

JOB PERFORMANCE MEASURE

TASK CONDITIONS:

1. You are a Non-Licensed Operator.
2. The control switch for 2AF017A is not functioning.
3. 2BEP-0 is in progress, due to a LOOP.
4. Unit 2 CST has been damaged by a tornado.

INITIATING CUES:

1. The US has directed you locally open 2AF017A, at MCC 231X3, per 2BOA ELEC-5, Attachment C.
2. The SM has given you a jumper.

JOB PERFORMANCE MEASURE

Rev. 0, 03/20/06

TASK TITLE: Locally Open SX to AF Pump Suction Valve

JPM No.: Plt 100

TPO No:

K&A No.: 061 K1.07

K&A IMP. 3.6/3.8

TRAINEE: _____

DATE: ___/___/___

The Trainee: PASSED _____ this JPM

TIME STARTED: _____

FAILED _____

TIME FINISHED: _____

EVALUATION METHOD: PERFORM _____ SIMULATE ___X___

LOCATION: IN PLANT ___X___

MATERIALS:

1. Electrical jumpers (simulated for In Plant)
2. Copy of 2BOA ELEC-5, Attachment C
3. Safety Equipment

GENERAL REFERENCES:

2BOA ELEC-5, Local Emergency Control of Safe Shutdown Equipment (Rev. 100)

TASK STANDARDS:

Complete the steps necessary to locally open _AF017B.

TASK CONDITIONS:

1. You are a Non-Licensed Operator.
2. The control switch for 2AF017A is not functioning.
3. 2BEP-0 is in progress, due to a LOOP.
4. Unit 2 CST has been damaged by a tornado.

INITIATING CUES:

1. The US has directed you locally open 2AF017A, at MCC 231X3, per 2BOA ELEC-5, Attachment C.
2. The SM has given you a jumper.

CRITICAL ELEMENTS: (*) 3, 4, 5, 6, 7 & 12

APPROXIMATE COMPLETION TIME: 20 minutes

PERFORMANCE CHECKLIST

STANDARDS

SAT

UNSAT

N/A

RECORD START TIME_____

1. Refer to 2BOA ELEC-5,
Attachment C

◦ OPEN 2BOA ELEC-5,
Attachment C

o

o

o

Cue: (if asked) The valve is SX to AF suction valve

Cue: (if asked) The cubicle for the valve is B5 on MCC 231X3

2. Locate proper MCC and cubicle

◦ LOCATE MCC 231X3
Cubicle B5

o

o

o

NOTE

Cubicle location may be given to examinee after they display a method of retrieving this information (e.g. call control room, 'E' L/U's etc.)

(401' M20 for 231X3)

After Cubicle is located, move to a different MCC in a low traffic area.

CAUTION

Do not open breaker or cubicle door on energized MCC breakers!

The rest of this JPM may be continued on an unassigned cubicle, with SM's permission, or simulated using a photo provided.

Protective clothing required is Full Class 3 plus Safety Glasses and Hardhat with Class 2 Face Shield.

*3. Turn breaker Off

At MCC 231X3Cubicle B5:

o

o

o

Cue: Breaker handle is in the 'DOWN' position (OFF)

• Turn breaker OFF

*4. Open cubicle door

At MCC 231X3Cubicle B5:

o

o

o

Cue: Door is OPEN

• OPEN cubicle door

<u>PERFORMANCE CHECKLIST</u>	<u>STANDARDS</u>	<u>SAT</u>	<u>UNSAT</u>	<u>N/A</u>
*5. Install jumper	At MCC 231X3Cubicle B5:	o	o	o
Cue: Jumper is installed between points 2 and 3	<ul style="list-style-type: none"> INSTALL jumper between points 2 and 3 on the terminal board at front of cubicle 			
*6. Override interlock and then turn breaker on	At MCC 231X3Cubicle B5:	o	o	o
Cue: Breaker and door interlock overridden	<ul style="list-style-type: none"> OVERRIDE breaker and door interlock 			
Cue: Breaker handle is in the 'UP' position (ON) and 'M' contactor picks up	<ul style="list-style-type: none"> TURN breaker ON 			
Cue: <u>The 'M' contactor picks up</u>				
*7. Turn breaker off.	At MCC 231X3Cubicle B5:	o	o	o
Cue: <u>'M' contactor has dropped out</u>	<ul style="list-style-type: none"> WHEN 'M' contactor drops out, IMMEDIATELY turn breaker OFF 			
Cue: Breaker handle is in the 'DOWN' position (OFF)				
8. Remove the jumper.	At MCC 231X3Cubicle B5:	o	o	o
Cue: Jumper is removed	<ul style="list-style-type: none"> REMOVE jumper 			
9. Close the cubicle door.	At MCC 231X3Cubicle B5:	o	o	o
Cue: Cubicle door is closed	<ul style="list-style-type: none"> CLOSE cubicle door 			

NOTE

Valve location may be given to examinee after they display a method of retrieving this information (e.g. call the Control Room, "M" lineups, etc.)

(383' M18 for 2AF017A)

Note: Alternate Path Starts here

10. Check Local Valve position	◦	Verify 2AF017A is open	o	o	o
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Cue: Valve is closed

11. Notify Control Room	◦	Control Room notified that 2AF017A is closed	o	o	o
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Cue: Shift Manager directs you to locally open valve 2AF017A

*12. Locally open 2AF017A		Simulate manually opening 2AF017A by:	o	o	o
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Cue: Valve is open

- Depressing the lever (Declutching the motor from the valve)
- and rotating handwheel counter-clockwise.

11. Notify Control Room	◦	Control Room notified that 2AF017A is open	o	o	o
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Cue: This JPM is completed

RECORD STOP TIME_____

COMMENTS:

JOB PERFORMANCE MEASURE

TASK CONDITIONS:

1. You are a Non-Licensed Operator.
2. Unit-__ is experiencing a loss of Essential Service Water.

INITIATING CUES:

The Unit Supervisor has directed you to perform the actions necessary to align FP cooling to the __A Centrifugal Charging pump per __BOA PRI-7, Attachment B.

JOB PERFORMANCE MEASURE

Rev. 02, 03/20/06

TASK TITLE: Align Fire Protection Cooling to a Centrifugal Charging Pump

JPM No.: Plt 200

TPO No: IV.D.OA-69

K&A No.: 086 K1.02

K&A IMP. 2.7/3.2

TRAINEE: _____

DATE: __/__/__

The Trainee: PASSED _____ this JPM

TIME STARTED: _____

FAILED _____

TIME FINISHED: _____

EVALUATION METHOD: PERFORM _____

SIMULATE _____

LOCATION: IN PLANT X

MATERIALS:

None

GENERAL REFERENCES:

_BOA PRI-7, Essential Service Water Malfunction, (Rev. 101 for U1 & Rev 102 for U2)

TASK STANDARDS:

Perform the actions necessary to align FP cooling to the 1A Centrifugal Charging pump

TASK CONDITIONS:

1. You are a Non-Licensed Operator.
2. Unit-__ is experiencing a loss of Essential Service Water.

INITIATING CUES:

The Unit Supervisor has directed you to perform the actions necessary to align FP cooling to the _A Centrifugal Charging pump per _BOA PRI-7, Attachment B.

