unit-1 is in Mode 3.
3. A fault on a 345KV line has caused the SATs to trip.
4. Bus 141 is energized by Diesel Generator 1A.
5. Bus 142 Bus Alive light is NOT LIT.
6. Step 1 of 1BOA ELEC-3, Attachment D is complete.

INITIATING CUES:

The Unit Supervisor directs you to perform a local start of Diesel Generator 1B using 1BOA ELEC-3, Attachment D and report when the 1B Diesel Generator is running.

JOB PERFORMANCE MEASURE

Rev. 0, 8/16/2002

TASK TITLE: Local Abnormal Start of a D/G (cranking air valves closed)

JPM No.: N-35c

TPO No: IV.D.OA-34

K&A No.: 064A4.01

K&A IMP. 4.0 / 4.3

TRAINEE: _____

DATE: ____/____/____

The Trainee: PASSED _____ this JPM

TIME STARTED: _____

FAILED _____

TIME FINISHED: _____

EVALUATION METHOD: PERFORM _____ SIMULATE _____

LOCATION: IN PLANT X

MATERIALS:

Copy of 1BOA ELEC-3, Attachment D

GENERAL REFERENCES:

1BOA ELEC-3, Loss of 4KV ESF Bus (Rev. 101)

TASK STANDARDS:

Perform the actions necessary to complete a local abnormal start of a diesel generator.

TASK CONDITIONS:

1. You are an extra NSO, there are no non-licensed operators available.
2. Unit-1 is in Mode 3.
3. A fault on a 345KV line has caused the SATs to trip.
4. Bus 141 is energized by Diesel Generator 1A.
5. Bus 142 Bus Alive light is NOT LIT.
6. Step 1 of 1BOA ELEC-3, Attachment D is complete.

INITIATING CUES:

The Unit Supervisor directs you to perform a local start of Diesel Generator 1B using 1BOA ELEC-3, Attachment D and report when the 1B Diesel Generator is running.

CRITICAL ELEMENTS: (*) 7 OR 10 & 13

APPROXIMATE COMPLETION TIME: 20 minutes

RECORD START TIME _____

1. **Refer to 1BOA ELEC-3, Attachment D, Local Start of 1B DG**
- LOCATE and OPEN 1BOA ELEC-3, Attachment D
- ☐ ☐ ☐

Note: This step may be performed at any time.

NOTE

Provide the candidate with a copy of 1BOA ELEC-3, Attachment D.

NOTE

Simulate obtaining keys from Center Desk.

2. Get keys for local diesel generator operation
- ☐ ☐ ☐

GET keys from center desk:

Cue: Keys have been obtained

- U1 PRI-5 keys
- B-core masters

NOTE

The candidate may request which local annunciators are in alarm at any time, provide the following cue.

Cue: Annunciators B-6 and E-3 are LIT and the Unit Avail For Emerg Start light is NOT LIT

3. Check diesel generator shutdown



Cue: *The Running Idle light is NOT LIT*

- CHECK Running Idle light NOT LIT

Cue: *The Emergency Stop pushbutton is DEPRESSED*

- DEPRESS Emergency Stop pushbutton

NOTE

For cueing steps 4, 5, 6, 7, 8, and 10 for DC control power, starting air receiver pressure, *cranking air valves after realignment*, and support systems status, have the examinee use actual values if the diesel generator is operable. If the diesel generator is inoperable or the actual parameter is out of spec, give the listed cues after the examinee locates the component.

4. Check DC control power available

CHECK lights LIT:



Cue: *DC Power On/Bus #1 light is LIT*

- DC POWER ON/BUS #1

Cue: *DC Power On/Bus #2 light is LIT*

- DC POWER ON/BUS #2

NOTE

1PI-DG096B/097B are located at the air receivers, NOT at 1PL08J. If the examinee uses the pressure indicators on 1PL08J, then note that on **Self Check Standard – *Accurately locate and manipulate components/controls.***

5. Check starting air available

CHECK at least one air receiver >100 psig:



Cue: *1PI- DG096B = 250 psig*

- Left bank 1PI-DG096B

Cue: *1PI-DG097B = 250 psig*

- Right bank 1PI-DG097B

NOTE

The faulted portion of this JPM starts here and occurs with the last two cues for the status of the Left and Right cranking air valves.