CRITICAL ELEMENTS: (*) 2 & 3

APPROXIMATE COMPLETION TIME: 10 minutes

PERFORMANCE CHECKLIST

STANDARDS

SAT UNSAT N/A

RECORD START TIME_____

- | | | | | |
|---|--|---|---|---|
| 1. Refer to _BOA PRI-7, Attachment B, Essential Service Water Malfunction | ◦ OPEN _BOA PRI-7, Attachment B, Essential Service Water Malfunction | 0 | 0 | 0 |
|---|--|---|---|---|

Note: This step may be performed at any time.

NOTE

The Hose stations for both Units are located at V-18, 364' (Outside the 2A CV Pump Rm)

- | | | | | |
|--|--------------------------|---|---|---|
| *2. Connect FP cooling to _A Centrifugal Charging pump | • CONNECT FP supply hose | 0 | 0 | 0 |
|--|--------------------------|---|---|---|

Cue: FP supply hose CONNECTED

- | | | | | |
|--|--|---|---|---|
| *3. Align FP cooling to _A Centrifugal Charging pump | | 0 | 0 | 0 |
|--|--|---|---|---|

**Cue: (U1) 0FP5170 is OPEN
(U2) 0FP5171 is OPEN**

At 364 V-18 AB2:

- OPEN 0FP5170 (U1) or 0FP5171 (U2), FP hose supply isolation valve

At _A CV pump:

Cue: _SX2200A is OPEN

- OPEN _SX2200A,

Cue: _SX2199A is CLOSED

- CLOSE _SX2199A,

PERFORMANCE CHECKLIST

STANDARDS

SAT

UNSAT

N/A

*4. Place a portable fan in door opening.

At the _A CV Pump Room Door.

o

o

o

Cue: Another NLO will bring and place the fan

o Place portable fan

Cue: This JPM is completed

RECORD STOP TIME_____

COMMENTS:

JOB PERFORMANCE MEASURE

TASK CONDITIONS:

1. You are a non-licensed operator.
2. The unit had experienced a Battery Charger _11 failure.
3. Maintenance has repaired 125 VDC Battery Charger _11 and all clearance orders are lifted.

INITIATING CUES:

The US directs you to startup 125 VDC Battery Charger _11 per _BOP DC-1.

JOB PERFORMANCE MEASURE

Rev. 2, 3/20/06

TASK TITLE: Respond to a Loss of DC Power. (Startup of a 125 VDC ESF Battery Charger)

JPM No.: Plt 300

TPO No: IV.D.OA-23

K&A No: 063 A3.01

K&A IMP: 2.7/3.1

TRAINEE: _____

DATE: ___/___/___

The Trainee: PASSED _____ this JPM

TIME STARTED: _____

FAILED _____

TIME FINISHED: _____

EVALUATION METHOD: PERFORM _____ SIMULATE _____

LOCATION: IN PLANT _____

MATERIALS:

1. Copy of _BOP DC-1
2. Calibrated hand held digital voltmeter, optional.

GENERAL REFERENCES:

1. _BOP DC-1, 125V DC ESF Battery Chargers Start-up (Rev. 10)

TASK STANDARDS:

Take the actions necessary to start-up a 125V DC ESF battery charger.

TASK CONDITIONS:

1. You are a non-licensed operator.
2. The unit had experienced a Battery Charger _11 failure.
3. Maintenance has repaired 125 VDC Battery Charger _11 and all clearance orders are lifted.

INITIATING CUES:

The US directs you to startup 125 VDC Battery Charger _11 per _BOP DC-1.

CRITICAL ELEMENTS: (*) 7, 8, 9, 10

APPROXIMATE COMPLETION TIME: 15 minutes

PERFORMANCE CHECKLIST

STANDARD

SAT UNSAT N/A

RECORD START TIME _____

- | | | | | |
|--|-----------------------------|--------------------------|--------------------------|--------------------------|
| 1. Refer to _BOP DC-1, 125V DC ESF Battery Chargers Start-up | ◦ LOCATE and OPEN _BOP DC-1 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|--|-----------------------------|--------------------------|--------------------------|--------------------------|

Note: Step 1 may be performed at any time.

Cue: All prerequisites have been met

Note: Bus _31X, Compartment 4B is located on 426 elevation

- | | | | | |
|--|--|--------------------------|--------------------------|--------------------------|
| 2. 480 VAC feed breaker to battery charger | ◦ VERIFY/OPEN Bus _31X, Compartment 4B | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|--|--|--------------------------|--------------------------|--------------------------|

Cue: Bus _31X, Compartment 4B 'RED' light is LIT –OR- the breaker is OPEN

- | | | | | |
|---|---|--------------------------|--------------------------|--------------------------|
| 3. 125 VDC feed breaker from battery charger to battery | ◦ VERIFY/OPEN 125 V DC ESF Distribution Center _11 Compartment AF-1 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|---|---|--------------------------|--------------------------|--------------------------|

Cue: AF-1 is pointing to the left (OFF)

- | | | | | |
|--|---|--------------------------|--------------------------|--------------------------|
| 4. AC power breaker on battery charger | ◦ VERIFY/OPEN AC power breaker, CB-1 on _11 Battery Charger | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|--|---|--------------------------|--------------------------|--------------------------|

Cue: AC power breaker, CB-1 is in the DOWN (off) position

- | | | | | |
|--|---|--------------------------|--------------------------|--------------------------|
| 5. DC power breaker on battery charger | ◦ VERIFY/OPEN DC power breaker, CB-2 on _11 Battery Charger | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|--|---|--------------------------|--------------------------|--------------------------|

Cue: DC power breaker, CB-2 is in the DOWN (off) position

<u>PERFORMANCE CHECKLIST</u>	<u>STANDARDS</u>	<u>SAT</u>	<u>UNSAT</u>	<u>N/A</u>
6. Float/Equalize selector switch and equalize timer	ENSURE Battery Charger _11:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cue: Float/Equalize selector switch is over to the LEFT (float) position	◦ Float/Equalize selector switch in FLOAT			
Cue: Equalize timer is set at ZERO	◦ Equalize timer is TIMED OUT			

NOTE

The Safety Rule Book is unclear regarding the personnel protection equipment requirements for this manipulation. Ensure the trainee can describe how they would close the breaker in the next step.