6. Check support system status
- VERIFY air receiver outlet valves OPEN: ☐ ☐ ☐
 - Cue: 1SA140B operating handle is parallel to the pipe** ◦ 1SA140B
 - AND
 - Cue: 1SA140D operating handle is parallel to the pipe** ◦ 1SA140D
 - Cue: The turning gear is DISENGAGED** ◦ VERIFY turning gear DISENGAGED
 - Cue: Fuel rack manual trip lever is LATCHED IN THE VERTICAL POSITION** ◦ VERIFY fuel rack manual trip lever LATCHED IN VERTICAL POSITION
 - Cue: Left cranking air handle is pointing right (OFF)** VERIFY left bank control air lineup:
 - Cue: Left non-failsafe air handle is pointing right (OFF)**
 - Cranking air ON
 - Non-fail safe air ON

NOTE

Opening either cranking air valve in the next step would provide sufficient starting air for the diesel generator, however both are closed bullets in the procedure. **Opening either the right or left bank would satisfy one of the critical elements (Either step 7 OR 10 is required).**

*7. Correct Left bank misalignment.	Align Left Bank Control Air: <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Cue: Left cranking air handle is pointing up	<ul style="list-style-type: none"> • Cranking air ON
Cue: Left non-failsafe air handle is pointing up	<ul style="list-style-type: none"> ◦ Non-fail safe air ON
Cue: Left air drain handle is pointing right	<ul style="list-style-type: none"> ◦ Air drain CLOSED
8. Check support systems status	Verify: <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Cue: The fuel head tank's lower bull's eye is FULL	<ul style="list-style-type: none"> ◦ CHECK fuel head tank lower bull's eye FULL
Cue: Oil level is WITHIN THE SIGHTGLASS	<ul style="list-style-type: none"> ◦ VERIFY overspeed governor oil level WITHIN SIGHTGLASS
	VERIFY electro-hydraulic governor settings:
<u>Cue: Speed droop is set to ZERO</u>	<ul style="list-style-type: none"> ◦ Speed droop = 0
Cue: Load limit is at MAX FUEL	<ul style="list-style-type: none"> ◦ Load limit = MAX FUEL
Cue: Speed is set to 12.96	<ul style="list-style-type: none"> ◦ Speed - per LOCAL PLACARD on 1PL08J
Cue: Oil level is WITHIN THE SIGHTGLASS	<ul style="list-style-type: none"> ◦ Oil level WITHIN SIGHTGLASS
Cue: Output shaft is at MAX FUEL	<ul style="list-style-type: none"> ◦ Output shaft = MAX FUEL

9. Continue to check status of remaining support systems	VERIFY right bank control air lineup:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cue: <i>Right cranking air handle is pointing right.</i>	◦ Cranking air ON			
Cue: <i>Right non-failsafe air handle is pointing right.</i>	◦ Non-failsafe air ON			
*10. Correct Right bank misalignment	Align Right Bank Control Air:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cue: <i>Right cranking air handle is pointing up.</i>	• Cranking air ON			
Cue: <i>Right non-failsafe air handle is pointing up.</i>	◦ Non-failsafe air ON			
Cue: Right air drain handle is pointing right.	◦ Air drain CLOSED			
11. Continue to check status of remaining support systems	VERIFY:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cue: <i>The lube oil sump level is WITHIN SIGHTGLASS</i>	◦ CHECK lube oil sump level WITHIN SIGHTGLASS			
Cue: <i>Jacket water expansion tank level is WITHIN SIGHTGLASS</i>	◦ VERIFY Jacket water standpipe level WITHIN SIGHTGLASS			
Cue: The overspeed butterfly valve is OPEN	◦ VERIFY overspeed butterfly valve OPEN			

12. Prepare for 1B D/G start.

☐ ☐ ☐

Cue: Unit 1 NSO verifies that Bus 142 is still DEAD

- CONTACT Unit 1 to check Bus 142 DEAD

Cue: Diesel generator is CLEAR of personnel

- VERIFY diesel generator clear of personnel

REQUEST Unit 1 verify DG 1B controls are ALIGNED FOR AUTO START:

Cue: Unit 1 NSO verifies that DG 1B start switch is in the AFTER TRIP position

- DG 1B start switch in AFTER TRIP

Cue: Unit 1 NSO verifies that ACB 1423 control switch is in the AFTER TRIP position

- ACB 1423 control switch in AFTER TRIP

Cue: Annunciator and system reset switch has been placed in RESET and RELEASED

- RESET Annunciator and System Reset switch

***13. Start 1B Diesel Generator**

☐ ☐ ☐

Cue: The Emergency Stop Reset pushbutton has been DEPRESSED

- DEPRESS
Emergency Stop
Reset pushbutton

Cue: Engine is CRANKING

Cue: Engine speed is 600 rpm

- CHECK engine
cranking

Cue: 1SX169B 'RED' light is LIT

- CHECK engine speed > 590 rpm

Cue: The Running Loaded light is LIT

- VERIFY 1SX169B OPEN
- CHECK Running Loaded light LIT

14. Report to Unit Supervisor that the 1B Diesel Generator is running

◦

Inform Unit Supervisor of successful local start of 1B Diesel Generator.



Cue: *The Unit Supervisor acknowledges 1B Diesel Generator running*

Cue: *This JPM is completed*

RECORD STOP TIME _____

COMMENTS:

JOB PERFORMANCE MEASURE

TASK CONDITIONS:

5. You are an extra NSO, there are no non-licensed operators available.
6. Unit-2 is in Mode 3.
7. A fault on a 345KV line has caused the SATs to trip.
8. Bus 241 is energized by Diesel Generator 2A.
7. Bus 242 Bus Alive light is NOT LIT.
8. Step 1 of 2BOA ELEC-3, Attachment D is complete.

INITIATING CUES:

The Unit Supervisor directs you to perform a local start of Diesel Generator 2B using 2BOA ELEC-3, Attachment D and report when the 2B Diesel Generator is running.

JOB PERFORMANCE MEASURE

Rev. 0, 8/16/2002

TASK TITLE: Local Abnormal Start of a D/G (cranking air valves closed) (U2 Version)

JPM No.: N-35cU2

TPO No: IV.D.OA-34

K&A No.: 064A4.01

K&A IMP. 4.0 / 4.3

TRAINEE: _____

DATE: ____/____/____

The Trainee: PASSED _____ this JPM

TIME STARTED: _____

FAILED _____

TIME FINISHED: _____

EVALUATION METHOD: PERFORM _____ SIMULATE _____

LOCATION: IN PLANT X

MATERIALS:

Copy of 2BOA ELEC-3, Attachment D

GENERAL REFERENCES:

2BOA ELEC-3, Loss of 4KV ESF Bus (Rev. 101)

TASK STANDARDS:

Perform the actions necessary to complete a local abnormal start of a diesel generator.

TASK CONDITIONS:

1. You are an extra NSO, there are no non-licensed operators available.
2. Unit-2 is in Mode 3.
3. A fault on a 345KV line has caused the SATs to trip.
4. Bus 241 is energized by Diesel Generator 2A.
7. Bus 242 Bus Alive light is NOT LIT.
8. Step 1 of 2BOA ELEC-3, Attachment D is complete.

INITIATING CUES:

The Unit Supervisor directs you to perform a local start of Diesel Generator 2B using 2BOA ELEC-3, Attachment D and report when the 2B Diesel Generator is running.

CRITICAL ELEMENTS: (*) 7 OR 9 & 11

APPROXIMATE COMPLETION TIME: 20 minutes

RECORD START TIME _____

1. **Refer to 2BOA ELEC-3, Attachment D, Local Start of 2B DG**

- LOCATE and OPEN 2BOA ELEC-3, Attachment D

☐☐☐

Note: This step may be performed at any time.

NOTE

Provide the candidate with a copy of 2BOA ELEC-3, Attachment D.

NOTE

Simulate obtaining keys from Center Desk.

2. Get keys for local diesel generator operation

☐☐☐

GET keys from center desk:

Cue: Keys have been obtained

- U2 PRI-5 keys
- B-core masters

NOTE

The candidate may request which local annunciators are in alarm at any time, provide the following cue.

Cue: Annunciators B-6 and E-3 are LIT and the Unit Avail For Emerg Start light is NOT LIT

3. Check diesel generator shutdown



Cue: *The Running Idle light is NOT LIT*

- CHECK Running Idle light NOT LIT

Cue: *The Emergency Stop pushbutton is DEPRESSED*

- DEPRESS Emergency Stop pushbutton

NOTE

For cueing steps 4, 5, 6, 7, 8 and 9 for DC control power, starting air receiver pressure, *cranking air valves after realignment*, and support systems status, have the examinee use actual values if the diesel generator is operable. If the diesel generator is inoperable or the actual parameter is out of spec, give the listed cues after the examinee locates the component.

4. Check DC control power available CHECK lights LIT:



Cue: *DC Power On/Bus #1 light is LIT*

- DC POWER ON/BUS #1

Cue: *DC Power On/Bus #2 light is LIT*

- DC POWER ON/BUS #2

NOTE

2PI-DG096B/097B are located at the air receivers, NOT at 2PL08J. If the examinee uses the pressure indicators on 2PL08J, then note that on **Self Check Standard** – *Accurately locate and manipulate components/controls*.

5. Check starting air available

CHECK at least one air
receiver >100 psig:



Cue: 2PI- DG096B = 250 psig

◦ Left bank 2PI-DG096B

Cue: 2PI-DG097B = 250 psig

◦ Right bank 2PI-DG097B

◦

NOTE

The faulted portion of this JPM starts here and occurs with the last two cues for the status of the Left and Right cranking air valves.

6. Check support system status	<ul style="list-style-type: none"> ◦ VERIFY air receiver outlet valves OPEN: <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Cue: 2SA140B operating handle is parallel to the pipe	◦ 2SA140B
Cue: 2SA140D operating handle is parallel to the pipe	AND
Cue: The fuel head tank's lower bull's eye is FULL	◦ 2SA140D
	◦ CHECK fuel head tank lower bull's eye FULL
Cue: Speed droop is set to ZERO	VERIFY electro-hydraulic governor settings:
Cue: Load limit is at MAX FUEL	◦ Speed droop = 0
Cue: Speed is set to 9.70	◦ Load limit = MAX FUEL
Cue: Oil level is WITHIN THE SIGHTGLASS	◦ Speed - per LOCAL PLACARD on 2PL08J
Cue: Output shaft is at MAX FUEL	◦ Oil level WITHIN SIGHTGLASS
Cue: Oil level is WITHIN THE SIGHTGLASS	◦ Output shaft = MAX FUEL
	◦ VERIFY overspeed governor oil level WITHIN SIGHTGLASS
Cue: The turning gear is DISENGAGED	◦ VERIFY turning gear DISENGAGED
Cue: Fuel rack manual trip lever is LATCHED IN THE VERTICAL POSITION	◦ VERIFY fuel rack manual trip lever LATCHED IN VERTICAL POSITION
Cue: Left cranking air handle is pointing right (OFF)	VERIFY left bank control air lineup:
Cue: Left non-fail safe air handle is pointing right (OFF)	◦ Cranking air ON
	◦ Non-failsafe air ON

NOTE

Opening either cranking air valve in the next step would provide sufficient starting air for the diesel generator, however both are closed bullets in the procedure. **Opening either the right or left bank would satisfy one of the critical elements (Either step 7 OR 9 is required).**

***7. Correct Left bank misalignment.** Align Left Bank Control Air: ☐ ☐ ☐

Cue: Left cranking air handle is pointing up • Cranking air ON

Cue: Left non-failsafe air handle is pointing up ◦ Non-fail safe air ON

Cue: Left air drain handle is pointing right ◦ Air drain CLOSED

8. Check status of remaining support systems Verify: ☐ ☐ ☐

Cue: Jacket water expansion tank level is WITHIN SIGHTGLASS ◦ Jacket water standpipe level WITHIN SIGHTGLASS

Cue: The overspeed butterfly valve is OPEN ◦ VERIFY overspeed butterfly valve OPEN

Cue: The lube oil sump level is WITHIN SIGHTGLASS ◦ CHECK lube oil sump level WITHIN SIGHTGLASS

VERIFY right bank control air lineup:

Cue: Right cranking air handle is pointing right ◦ Cranking air ON

◦ Non-failsafe air ON

Cue: Right non-failsafe air handle is pointing right

*9. Correct Right bank misalignment	Align Right Bank Control Air:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cue: <i>Right cranking air handle is pointing up.</i>	<ul style="list-style-type: none"> • Cranking air ON 			
Cue: <i>Right non-failsafe air handle is pointing up.</i>	<ul style="list-style-type: none"> ◦ Non-failsafe air ON ◦ Air drain CLOSED 			
Cue: Right air drain handle is pointing right.				
10. Prepare for 2B D/G start.	◦ CONTACT Unit 2 to check Bus 242 DEAD	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cue: <i>Unit 2 NSO verifies that Bus 242 is still DEAD</i>	◦ VERIFY diesel generator clear of personnel			
Cue: <i>Diesel generator is CLEAR of personnel</i>	REQUEST Unit 2 verify DG 2B controls are ALIGNED FOR AUTO START:			
	◦ DG 2B start switch in AFTER TRIP			
Cue: <i>Unit 2 NSO verifies that DG 2B start switch is in the AFTER TRIP position</i>	◦ ACB 2423 control switch in AFTER TRIP			
Cue: <i>Unit 2 NSO verifies that ACB 2423 control switch is in the AFTER TRIP position</i>	◦ <u>RESET</u>			
Cue: <i>Annunciator and system reset switch has been placed in RESET and RELEASED</i>	<u>Annunciator and System Reset switch</u>			

*11. Start 2B Diesel Generator



Cue: *The Emergency Stop Reset pushbutton has been DEPRESSED*

- DEPRESS
Emergency Stop
Reset pushbutton

Cue: *Engine is CRANKING*

- CHECK engine
cranking

Cue: Engine speed is 600 rpm

Cue: 2SX169B 'RED' light is LIT

- CHECK engine speed > 590 rpm
- VERIFY 2SX169B OPEN
- CHECK Running Loaded light LIT

Cue: *The Running Loaded light is LIT*

12. Report to Unit Supervisor that the 2B Diesel Generator is running

- Inform Unit Supervisor of successful local start of 2B Diesel Generator.



Cue: *The Unit Supervisor acknowledges 2B Diesel Generator running*

Cue: *This JPM is completed*

RECORD STOP TIME _____

COMMENTS:

JOB PERFORMANCE MEASURE

TASK CONDITIONS:

3. You are the opposite Unit Unit Assist NSO
4. A The unit is in Mode 1. Unit _ Reactor Trip has just occurred
5. The _B Aux Feedwater Pump is OOS
6. 120 VAC Instrument Bus _11 de-energized concurrent with the Reactor Trip
7. The _A Aux Feedwater Pump has started on Lo-2 Steam Generator level, but the _AF005A, B, C, and D all went closed.

INITIATING CUES:

You have been directed by the Unit _ Unit Supervisor to perform calorimetric per _BOSR 3.1.2-1, using the Plant Process Computer. take LOCAL control of _AF005A, B, C, and D at the Unit _ remote shutdown and establish flow to the Unit _ steam generators at approximately 170 gpm each per Step 1 of Attachment A of _BOA PRI-5.

JOB PERFORMANCE MEASURE

Rev. 07, 87/2531/20012003

TASK TITLE: Perform Calorimetric Using Process Plant Computer LOCAL Control of the _AF005A-D at the Remote Shutdown panel JPM No.: Bj(N-08a941)

TPO No: IV.C.AF-014C.NI-05 K&A No.: 061A2.05015A1.01 K&A IMP. 3.5 1* / 3.85*

TRAINEE: _____

DATE: ____/____/____

The Trainee: PASSED _____ this JPM

TIME STARTED: _____

FAILED _____

TIME FINISHED: _____

EVALUATION METHOD: PERFORM _____ SIMULATE _____

LOCATION: IN PLANT _____ SIMULATOR _____
X _____

MATERIALS:

1. Plant Process Computer
2. Copy of _BOSR 3.1.2-1 Copy of _BOA PRI-5, CONTROL ROOM INACCESSIBILITY UNIT __, rev. 103(U1), rev. 105(U2)

GENERAL REFERENCES:

1. _BOSR 3.1.2-1, Calorimetric Calculation Daily Surveillance (Rev. 8) _BOA PRI-5, CONTROL ROOM INACCESSIBILITY UNIT __, rev. 103(U1), rev. 105 (U2)
2. BAR _-3-D7, AF FLOW CONT SETTING LOW, rev. 4(U1), rev. 2(U2)

TASK STANDARDS:

Perform the actions necessary to access the plant computer and run the calorimetric program. establish LOCAL control of the _AF005 valves at the Remote Shutdown Panel.