Note: Bus _31X, Compartment 4B is located on 426 elevation

*7. Energize the battery charger	• CLOSE bus _31X compartment 4B	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cue: Breaker _31X compartment 4B 'GREEN' light is LIT				
<u>OR</u> (if remaining at the Battery Charger)				
Cue: Breaker _31X compartment 4B breaker is CLOSED				
*8. Connect the battery charger to the distribution panel	• CLOSE breaker AF-1 on ESF distribution panel _11	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cue: AF-1 pointing up (ON)				
*9 DC power breaker	• CLOSE breaker CB-2 on Battery Charger _11	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cue: CB-2 is in the UP (on) position				

PERFORMANCE CHECKLIST

STANDARDS

SAT

UNSAT

N/A

*10 Energize the DC bus and batteries from the battery charger

- CLOSE breaker CB-1 on Battery Charger _11

Cue: CB-1 is in the UP (on) position

Cue: (If requested) Battery charger amp meter is at 80 and slowly decreasing

NOTE

In the following step, if a voltmeter is not available, have the trainee demonstrate how voltage would be measured then:

Cue: Battery _11 terminal voltage = 128.9 volts (measured between cells #1 & #58)

If voltage is measured elsewhere modify voltage as required, on the right side each row is 17 cells (37.81 volts) and each left side is 12 cells (26.69 volts)

11. Verify the battery and charger are operating properly

- MEASURE battery terminal voltage

NOTE: see cue above

- ENSURE voltage between 128.2 and 130.5 VDC

12. Battery charger alarm

- CHECK _-21-E8 annunciator CLEAR

Cue: Unit _ NSO reports _-21-E8, 125V DC BATT CHGR _11 TROUBLE has CLEARED

Cue: This JPM is completed

RECORD STOP TIME_____

COMMENTS:

JOB PERFORMANCE MEASURE

TASK CONDITIONS:

1. You are an extra NSO.
2. The Unit is near full power with excess letdown in service and flow directed to the CV pump suction header.
3. Valve strokes for 1CV8152 and 1CV8160 are complete and normal letdown has been restored.

INITIATING CUES:

1. The US has directed you to secure excess letdown operations.

JOB PERFORMANCE MEASURE

Rev. 1

TASK TITLE: **Remove Excess Letdown from Service**

JPM No.: Sim 100

TPO No: IV.C.CV-07

K&A No.: 004 A4.06

K&A IMP. 3.6/3.1

TRAINEE: _____

DATE: ___/___/___

The Trainee: PASSED _____ this JPM

TIME STARTED: _____

FAILED _____

TIME FINISHED: _____

EVALUATION METHOD: PERFORM X SIMULATE _____

LOCATION: IN PLANT _____ SIMULATOR X

MATERIALS:

None

GENERAL REFERENCES:

1. BOP CV-15, Rev. 7, Excess Letdown Operations.

TASK STANDARDS:

Remove excess letdown from service.

TASK CONDITIONS:

1. You are an extra NSO.
2. The Unit is near full power with excess letdown in service and flow directed to the CV pump suction header.
3. Valve strokes for 1CV8152 and 1CV8160 are complete and normal letdown has been restored.

INITIATING CUES:

1. The US has directed you to secure excess letdown operations.

CRITICAL ELEMENTS: (*)

2,4

APPROXIMATE COMPLETION TIME: 5 minutes

RECORD START TIME _____

NOTE

Provide examinee with a copy of BOP CV-15 when located.

1.	Refer to BOP CV-15, step F.2.	◦ Locate and Open BOP CV-15, step F.2.	0	0	0
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Cue: All Prerequisites and Precautions have been met.

*2.	Isolate excess letdown flowpath.	At 1PM05J	0	0	0
		<ul style="list-style-type: none"> ● SLOWLY CLOSE 1CV123, Exc Ltdwn HX Flow Cont Vlv, 			

3.	Isolate excess letdown flowpath	At 1PM05J	0	0	0
		◦ CLOSE 1CV8153A, Exc Ltdwn HX 1A Inlet Isol Vlv,			
		◦ CLOSE 1CV8153B, Exc Ltdwn HX 1B Inlet Isol Vlv,			

*4.	Isolate excess letdown flowpath	At 1PM05J	0	0	0
		<ul style="list-style-type: none"> ● CLOSE 1RC8037A, Loop drain Vlv ◦ CLOSE 1RC8037B, Loop drain Vlv ◦ CLOSE 1RC8037C, Loop drain Vlv ◦ CLOSE 1RC8037D, Loop drain Vlv 			

PERFORMANCE CHECKLIST

STANDARDS

SAT UNSAT N/A

5. Isolate Component Cooling Water Flow to Excess Letdown HXs.

At 1PM06J

0 0 0

◦ CLOSE 1CC9437A, CC to Exc Ltdwn HX Isol Vlv

◦ CLOSE 1CC9437B, CC from Exc Ltdwn HX Isol Vlv Vlv

6. Restore CV lineup.

At 1PM05J

0 0 0

◦ VERIFY 1CV8143, Exc Ltdwn to Seal Filter or RCDT Vlv in the VCT position

7. Aligning Seal Return Flow.

Cue: If asked, step F.1.d was not performed.

Cue: This completes the JPM.

◦ Locally open _CV8484, Seal Wtr HX Outlet to CV Pp Suct Hdr

0 0 0

◦ Locally close _CV8482, Seal Wtr HX Outlet to VCT Isol Vlv

RECORD STOP TIME _____

COMMENTS:

SIMULATOR SETUP INSTRUCTIONS

JPM NO: Sim 100

REQUIRED SIMULATOR MODE(S): 99.8% power steady state

MALFUNCTION #'S: N/A

COMMENTS:

- 1) Place excess letdown in service using only loop A drain valve, 1RC8037A and both excess letdown heat exchangers, 1CV8153A and 1CV8153B per BOP CV-15.
- 2) Leave flow aligned to CV pump suction header (1CV8482 closed, 1CV8484 Open).

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JOB PERFORMANCE MEASURE

TASK CONDITIONS:

1. You are the Unit 1 Assist NSO.
2. Unit _ has experienced a LOCA.
3. _BEP-0 is in progress in response to the event.

INITIATING CUES:

You are directed to verify Control Room, Auxiliary Building, and Fuel Handling Building ventilation is aligned for emergency operation per steps 21, 22, and 23 of _BEP-0.

JOB PERFORMANCE MEASURE

Rev. 6, 3/28/06

TASK TITLE: Align Ventilation Systems for Emergency Operations (Failure of Inaccessible Filter Plenum Fans to Start)

JPM No.: Sim 200

TPO No: 4D.EP-19

K&A No.: 013 K1.13

K&A IMP. 2.8/3.1

EXAMINEE: _____

DATE: ___/___/___

The Examinee: PASSED _____ this JPM

TIME STARTED: _____

FAILED _____

TIME FINISHED: _____

EVALUATION METHOD: PERFORM _____ SIMULATE _____

LOCATION: IN PLANT _____ SIMULATOR X _____

MATERIALS:

1. Copy of _BEP-0, steps 21 - 23
2. Copy of BOP VA-5

GENERAL REFERENCES:

1. _BEP-0, Reactor Trip or Safety Injection (Rev. 107)
2. BOP VA-5, Aux Building Charcoal Booster Fan Operation (Rev. 6)

TASK STANDARDS:

Perform the actions necessary to align the Control Room, Auxiliary Building, and Fuel Handling Building for emergency operations.

TASK CONDITIONS:

1. You are the Unit 1 Assist NSO.
2. Unit _ has experienced a LOCA.
3. _BEP-0 is in progress in response to the event.

INITIATING CUES:

You are directed to verify Control Room, Auxiliary Building, and Fuel Handling Building ventilation is aligned for emergency operation per steps 21, 22, and 23 of _BEP-0.

CRITICAL ELEMENTS: (*) 7, 9, 10 & 11

APPROXIMATE COMPLETION TIME: 7 minutes

PERFORMANCE CHECKLIST

STANDARD

SAT UNSAT N/A

RECORD START TIME_____

- | | | | | |
|---|-------------------------------------|--------------------------|--------------------------|--------------------------|
| 1. Refer to _BEP-0, Reactor Trip or Safety Injection, Step 21 | ◦ LOCATE and OPEN _BEP-0 to Step 21 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|---|-------------------------------------|--------------------------|--------------------------|--------------------------|

Note: Provide examinee a copy of _BEP-0, steps 21 - 23

Note:

JPM steps 2 through 6 verify that control room ventilation is aligned for emergency operation

- | | | | | |
|---|---|--------------------------|--------------------------|--------------------------|
| 2. Dispatch an NLO to trip Control Room Office HVAC Supply Fans | Dispatch NLO to trip:
◦ 0VV01CA
◦ 0VV01CB | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|---|---|--------------------------|--------------------------|--------------------------|

Cue: 0VV01CA is tripped

Cue: 0VV01CB is tripped

- | | | | | |
|---|---|--------------------------|--------------------------|--------------------------|
| 3. Operating VC train equipment alignment | At OPM02J, VERIFY 0_ train equipment RUNNING:
◦ Supply Fan
◦ Return Fan
◦ M/U Fan
◦ Chilled Water Pump
◦ MCR Chiller | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|---|---|--------------------------|--------------------------|--------------------------|

- | | | | | |
|---|---|--------------------------|--------------------------|--------------------------|
| 4. Operating VC train dampers alignment | At OPM02J, Verify:

● M/U fan outlet damper NOT FULLY CLOSED:
◦ 0VC24Y (Train A)
◦ 0VC08Y (Train B)

● M/U filter light LIT | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|---|---|--------------------------|--------------------------|--------------------------|

PERFORMANCE CHECKLIST

STANDARD

SAT UNSAT N/A

5. Operating VC train charcoal absorber alignment

At OPM02J, VERIFY VC train charcoal absorber ALIGNED:

- Train A
 - 0VC43Y Bypass damper CLOSED:
 - 0VC21Y Inlet damper OPEN
 - 0VC22Y Outlet damper OPEN

OR

- Train B
 - 0VC44Y Bypass damper CLOSED:
 - 0VC05Y Inlet damper OPEN
 - 0VC06Y Outlet damper OPEN

6. MCR pressure

At OPM02J:

Cue: Control room pressure reads approximately +0.2 inches of water

- CHECK control room pressure > +.125" H₂O

Note: Alternate Path starts here

Note:

The examinee will find the fans for plenums 0A and 0B off and the dampers in the corresponding positions for fans off.

PERFORMANCE CHECKLIST

STANDARD

SAT UNSAT N/A

*7. Inaccessible filter plenums.
VERIFY 2 Plenums aligned with
Charcoal Absorbers on-line:

- At 0PM02J (PLENUM 0A), verify fan run light LIT, flow control damper OPEN and bypass damper CLOSED:
 - 0VA03CA run light LIT
0VA022Y OPEN
0VA020Y CLOSED

OR
- 0VA03CB run light LIT
0VA023Y OPEN
0VA436Y CLOSED
- At 0PM02J (PLENUM 0B), verify fan run light LIT, flow control damper OPEN and bypass damper CLOSED:
 - 0VA03CC run light LIT
0VA024Y OPEN
0VA021Y CLOSED

OR
- 0VA03CD run light LIT
0VA025Y OPEN
0VA437Y CLOSED
- At 0PM02J (PLENUM 0C), verify fan run light LIT, flow control damper OPEN and bypass damper CLOSED:
 - 0VA03CE run light LIT
0VA067Y OPEN
0VA052Y CLOSED

OR
- 0VA03CF run light LIT
0VA072Y OPEN
0VA438Y CLOSED

**Note: Determines that Fans
0VA03CB and 0VA03CA are not
running.**

Note:

In the following step, the lead fan to start in each plenum is the second (e.g. B, D, or F for A, B, or C plenum respectively).

The examinee may attempt to manually start 0VA03CB or may attempt to place 0VA03CA in service but these attempts will not be successful, thus 0B plenum may be placed in service per BOP VA-5 prior to verifying 0C plenum in service.

- | | | | | |
|---|--------------------------------------|--------------------------|--------------------------|--------------------------|
| 8. Refer to BOP VA-5, Aux Building Charcoal Booster Fan Operation | ◦ LOCATE and OPEN BOP VA-5, step F.1 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------------------|--------------------------|--------------------------|--------------------------|

Note: Provide the examinee a copy of BOP VA-5

Cue: If asked, prerequisites are met.

Note:

Since more than 15 seconds have elapsed since the SI signal occurred, both the 0C and 0D fans will start as soon as the 0B plenum has been aligned. The RNO directs the use of BOP VA-5 for start of fans. VA-5 directs placing one fan in PTL for this situation, with the option of restoring to After Trip after the first fan starts.

- | | | | | |
|--|--|--------------------------|--------------------------|--------------------------|
| *9. Place one out of the two plenum B fans in Pull to Lock (PTL) | At 0PM02J (PLENUM 0B), place 0B fan in PTL | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|--|--|--------------------------|--------------------------|--------------------------|

- 0VA03CC

OR

- 0VA03CD

- | | | | | |
|---------------------|------------|--------------------------|--------------------------|--------------------------|
| *10. Align plenum B | At 0PM02J: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|---------------------|------------|--------------------------|--------------------------|--------------------------|

- OPEN 0VA085Y
- CLOSE 0VA084Y

PERFORMANCE CHECKLIST

STANDARD

SAT UNSAT N/A

*11. Verify fan running in plenum B and aligned to charcoal absorber

At 0PM02J (PLENUM 0B), verify fan run light LIT, flow control damper OPEN and bypass damper CLOSED:

- 0VA03CC run light LIT
- 0VA024Y OPEN
- 0VA021Y CLOSED

OR

- 0VA03CD run light LIT
- 0VA025Y OPEN
- 0VA437Y CLOSED

Note:

Student may take non running 0B Plenum fan out of PTL

12. Verify FH bldg ventilation aligned

At 0PM02J, VERIFY:

◦ Train A

- 0VA04CA running
- 0VA060Y OPEN
- 0VA057Y OPEN
- 0VA051Y CLOSED

OR

◦ Train B

- 0VA04CB running
- 0VA055Y OPEN
- 0VA062Y OPEN
- 0VA435Y CLOSED

Cue: This JPM is completed

RECORD STOP TIME _____

COMMENTS:

SIMULATOR SETUP INSTRUCTIONS

JPM NO: Sim 200

REQUIRED SIMULATOR MODE(S): N/A

MALFUNCTION #'S:

1. IMF HV02A
2. IMF HV02B
3. IMF AN01M
4. IOR ZLOBYAN14 Off
5. MRF RP70 in
6. MRF RP44 in
7. IOR ZDIWO01PA Trip

COMMENTS:

1. Verify 0A and 0C Plenums online

JOB PERFORMANCE MEASURE

TASK CONDITIONS:

1. You are the unit NSO.
2. The unit is in hot shutdown

INITIATING CUES:

1. Unit 1 RWST level is 90%.
2. The Unit Supervisor directs you to align and initiate makeup to the Unit 1 RWST using BOP SI-13 starting at step f.4, to achieve 94% level.