TASK CONDITIONS:

1. You are the opposite Unit Assist NSO
 2. A Unit _ Reactor Trip has just occurred
 3. The _B Aux Feedwater Pump is OOS
 4. 120 VAC Instrument Bus _11 de-energized concurrent with the Reactor Trip
 5. The _A Aux Feedwater Pump has started on Lo-2 Steam Generator level, but the _AF005A, B, C, and D all went closed.
-
1. You are the Unit NSO.
 2. The unit is in Mode 1.

INITIATING CUES:

You have been directed by the Unit _ Unit Supervisor to take LOCAL control of _AF005A, B, C, and D at the Unit _ remote shutdown and establish flow to the Unit _ steam generators at approximately 170 gpm each per step 1 of Attachment A of _BOA PRI-5.

You have been directed by the Unit Supervisor to perform a calorimetric per _BOSR 3.1.2-1, using the Plant Process Computer.

CRITICAL ELEMENTS: (*) 3, 5, 6, 9

APPROXIMATE COMPLETION TIME: 11 minutes

NOTE

It is the intention of this JPM that it NOT be simulated but rather actually performed either in the simulator or at the plant.

RECORD START TIME _____

- | | | | | |
|--|--|--------------------------|--------------------------|--------------------------|
| 1. Refer to _BOSR 3.1.2-1,
Calorimetric Calculation Daily
Surveillance_BOA PRI-5 | ◦ LOCATE and OPEN
_BOSR 3.1.2-1_BOA
PRI-5. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|--|--|--------------------------|--------------------------|--------------------------|

Note: *Step 1 may be performed at any time.*

Cue: *All prerequisites and precautions are met*

NOTE

Provide Atrainee with a copy of _BOA PRI-5 is available at the associated Remote Shutdown Panel _BOSR 3.1.2-1. The candidate may elect to print a copy from EDMS prior to proceeding to the Remote Shutdown Panel, if so provide a copy of _BOA PRI-5 Attachment A page 47 of 83 to the candidate.

- | | | | | |
|--|--|--------------------------|--------------------------|--------------------------|
| 2. Data sheet D2 blocks 1 and
2 Proceed to Unit _ Remote
Shutdown Panel. (383 Elev.
Auxiliary Building) | ◦ RECORD: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | ◦ Date/time/name | | | |
| | ◦ Gross MW | | | |
| | ◦ Control bank positions | | | |
| | ◦ Prerequisites met Locate
Unit _ Remote Shutdown
Panel. | | | |

- *3. Data sheet D2 block 3 Identify local controls for _AF005 A-D on _PL04J.

• RECORD NIS powerLocate _PL04J controls for _AF005 A-D.



NOTE

The candidate may elect to not perform the following step as described in the procedure branches to step F.23 when using the process computer. The intention of this JPM is to do the same. Because the branching instruction is contained within a procedure note the trainee may miss the branch. If this happens, **Cue: The Unit Supervisor wants the calorimetric to be performed using the plant process computer.** Caution on page 47 of _BOA PRI-5 for this situation. The step if not performed will result in AF flow actuation when LOCAL control is selected, which is the desired resulting action.

4. Adjust the controller setting to 0 for _AF005A-D on _PL04J.

On OPCON page of HMI computer DEPRESS MENU key Reduce the controller settings to zero for _AF005 A-D on _PL04J.



Cue: (If asked) individual controllers for _AF005A thru D indicate zero. Go to the process computer menu

NOTE

If step 4 was not performed, then selecting LOCAL control in the following step will result in the valves opening to a throttled position, provide the following cue if asked.

Cue: _AF005A thru D left and right GREEN lights are LIT.

*5. Select option "23"
calorimetricLOCAL control for
_AF005A, B, C, D at _PL04J.

- SELECT option 23Place
REMOTE LOCAL
switches in LOCAL at
_PL04J for _AF005A, B,
C, D.

☐☐☐

Cue: *REMOTE LOCAL switches on
_PL04J for _AF005A thru D
are in the LOCAL (RSP)
position.*

Cue: *(If asked and if step 4 was
performed) _AF005A thru D
left GREEN lights are LIT.*

Cue: *(If asked and if step 4 was
NOT performed) _AF005A thru
D left and right GREEN lights
are LIT.*

NOTE

If asked, the intention is to use current data and NOT to manually enter any of the values. The normal setting at the Remote Shutdown Panel is 15%, this should equate to a flow less than 100 gpm, the candidate will have to increase the setting to obtain 170 gpm. A setting of 50% should equate to approx. 170 gpm. Cue the candidate as appropriate for increasing flow as the setting is increased.

*6. Determine type of calorimetric to
useIncrease control setpoint on
_PL04J for _AF005 A thru D.

- SELECT the 10 minute
average long
outputAdjust _AF005 A
thru D controller
setpoints on _PL04J to
obtain approx. 170 gpm
AF flow to each steam
generator.

☐☐☐

Cue: *(If asked) There are no flow
inconsistenciescontroller
setpoints on _PL04J for
_AF005A-D are are set to
(setting described by
candidate)*

87. Verify _A train SG blowdown flowAF flow to steam generators indicated on _PL04J.

Cue: Radwaste operator reports that blowdown flows are_PL04J _FI-AF011B, 013B, 015B, and 017B indicate approximately 170 gpm (same as values in computer)

Cue: This JPM is completed.

- Verify _A train AF flow established to Unit _ steam generators, _PL04J indications or contact unit.
- CONTACT radwaste to verify SG blowdown flow



RECORD STOP TIME _____

COMMENTS:

JOB PERFORMANCE MEASURE

TASK CONDITIONS:

1. You are an extra NSO, there are no non-licensed operators available. You are a Non-Licensed Operator.
2. A fire exists in the _B Diesel Generator Aux Feed Pump room as determined by an alarm at _PM09J and local report.
3. Automatic actuation of CO₂ to the _B Aux Feed Pump Diesel Generator room has failed.

INITIATING CUES:

The Fire Chief directs you to manually initiate CO₂ to the _B Aux Feed Pump Diesel Generator room using BOP FP-22.

JOB PERFORMANCE MEASURE

Rev. 5, 10/01/20020, 11/14/2003

TASK TITLE: Operate the Fire Detection/Alarm
Equipment (without control power)

JPM No.: N-949a

TPO No.: IV.C.FP-02

K&A No.: 086A2.04

K&A IMP. 3.3/3.9

TRAINEE: _____

DATE: _____

The Trainee PASSED _____ this JPM

TIME STARTED: _____

FAILED _____

TIME FINISHED: _____

EVALUATION METHOD: PERFORM _____ SIMULATE _____

LOCATION: IN PLANT X

MATERIALS:

1. Copy of BOP FP-22
2. Copy of BOP FP-22A20 22A27 as appropriate
3. Copy of BOP FP-22A25 22A29 as appropriate

GENERAL REFERENCES:

1. BOP FP-22, Manual Operation of the Carbon Dioxide and Halon Fire Suppression Systems (Rev. 5)
2. BOP FP-22A2022A27, Manual Initiation of CO₂ to 1B Aux Feed Pump Diesel Generator Room (Rev. 0)
3. BOP FP-22A2522A29, Manual Initiation of CO₂ to 2B Aux Feed Pump Diesel Generator Room (Rev. 0)

TASK STANDARDS:

Take the actions necessary to manually initiate CO₂ to the _B Aux Feed Pump Diesel Generator room.

TASK CONDITIONS:

1. You are an extra NSO, there are no non-licensed operators available. You are a Non-Licensed Operator.
2. A fire exists in the _B Aux Feed Pump Diesel Generator room as determined by an alarm at _PM09J and local report.
3. Automatic actuation of CO₂ to the _B Aux Feed Pump Diesel Generator room has failed.

INITIATING CUES:

The Fire Chief directs you to manually initiate CO₂ to the _B Aux Feed PumpDiesel Generator room using BOP FP-22.