JOB PERFORMANCE MEASURE

Rev. 9, 03/17/06

TASK TITLE: Fill the Refueling Water Storage Tank

JPM No.: Sim 300

TPO No: IV.C.CV-17

K&A No.: 006 A4.03

K&A IMP. 4.4/4.4

TRAINEE: _____

DATE: ___/___/___

The Trainee: PASSED _____ this JPM

TIME STARTED: _____

FAILED _____

TIME FINISHED: _____

EVALUATION METHOD: PERFORM X SIMULATE _____

LOCATION: IN PLANT _____ SIMULATOR X

MATERIALS:

Calculator

BOP SI-13, Filling the RWST (Rev. 21) filled out to step f.4

GENERAL REFERENCES:

1. BOP SI-13, Filling the RWST (Rev. 21)
2. 1BCB Fig. 16, Blended Flow (Rev. 1)

TASK STANDARDS:

Makeup to RWST with \geq 2300 ppm blended flow from RCMS.

TASK CONDITIONS:

1. You are the unit NSO.
2. The unit is in hot shutdown.

INITIATING CUES:

1. Unit 1 RWST level is 90%.
2. The Unit Supervisor directs you to align and initiate makeup to the Unit 1 RWST using BOP SI-13 starting at step f.4, to achieve 94% level.

CRITICAL ELEMENTS: (*) 2, 3, 4 &7

APPROXIMATE COMPLETION TIME: 15 minutes

RECORD START TIME _____

Note:
Provide the examinee a copy of BOP SI-13

1. Refer to BOP SI-13, Filling the RWST

Cue: All prerequisites, precautions, limitations and actions are met

◦ REVIEW prerequisites, precautions, limitations and actions

*2. Prepare RMCS for RWST fill

At 1PM05J:

- PLACE makeup control switch to 'Stop'
- PLACE reactor makeup mode select switch to 'Manual'
- PLACE 1CV110B to 'Close'
- PLACE 1CV111B to 'Close'

PERFORMANCE CHECKLIST

STANDARDS

SAT

UNSAT

N/A

*3. Setup PW totalizer

At _PM05J:

- SET 1FY-0111
- PRESS 'RST' on PW total flow totalizer and Verify the counter reads 0.
- PRESS 'PST' on PW total flow totalizer
- PRESS '→' until desired digit flashes on the lower data display
- PRESS '+' or '-' to change flashing digit until the desired gallons is indicated on the lower data display
- PRESS 'ENT' to lock-in the desired number of gallons (**18360 gals**)
 - Verify the correct number of desired gallons is displayed on the lower data display with no numbers flashing

PERFORMANCE CHECKLIST

STANDARDS

SAT

UNSAT

N/A

*4. Setup Boric Acid totalizer

At 1PM05J:

- SET 1FY-0110
 - PRESS 'RST' on BA total totalizer and Verify the counter reads 0.
 - PRESS 'PST' on BA total totalizer
 - PRESS '→' until desired digit flashes on the lower data display
 - PRESS '+' or '-' to change flashing digit until the desired gallons is indicated on the lower data display
 - PRESS 'ENT' to lock-in the desired number of gallons (**6169 gals**)
 - Verify the correct number of desired gallons is displayed on the lower data display with no numbers flashing

5. Determine desired blended flow control setpoints

- SET 1FK110 = 8.4 (+/- 1 turn)

- SET 1FK111 = 6.25 (+/- 1 turn)

PERFORMANCE CHECKLIST

STANDARDS

SAT

UNSAT

N/A

6. Perform valve alignment

DIRECT operator to:

Cue: Local operator reports CV8553 is CLOSED

◦ VERIFY/CLOSED 1CV8553

Cue: Local operator reports CV8432 is OPEN

● OPEN 1CV8432

Cue: Local operator reports CV8434 is OPEN

● UNLOCK and OPEN 1CV8434

*7. Fill RWST with \geq 2300 ppm blended flow

- PLACE makeup control switch to 'Start'
- VERIFY PW pump starts
- Verify boric acid transfer pump starts
- Verify BA and PW flowrates are as expected on 1FR-0110
- MONITOR RWST level and BAT level

8. Sample blended flow

- REQUEST chemistry notify control room when ready to sample blender

Cue: Chemistry acknowledges request

Cue: This completes this JPM.

RECORD STOP TIME _____

COMMENTS:

Simulator Setup Instructions

JPM NO: Sim 300

REQUIRED SIMULATOR MODE(S): N/A

MALFUNCTION #'S:

1. Enter and Set Monitor Parameter RHMRWST to 3.43 e6
2. MRF CV65 Open

COMMENTS:

Ensure BOP SI-13, Filling the RWST (Rev. 21) is filled out to step f.4 and PW and BA totalizers are reset.

JOB PERFORMANCE MEASURE

TASK CONDITIONS:

1. You are the Unit 1 NSO.
2. The Unit is at 100% power.

INITIATING CUES:

1. Annunciator 1-7-B3 "RCP SEAL LEAKOFF FLOW HIGH" has just gone into alarm.

JOB PERFORMANCE MEASURE

Rev. 1, 3/28/06

TASK TITLE: **Respond to High RCP Seal Leakoff Flow**

JPM No.: Sim 400

TPO No: IV.D.OA.05

K&A No.: 003 A2.01

K&A IMP. 3.5/3.9

TRAINEE: _____

DATE: ___/___/___

The Trainee: PASSED _____ this JPM

TIME STARTED: _____

FAILED _____

TIME FINISHED: _____

EVALUATION METHOD: PERFORM X SIMULATE _____

LOCATION: IN PLANT _____ SIMULATOR X

MATERIALS:

1BOA RCP-1, Rev. 102, Reactor Coolant Seal Failure

GENERAL REFERENCES:

1. 1BOA RCP-1, Rev. 102, Reactor Coolant Seal Failure
2. BAR 1-7-B3, Rev 10, RCP Seal Leakoff Flow High

TASK STANDARDS:

Respond to RCP Leakoff from No. 1 Seal.

TASK CONDITIONS:

1. You are the Unit 1 NSO.
2. The Unit is at 100% power.

INITIATING CUES:

Annunciator 1-7-B3 "RCP SEAL LEAKOFF FLOW HIGH" has just gone into alarm.

CRITICAL ELEMENTS: (*)

3,4 & 5

APPROXIMATE COMPLETION TIME: 5 minutes

PERFORMANCE CHECKLIST

STANDARDS

SAT

UNSAT

N/A

RECORD START TIME_____

1. Refer to BAR 1-7-B3, and perform Immediate Operator Actions.

Locate and Open BAR 1-7-B3 and perform the following Immediate Operator Actions:

0

0

0

- CHECK Seal Injection Flows.

- DETERMINE which pump is alarming by SER printout.

Cue: The extra NSO will take care of subsequent actions

- REFER to 1BOA RCP-1.

Cue: US Directs NSO to Implement 1BOA RCP-1

Note:

Provide examinee a copy of 1BOA RCP-1

2. Enter 1BOA RCP-1 and Check No. 1 Seal DP.

- CHECK 1B RCP No. 1 Seal DP GREATER THAN 200 PSID.

0

0

0

PERFORMANCE CHECKLIST

STANDARDS

SAT

UNSAT

N/A

*3. Check No. 1 Seal Leakoff Flow

Perform the following to DETERMINE RCP Seal Leakoff Flow is HIGH:

0

0

0

- DETERMINE Seal DP by comparing Charging Header Pressure to VCT Pressure.
- CHECK 1B RCP No. 1 Seal Leakoff Flows.
- DETERMINE Actual 1B RCP No. 1 Seal Leakoff Flow is HIGH by comparing to Figure 1BOA RCP-1-1 and GO TO step 6.

Note: Alternate Path starts here

*4. Monitor RCP Seal Parameters

- Determine 1B RCP No. 1 seal leakoff flow is greater than 6 GPM and implements RNO Step

0

0

0

Note:

Once student determines the need to trip the Rx and RCP, the JPM can be terminated.

*5. Perform an Immediate RCP Shutdown.

- Trip the reactor.

0

0

0

Cue: US acknowledges the tripping of the Rx

- Trip the affected pump.

0

0

0

Cue: This completes the JPM.

RECORD STOP TIME _____

COMMENTS:

SIMULATOR SETUP INSTRUCTIONS

JPM NO: Sim 400

REQUIRED SIMULATOR MODE(S): 100% power steady state

MALFUNCTION #'S:

- 1) IMF CV27B Ramp from 5 gpm to 8 gpm over 180 seconds.

COMMENTS:

- 1) Insert malf and freeze simulator, go to run after examinee has been cued.
- 2) Ensure SER is on and the correct SER point (2072) is visible on the terminal at the NSO desk.
- 3) VCT level at top of green band.
- 4) 1B RCP Leakoff recorder should indicate greater than 6 gpm.

JOB PERFORMANCE MEASURE

TASK CONDITIONS:

1. You are the Unit NSO.
2. The unit is at 100% power with all systems and controls in automatic.
3. Unit 2 is in Mode 3.

INITIATING CUES:

Annunciator 1-19-B6, GENERATOR FIELD FORCING comes in.

JOB PERFORMANCE MEASURE

Rev. 3, 03/17/06

TASK TITLE: Respond to 345 KV Grid or Voltage Regulator Instability (recoverable)

JPM No.: Sim 500

TPO No: IV.D.OA-48

K&A No.: 045 K3.01

K&A IMP. 2.9/3.2

TRAINEE: _____

DATE: ___/___/___

The Trainee: PASSED _____ this JPM

TIME STARTED: _____

FAILED _____

TIME FINISHED: _____

EVALUATION METHOD: PERFORM X SIMULATE _____

LOCATION: IN PLANT _____ SIMULATOR X

MATERIALS:

None

GENERAL REFERENCES:

1. BAR 1-19-B6, GENERATOR FIELD FORCING (Rev. 5)
2. BCB-1, Fig. 20b, Generator Capability Curves and Underexcitation Limiter Settings (Rev. 2)

TASK STANDARDS:

Take the actions necessary to respond to an automatic voltage regulator failure per BAR 1-19-B6.

TASK CONDITIONS:

1. You are the Unit NSO.
2. The unit is at 100% power with all systems and controls in automatic.
3. Unit 2 is in Mode 3.

INITIATING CUES:

Annunciator 1-19-B6, GENERATOR FIELD FORCING comes in.

CRITICAL ELEMENTS: (*) 2, 3

APPROXIMATE COMPLETION TIME: 5 minutes

RECORD START TIME _____

1. Refer to BAR 1-19-B6,
GENERATOR FIELD FORCING

◦ LOCATE and OPEN
BAR 1-19-B6

**Note: JPM step 1 may be performed
at any time**

Cue: If asked, Grid is stable.

*2. Turn voltage regulator off

• SHIFT voltage regulator
to OFF

Note:

The generator field amps will decrease when the voltage regulator is placed in off and the base adjuster is lowered. The trainee should NOT have to trip the reactor.

*3. Reduce excitation

• REDUCE base adjuster
setting

• OBSERVE exciter
field current < 100
amps

◦ Notify Electric
Operations

4. Check for Grid Instabilities.

◦ If Grid instabilities are
present , Then Notify
Electric Operations of
alarm

Cue: Grid is stable.

PERFORMANCE CHECKLIST

STANDARDS

SAT

UNSAT

N/A

5. Check for Unit 2 for Main Generator adverse trends.

Cue: No adverse trends on Unit 2.

- Check Unit 2 for adverse Main Generator Trends
- If adverse trends noted, reference SPOG 1-8 for necessary actions

6. Verify amps less than 109.

- If generator field current CANNOT be reduced to less than 109 amps, then trip Rx if above P8 or trip turbine if below P8

7. Notify Electric Operations

Cue: Electric Operations has been notified of the voltage regulator failure

Cue: Both MW and VAR values are within Figure 20b limits.

Cue: This JPM is completed

- INFORM Electric Operations of voltage regulator failure
- ENSURE MW and VAR within BCB-__, Figure 20b limits

RECORD STOP TIME _____

COMMENTS:

SIMULATOR SETUP INSTRUCTIONS

JPM NO: Sim 500

REQUIRED SIMULATOR MODE(S): 100% power steady state

MALFUNCTION #'S:

- 1) IMF EG03 to 95% severity and allow to stabilize.

COMMENTS:

JOB PERFORMANCE MEASURE

TASK CONDITIONS:

1. You are the Unit 1 Assist NSO.
2. Unit 1 is at 100% power.

INITIATING CUES:

1. Unit 1 PRT level has risen to 90% due to inadvertent opening of a PZR PORV.
2. The US has directed you to return the Unit 1 PRT level to within its normal operating band.

JOB PERFORMANCE MEASURE

Rev. 1, 03/17/2006

TASK TITLE: Drain the PZR Relief Tank (PRT)

JPM No.: Sim 600

TPO No: IV.C.RY-03

K&A No.: 007 A1.01

K&A IMP: 2.9 / 3.1

TRAINEE: _____

DATE: ___/___/___

The Trainee: PASSED _____ this JPM

TIME STARTED: _____

FAILED _____

TIME FINISHED: _____

EVALUATION METHOD: PERFORM__X__ SIMULATE_____

LOCATION: PLANT__ __ SIMULATOR__X__

MATERIALS:

1. Copy of BOP RY-4

GENERAL REFERENCES:

1. BOP RY-4, Rev. 5, Draining the Pressurizer Relief Tank

TASK STANDARDS:

1. Decrease PRT level to < 88%, but > 59%.
2. Restores PRT Pressure to > 0 psig, if reduced to ≤ 0 psig.

TASK CONDITIONS:

1. You are the Unit 1 Assist NSO.
2. Unit 1 is at 100% power.

INITIATING CUES:

1. Unit 1 PRT level has risen to 90% due to inadvertent opening of a PZR PORV.
2. The US has directed you to return the Unit 1 PRT level to within its normal operating band.

CRITICAL ELEMENTS: (*) 6, 7, 9, 11, 12 & 13

APPROXIMATE COMPLETION TIME: 10 minutes

RECORD START TIME _____

Note:

Examinee may refer to BAR 1-12-A7 "PRT Level High Low"

Actions here will direct:

- 1) Checking PORV and Safety Valves NOT open, 2) Pump down the PRT, 3) Check RCS leakage. It is not required for the examinee to perform these actions, but is acceptable if done. Initiating cues provided the cause for the high level alarm.

- | | | | | |
|--|----------------------------|---|---|---|
| 1. Refer to BOP RY-4, Draining the Pressurizer Relief Tank | o LOCATE and OPEN BOP RY-4 | o | o | o |
|--|----------------------------|---|---|---|

Cue: Prerequisites are met.

Note:

Provide the examinee with a copy of BOP RY-4.

- | | | | | |
|-------------------------|-----------------------|---|---|---|
| 2. Verify/Close 1RY469. | At 1PM05J: | o | o | o |
| | o Verify/Close 1RY469 | | | |

- | | | | | |
|--|----------------------------------|---|---|---|
| 3. Verify 1RY8034 is maintaining PRT pressure. | At 1PM05J: | o | o | o |
| | o Verify PRT pressure is ~3 psig | | | |

- | | | | | |
|-------------------------|-----------------------|---|---|---|
| 4. Verify/Open 1RY8033. | At 1PM05J: | o | o | o |
| | o Verify/Open 1RY8033 | | | |

- | | | | | |
|------------------------|-----------------------|---|---|---|
| 5. Verify/Open 1RE9170 | At 1PM11J: | o | o | o |
| | o Verify/Open 1RE9170 | | | |

- | | | | | |
|-------------------------|-----------------------|---|---|---|
| *6. Verify/Open 1RE1003 | At 1PM11J: | o | o | o |
| | o Verify/Open 1RE1003 | | | |

PERFORMANCE CHECKLIST

STANDARDS

SAT

UNSAT

N/A

*7. Open 1RY8031

At 1PM05J:

0

0

0

- Open 1RY8031

Note: Alternate Path starts here.

8. Verify/Start 1RE01PB

At 1PM05J:

0

0

0

Cue: US acknowledges that pump didn't start as expected and informs the NSO to continue with the procedure.

- Verify/Start 1RE01PB
- Inform US that 1RE01PB did not start

*9. Start 1RE01PA

At 1PM05J:

0

0

0

- Start 1RE01PA
- Verify that 1RE01PA started

10. Ensure PRT pressure remains above 0 psig.

At 1PM05J:

0

0

0

- Monitor PRT pressure on 1PI-469

*11. Close 1RY8031.

At 1PM05J:

0

0

0

- Close 1RY8031

*12. Stop 1RE01PA

At 1PM05J:

0

0

0

- Stop 1RE01PA

PERFORMANCE CHECKLIST

STANDARDS

SAT UNSAT N/A

*13. Close 1RE1003

At 1PM11J:

o o o

- Close 1RE1003

RECORD STOP TIME _____

COMMENTS:

SIMULATOR SETUP INSTRUCTIONS

JPM NO: Sim 600

REQUIRED SIMULATOR MODE(S): 100% power steady state

MALFUNCTION #'S:

1. IOR ZDI1RE01PB (Stop)

COMMENTS:

1. Raise PRT level to 90% by opening PW supply to PRT.

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.
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. 5, 3/17/06

TASK TITLE: Synchronize a D/G to a Bus and Load to 5400 KW JPM No.: Sim 700
(DG will not pick up load)

TPO No: IV.C.DG-02

K&A No.: 064 A4.06

K&A IMP. 3.9/3.9

TRAINEE: _____

DATE: ___/___/___

The Trainee: PASSED _____ this JPM

TIME STARTED: _____

FAILED _____

TIME FINISHED: _____

EVALUATION METHOD: PERFORM X SIMULATE _____

LOCATION: IN PLANT _____ SIMULATOR X

MATERIALS:

BOP DG-11, Diesel Generator Startup (Rev. 19) completed thru step f.4

GENERAL REFERENCES:

1. BOP DG-11, Diesel Generator Startup (Rev. 19)
2. BOP DG-11T1, Diesel Generator Start /Stop Log (Rev. 2)

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

PERFORMANCE CHECKLIST

STANDARDS

SAT

UNSAT

N/A

RECORD START TIME _____

- | | | | | |
|---|---------------------------------------|---|---|---|
| 1. Refer to BOP DG-11, Diesel Generator Startup | ◦ LOCATE and OPEN BOP DG-11, step F.5 | 0 | 0 | 0 |
|---|---------------------------------------|---|---|---|

Cue: All prerequisites have been met

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

Note: This step may be performed at any time.

- | | | | | |
|---|------------------------------|---|---|---|
| 2. Notify Electric Operations of pending diesel generator parallel operation, estimated run time, and loading | ◦ Notify Electric Operations | 0 | 0 | 0 |
|---|------------------------------|---|---|---|

Cue: Electric Operations has been informed

- | | | | | |
|---------------------------------------|--|---|---|---|
| 3. Auto Re-close Circuit Arm Selector | At 1PM01J:
◦ PLACE Auto Re-close Circuit Arm Selector Switch to SURV TEST | 0 | 0 | 0 |
|---------------------------------------|--|---|---|---|

- | | | | | |
|---------------------------------|---|---|---|---|
| 4. Verify DG operating properly | At 1PM01J, CHECK:
◦ DG frequency
◦ DG voltage | 0 | 0 | 0 |
|---------------------------------|---|---|---|---|

- | | | | | |
|---|--|---|---|---|
| 5. Verify the same voltage across each phase. | At 1PM01J, CHECK:
◦ DG phase voltages | 0 | 0 | 0 |
|---|--|---|---|---|

PERFORMANCE CHECKLIST

STANDARDS

SAT

UNSAT

N/A

*6. Turn on the 1A DG Feed to 141 Sync Selector switch.

At 1PM01J:

- TURN Sync Selector switch for DG 1A Feed to KV Bus 141 to ON

0

0

0

7. Adjust the incoming voltage.

At 1PM01J:

- ADJUST incoming voltage SLIGHTLY HIGHER than running voltage using DG 1A Volt Adj control

0

0

0

8. Adjust 1A DG speed.

At 1PM01J:

- Adjust speed so synchroscope rotates SLOWLY in FAST DIRECTION using DG 1A Gov Adj control

0

0

0

*9. Synchronize the DG

Cue: If requested, NLO is locally monitoring temperatures per notes in BOP

At 1PM01J:

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

0

0

0

10. Verify the synchroscope is locked in.

At 1PM01J:

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

0

0

0

PERFORMANCE CHECKLIST

STANDARDS

SAT

UNSAT

N/A

Note: Alternate Path starts here

*11. Immediately load the 1A DG to 1000 KW.

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

At 1PM01J:

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

0 0 0

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

Cue: This JPM is completed

- NOTIFY Unit Supervisor of the unsuccessful loading of the diesel

0 0 0

RECORD STOP TIME _____

COMMENTS:

SIMULATOR SETUP INSTRUCTIONS

JPM NO: Sim 700

REQUIRED SIMULATOR MODE(S): 99.8% power steady state

MALFUNCTION #'S:

1. trgset 7 "ZIO1HSDG026(3).gt.0"
2. trg 7 "imf eg07a 22"

COMMENTS:

1. Start 1A DG
2. MRF eg06 reset
3. Set trigger

JOB PERFORMANCE MEASURE

TASK CONDITIONS:

1. You are the Unit NSO.
2. The reactor is at 100% power.
3. All systems and controls are in automatic.

INITIATING CUE:

Respond to MCB alarms on 1PM05J.

JOB PERFORMANCE MEASURE

Rev. 8, 4/3/2006

TASK TITLE: Response to a Power Range NI Failure

JPM No.: Sim 800

TPO No: IV.D.OA-15

K&A No.: 015 A2.01

K&A IMP. 3.5 / 3.9

EXAMINEE: _____

DATE: ___/___/___

The Examinee: PASSED _____ this JPM

TIME STARTED: _____

FAILED _____

TIME FINISHED: _____

EVALUATION METHOD: PERFORM _____ SIMULATE _____

LOCATION: IN PLANT _____ SIMULATOR X

MATERIALS:

1. Copy of 1BOA INST-1, Attachment A

GENERAL REFERENCES:

1. 1BOA INST-1, Nuclear Instrumentation Malfunction (Rev. 104)
2. BAR 1-10-A3, PWR RNG HIGH STPT RX TRIP ALERT (Rev. 51)
3. BAR 1-10-A4, PWR RNG UPPER DET FLUX DEV HIGH (Rev. 5)
4. BAR 1-10-A7, ROD DEV POWER RNG TILTS (Rev. 16)
5. BAR 1-10-B5, PWR RNG FLUX HIGH ROD STOP (Rev. 1)

TASK STANDARDS:

1. Respond to a PR NI failure.
2. Trip the associated bistables.

TASK CONDITIONS:

1. You are the Unit 1 NSO.
2. The reactor is at 100% power.
3. All systems and controls are in automatic.

INITIATING CUE:

1. Respond to MCB alarms on 1PM05J.

CRITICAL ELEMENTS: (*) 2, 3, 7, 8, & 9

APPROXIMATE COMPLETION TIME: 10 minutes

RECORD START TIME

Note:
Once the examinee has the Unit, Inform Machine Operator to insert malfunction

- | | | | | | |
|--|---|---|---|---|---|
| 1. Refer to 1BOA INST-1, Nuclear Instrumentation Malfunction | ○ | LOCATE and OPEN 1BOA INST-1, Attachment A | ○ | ○ | ○ |
|--|---|---|---|---|---|

Note: This may be performed at any time.

- Inform SM to evaluate conditions for the E-Plan

Cue: SM will evaluate E-Plan.

Note:
 Provide the examinee a copy of 1BOA INST-1, Attachment A.

- | | | | | | |
|------------------------------|------------|--|---|---|---|
| *2. Check rod control status | At 1PM05J: | | ○ | ○ | ○ |
| | | <ul style="list-style-type: none"> ● PLACE Rod Bank Select switch in MANUAL | | | |

Cue: When the examinee reports the failure to the US, acknowledge the report and gives the following direction: Perform actions required and the U1 Assist NSO will monitor the Unit while you continue.

- | | | | | | |
|------------------------|------------|--|---|---|---|
| *3. Check for Rod Stop | At 1PM05J: | | ○ | ○ | ○ |
| | | <ul style="list-style-type: none"> ● Check Alarm 1-10-B5 is LIT | | | |

At 1PM07J:

- PLACE Rod Stop Bypass switch in the N-41 position

- | | | | | | |
|------------------------------|------------|--|---|---|---|
| 4. Check Tave-Tref deviation | At 1PM05J: | | ○ | ○ | ○ |
| | | <ul style="list-style-type: none"> ○ CHECK Tave-Tref STABLE and within 1 °F | | | |

<u>PERFORMANCE CHECKLIST</u>	<u>STANDARDS</u>	<u>SAT</u>	<u>UNSAT</u>	<u>N/A</u>
5. Match Tave to Tref	RESTORE Tave-Tref to within 1 °F by:	o	o	o
Cue: U1 Assist NSO will restore Tave	<ul style="list-style-type: none"> ◦ Manual rod control ◦ Adjusting turbine load ◦ Adjusting RCS boron 			
6. Check SG levels	At 1PM04J:	o	o	o
	<ul style="list-style-type: none"> ◦ CHECK SG levels 			
*7. Bypass PR 41	At 1PM07J:	o	o	o
	<p>BYPASS N41 on the Detector Current Comparator:</p> <ul style="list-style-type: none"> ● Upper current comparator ● Lower current comparator <p>BYPASS N41 on the Miscellaneous Control and Indication Section:</p> <ul style="list-style-type: none"> ● Power mismatch bypass ◦ Rod Stop bypass <p>BYPASS N41 on the Comparator and Rate Panel:</p> <ul style="list-style-type: none"> ● Comparator channel defeat 			

Note:

Placement of orange dots is one method of ensuring coincidence will not be met, causing a reactor trip. The evaluator should apply discretion in accepting alternate methods since no specific method is stated in 1BOA INST-1.

*8. Trip Hi/Lo and Positive rate Rx trip bistables for channel N-41	At 1PM07J:	o	o	o
	<ul style="list-style-type: none"> • REMOVE control power fuses for N-41 to TRIP bistables: 			
	<ul style="list-style-type: none"> • NC41P 			
	<ul style="list-style-type: none"> • NC41R 			
	<ul style="list-style-type: none"> • NC41U/K 			

Note:

If the task is performed on the simulator, an extra NSO will be required, insure examinee can discuss how the bistables in the field would be tripped.

*9. Trip Hi/Lo and Positive rate Rx trip bistables for channel N-41	Locally TRIP bistables by placing switches in TEST:	o	o	o
Cue: TB411C is TRIPPED	<ul style="list-style-type: none"> • TB411C 			
Cue: TB411D is TRIPPED	<ul style="list-style-type: none"> • TB411D 			
10. Select operable channels	At 1PM05J, SELECT operable channel for:	o	o	o
	<ul style="list-style-type: none"> o Loop ΔT recorder 			

Note:

The examinee only needs to place one of the three computer points into test.

11. Defeat effect channel input to PDMS

Using the OPCON computer:

o o o

Cue: An extra NSO will place the remaining points into TEST.

o REMOVE N0049A from scan

o Place N0041 in TEST

Cue: This JPM is completed.

o Place N0042 in TEST

o Place U1144 in TEST

RECORD STOP TIME _____

COMMENTS:

Simulator Setup Instructions

JPM NO: Sim 800

REQUIRED SIMULATOR MODE(S): 100% power steady state

MALFUNCTION #'S:

1. IMF NI09a to 120 when directed by examiner

COMMENTS:

Ensure computer points are restored to normal status after each examinee.