CRITICAL ELEMENTS: (*) 512, 147, 15, & 178

APPROXIMATE COMPLETION TIME: 14 20 minutes

PERFORMANCE CHECKLIST

STANDARDS

SAT

UNSAT

N/A

RECORD START TIME _____

1. Refer to BOP FP-22, Manual Operation of the Carbon Dioxide and Halon Fire Suppression Systems

- LOCATE and OPEN BOP FP-22

☐☐☐

Cue: *All prerequisites have been met*

Note: A Limitation and Action for BOP FP-22 states “The Fire Brigade shall be activated in situations requiring CO₂ system actuation. At any time candidate requests (including successful actuation in step 10 of the JPM):

Cue: *The Fire Brigade is being activated.*

NOTE

Provide the examinee with a copy of BOP FP-22.

2. **Refer to Section G to determine attachment**

DETERMINE attachment:

☐☐☐

Cue: *:(if requested) The detection zone in alarm is _D-71 12*

- FP-22A20 22A27 for 1B
Aux Feed PumpDG
1BRoom

Note: (If requested), local panel has control power indication

- FP-22A25 22A29 for 2B
Aux Feed PumpDG
Room2B

NOTE

Provide the examinee with a copy of FP-22A20 22A27 for DG 11B Aux Feed Pump OR FP-22A25 22A29 for DG 2B Aux Feed Pump as appropriate.

3. Request MCR to contact Security REQUEST Center Desk to: ☐ ☐ ☐

Cue: Security has verified the room is clear of personnel ° Call Security to ensure room clear of personnel

NOTE: This is a prerequisite, and was met in JPM step 1.

4. **Request a page announcement.** REQUEST Center Desk to: ☐ ☐ ☐

° Page plant for pending initiation

Cue: Page announcement has been made

*5. **Verify open CO2 block valve.** ☐ ☐ ☐

Cue: CO5022B CO5024 is "PERPENDICULAR" to the piping (CLOSED) ° VERIFY/OPEN CO50224B

Cue: (after re-alignment) CO5024 is 'PARALLEL' PARALLEL' to the piping (OPEN)

6. **Verify Abort Switch not in Abort.** ☐ ☐ ☐

° VERIFY HS-CO0034 NOT in ABORT

Cue: HS-CO0034 is NOT in ABORTAUTOMATIC

<u>PERFORMANCE CHECKLIST</u>	<u>STANDARDS</u>	<u>SAT</u>	<u>UNSAT</u>	<u>N/A</u>
<p>*7. Pull down the CO2 push button station cover.</p> <p>Cue: <u>HS-CO0032 button cover is DOWN</u></p> <p>OR</p> <p>Cue: <u>HS-CO0303 button cover is DOWN</u></p> <p>Cue: <i>(if asked) The red light associated with the button is offon</i></p>	<p>PULL DOWN cover for:</p> <ul style="list-style-type: none"> ◦ <u>HS-CO002 CO032</u> <p>OR</p> <ul style="list-style-type: none"> ◦ <u>HS-CO003CO033</u> 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>*8. Locally actuate system</p> <p>Cue: <u>HS-CO002 CO032 button is DEPRESSED</u></p> <p>OR</p> <p>Cue: <u>HS-CO0033 button is DEPRESSED</u></p>	<p>DEPRESS CO₂ button:</p> <ul style="list-style-type: none"> ◦ <u>HS-CO002 CO032</u> <p>OR</p> <ul style="list-style-type: none"> ◦ <u>HS-CO003CO033</u> 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>9. Verify system actuates locally.</p> <p>Cue: <i>The CO₂ System Actuated light is NOT LIT on CO03JCO14J</i></p> <p>NOTE: If the examinee elects to try the other push button – repeat this cue.</p>	<p>At <u>CO03J</u>:</p> <ul style="list-style-type: none"> ◦ Verify CO₂ System Actuated light LIT 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

PERFORMANCE CHECKLIST

STANDARDS

SAT

UNSAT

N/A

10. Verify alarm received on _PM09J.

VERIFY:

☐☐☐

Cue: *The Unit NSO reports that the suppression alarm was NOT _S-41 was received on _PM09J. The Fire Brigade is being activated.*

◦ Suppression alarm on _PM09J (_S-41)

Cue: *This JPM is completed* NOTE:
If the examinee elects to try the other push button – repeat this cue.

RECORD STOP TIME _____

COMMENTS: