

INITIAL SUBMITTAL OF WALKTHROUGH JPMS

FOR THE BYRON INITIAL EXAMINATION - OCT/NOV 2001

Facility: Byron

Date of Examination: _____

Exam Level (circle one) RO / SRO(I) SRO(U)Operating Test Number: 2001**B.1 Control Room Systems**

System / JPM Title	Type Code*	Safety Function
a. Chemical and Volume Control System / Perform Emergency Boration (Plugged RC Filter) (JPM N-27b)	D, A, S	1
b. Pressurizer Pressure Control / Transfer from Manual to Automatic Pressurizer Pressure Control - Malfunction of Auto Control	N, A, S, L	3
c. Residual Heat Removal System / Place Shutdown Cooling in Service (JPM N-20)	D, S, L	4
d. Containment Spray System / Align Containment Spray System for Cold Leg Recirculation	N, S, L	5
e. Emergency Diesel Generators (DG) / Remove DG from Parallel Operation (JPM N-06)	D, S	6
f. Component Cooling Water System (CC) / Swap to standby CC pump (Hi amps on startup)	N, A, S	8
g. Liquid Rad Waste System / Perform Process Rad Monitor Adjustment for Liquid Release	N, S	9

B.2 Facility Walk-Through

a. Engineered Safety Features Actuation System / Local Reset of Feedwater Isolation Signal (JPM N-43)	D, L	2
b. Hydrogen Recombiner / Startup of a Hydrogen Recombiner (JPM N-31)	D, R	5
c. Fire Protection System / Operate the Fire Detection & Alarm System, Manual Initiation of CO2 to DG Room (JPM N-49a)	D, A	8

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

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d.		
e.		
f.		
g.		

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c. Fire Protection System / Operate the Fire Detection & Alarm System, Manual Initiation of CO2 to DG Room (JPM N-49a)	D, A	8

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

JOB PERFORMANCE MEASURE

JPM No.: B.1.a

TASK CONDITIONS:

1. You are the Unit NSO.
2. The unit is in Mode 1.
3. All controls in automatic.
4. Annunciators _-10-B6, ROD BANK LOW INSERTION LIMIT and _-10-A6, ROD BANK LO-2 INSERTION LIMIT are LIT.

INITIATING CUES:

T_{ave} has been increasing and rods have been stepping in due to a suspected letdown demineralizer problem. The demineralizer has been bypassed. The Unit Supervisor has directed you to Emergency Borate using _BOA PRI-2 until the ROD BANK LO-2 INSERTION LIMIT alarm is clear.

JOB PERFORMANCE MEASURE

Rev. 2, 9/3/2001

TASK TITLE: Perform an Emergency Boration (Plugged boric acid filter)

JPM No.: B.1.a (N-27b)

TPO No: IV.D.OA-8

K&A No.: 000024EA1.17

K&A IMP. 3.9/3.9

TRAINEE: _____

DATE: ____/____/____

The Trainee: PASSED _____ this JPM

TIME STARTED: _____

FAILED _____

TIME FINISHED: _____

EVALUATION METHOD: PERFORM _____ SIMULATE _____

LOCATION: IN PLANT _____ SIMULATOR _____

MATERIALS:

None

GENERAL REFERENCES:

1. _BOA PRI-2, Emergency Boration (Rev. 100)
2. BAR _-10-A6, ROD BANK LO-2 INSERTION LIMIT (Rev. 2)
3. BAR _-10-B6, ROD BANK LOW INSERTION LIMIT (Rev. 4)

TASK STANDARDS:

Complete the actions necessary to initiate an Emergency Boration flow rate of > 30 gpm of 7000 ppm boric acid flow or equivalent and regain SDM.

TASK CONDITIONS:

1. You are the Unit NSO.
2. The unit is in Mode 1.
3. All controls in automatic.
4. Annunciators _-10-B6, ROD BANK LOW INSERTION LIMIT and _-10-A6, ROD BANK LO-2 INSERTION LIMIT are LIT.

INITIATING CUES:

Tave has been increasing and rods have been stepping in due to a suspected letdown demineralizer problem. The demineralizer has been bypassed. The Unit Supervisor has directed you to Emergency Borate using _BOA PRI-2 until the ROD BANK LO-2 INSERTION LIMIT alarm is clear.

CRITICAL ELEMENTS: (*) 5c, 7**APPROXIMATE COMPLETION TIME: 18 minutes**

PERFORMANCE CHECKLISTSTANDARDSSAT UNSAT N/A

RECORD START TIME _____

NOTE

If this JPM is given on the simulator, only the cues underlined are required to be given to the trainee. The trainee may elect to skip the check of the BARs and go straight to the BOA.

1. Refer to BAR _-10-A6, ROD BANK LO-2 INSERTION LIMIT o LOCATE and OPEN BAR _-10-A6 ☐ ☐ ☐

2. Refer to BAR _-10- B6, ROD BANK LOW INSERTION LIMIT o LOCATE and OPEN BAR _-10-B6 ☐ ☐ ☐

3. Refer to _BOA PRI-2, Emergency Boration o LOCATE and OPEN _BOA PRI-2 ☐ ☐ ☐

Note: This may be done at any time.

4. Check for an operating CV pump ☐ ☐ ☐

Cue: The _A charging pump run light is LIT o CHECK at least one CV pump RUNNING

NOTE

BOA PRI-2 gives the option to Emergency Borate the RCS via the blender or the emergency boration valve (e.g. the steps are open bullets). The RNO provides for flow from the RWST. Since the boric acid filter will not pass > 30 gpm in this JPM, the RWST will be the only success path. Therefore use the applicable, step 5a or 5b, and/or 5c of the JPM for cueing and evaluating the trainee's performance. Either step 5a or 5b (or both) may be N/A.

PERFORMANCE CHECKLISTSTANDARDSSAT UNSAT N/A

5a. Normal boration

OPEN both boration valves:

☐☐☐**Cue: _CV110A open light is LIT**

o _CV110A

Cue: _CV110B open light is LIT

o _CV110B

Cue: The Boric Acid Transfer pump control switch is in START

o START the Boric Acid Transfer pump

Cue: The Boric Acid Transfer pump run light is LIT**Cue: Boration flow indicates 15 gpm**

o CHECK boration flow >30 gpm

Cue: Charging flow indicates 120 gpm

o VERIFY charging flow > 30 gpm

5b. Emergency boration

☐☐☐**Cue: _CV8104 open light is LIT**

o OPEN _CV8104

Cue: Boric Acid Transfer pump run light is LIT

o START the Boric Acid Transfer pump

Cue: Emergency boration flow indicates 20 gpm

o CHECK emergency boration flow >30 gpm

Cue: Charging flow indicates 120 gpm

o VERIFY charging flow > 30 gpm

PERFORMANCE CHECKLIST

STANDARDS

SAT UNSAT N/A

*5c. Alternate boration using RWST

Cue: (if chosen) _CV112D open light is LIT

Cue: (if chosen) _CV112E open light is LIT

Cue: (if chosen) _CV112B closed light is LIT

Cue: (if chosen) _CV112C closed light is LIT

Cue: (cue with the operating pump) _A/B CV pump run light is LIT

Cue: _CV-121 demand is at 100%

Cue: _CV182 demand is at 100%

Cue: Charging flow is 160 gpm

Cue: Letdown is established

Cue: Control rods are withdrawing

• OPEN at least one:

o _CV112D

o _CV112E

• CLOSE at least one:

o _CV112B

o _CV112C

• MAXIMIZE charging flow:

o VERIFY _A/B CV pump RUNNING

o _CV-121

o _CV182

o VERIFY letdown ESTABLISHED

☐☐☐

6. Energize pressurizer backup heaters

Cue: Pressurizer backup heaters groups A/B/D on lights are LIT

o PLACE B/U Heaters Grp A/B/D control switch to ON

☐☐☐

PERFORMANCE CHECKLIST

STANDARDS

SAT UNSAT N/A

*7. Check if boration can be stopped

☐☐☐

Cue: *-10-A6, ROD BANK LO-2
INSERTION LIMIT alarm has
RESET*

- CHECK rod control bank height > LO-2 insertion limit

Cue: *_ CV pump suction has been
returned to the VCT*

STOP emergency boration:

- VERIFY/OPEN:
 - o _CV112B
 - o _CV112C
- VERIFY/CLOSE:
 - o _CV112D
 - o _CV112E

8. Check Shutdown Margin adequate

Cue: *-10-A6, ROD BANK LO-2
INSERTION LIMIT alarm has
CLEARED*

- o CHECK rod control bank height > LO-2 insertion limit

Cue: *This JPM is completed*

RECORD STOP TIME _____

COMMENTS:

JOB PERFORMANCE MEASURE

JPM No.: B.1.b

TASK CONDITIONS:


1. You are the unit NSO.
2. Unit is in Mode 3, Hot Standby.
3. Plant heatup is in progress, using _BGP 100-1.
4. Pressurizer Pressure is 2235 psig and stable in manual control.

INITIATING CUES:

The Unit Supervisor has directed you to continue in the heatup procedure starting at (step 68, Unit 1) (step 67, Unit 2) by placing pressurizer pressure control in automatic.

JOB PERFORMANCE MEASURE

Rev. 0, 8/28/2001

 **TASK TITLE:** Establish Automatic PZR Pressure Control (auto controller fails) JPM No.: B.1.b

TPO No: IV.D.OA-11

K&A No.: 010000A4.01

K&A IMP. 3.7/3.5

TRAINEE: _____

DATE: ____/____/____

The Trainee: PASSED _____ this JPM

TIME STARTED: _____

FAILED _____

TIME FINISHED: _____

EVALUATION METHOD: PERFORM _____ SIMULATE _____

LOCATION: IN PLANT _____ SIMULATOR _____

MATERIALS:

None

GENERAL REFERENCES:

1. _BGP 100-1, Plant Heatup (Rev. 34, Unit 1) (Rev. 25, Unit 2)
2. BAR_-12-C1, PZR PRESS CONT DEV LOW HTRS ON, Rev. 2

 **TASK STANDARDS:**

Establish automatic PZR pressure control.

TASK CONDITIONS:

1. You are the unit NSO.
2. Unit is in Mode 3, Hot Standby.
3. Plant heatup is in progress, using _BGP 100-1.
5. Pressurizer Pressure is 2235 psig and stable in manual control.

INITIATING CUES:

The Unit Supervisor has directed you to continue in the heatup procedure starting at (step 68, Unit 1) (step 67, Unit 2) by placing pressurizer pressure control in automatic.

CRITICAL ELEMENTS: (*) 3, 5, 6, 7

APPROXIMATE COMPLETION TIME: 15 minutes

PERFORMANCE CHECKLISTSTANDARDSSAT UNSAT N/A

RECORD START TIME _____

NOTE

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

- | | | | | |
|---|--|--------------------------|--------------------------|--------------------------|
| 1. Refer to _BGP 100-1, Plant Heatup | o LOCATE and OPEN
_BGP 100-1 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Adjust master PZR pressure
controller POT setting per _BGP
100-1A1 | At _PM05J:
o VERIFY/SET 1PK-455A,
Master PZR pressure
Controller, to control at
2235 psig (POT setting
per _BGP 100-1A1 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Cue: 1PK-455A POT is set at
desired setting | | | | |
| *3. Depress the Master PZR pressure
controller AUTO pushbutton. | • VERIFY/PLACE 1PK-
455A, Master PZR
pressure Controller, in
AUTO | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Cue: 1PK-455A controller Auto
pushbutton has been
depressed | | | | |
| Cue: 1PK-455A controller Auto
pushbutton is illuminated | | | | |
| 4. SET PZR spray valves controllers
1PK-455B and 1PK455C POTs to
0 | • VERIFY/SET 1PK-455B,
and 1PK-455C, PZR
Spray Valves 1RY455B
and 1RY455C
Controllers, POT settings
to 0 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Cue: PZR Spray Valve controllers
POTs are set to 0 | | | | |

PERFORMANCE CHECKLIST

STANDARDS

SAT UNSAT N/A

*5. Depress the PZR Spray Valves controllers AUTO pushbutton.

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Cue: *1PK-455B controller Auto pushbutton has been depressed*

- VERIFY/PLACE 1PK-455B, and 1PK-455C, Spray Valves Controllers, in AUTO

Cue: *1PK-455B controller Auto pushbutton is illuminated*

Cue: *1PK-455C controller Auto pushbutton has been depressed*

Cue: *1PK-455C controller Auto pushbutton is illuminated*

Cue: *PZR PRESS CONT DEV LOW HTRS ON annunciator 1-12-C1 just alarmed*

Cue: *PZR pressure is decreasing*

Cue: *PZR Spray valve controllers and Master PZR pressure controller are all increasing output demand*

*6. Place Master PZR pressure controller in MANUAL.

☐☐☐

Cue: *1PK-455A controller Manual pushbutton has been depressed*

- Place Master PZR pressure controller in MANUAL to stabilize plant.

Cue: *1PK-455A controller Manual pushbutton is illuminated*

PERFORMANCE CHECKLIST

STANDARDS

SAT UNSAT N/A

- *7. Raise PZR pressure by depressing decrease demand push on the Master PZR pressure Controller 1PK-455A

☐ ☐ ☐

- Control PZR pressure in manual.

NOTE: As Master PZR pressure controller decrease pushbutton is depressed provide the following cues

Cue: PZR Spray valve controller demand decreases.

Cue: PZR pressure decrease has stopped.

Cue: PZR pressure is increasing.

8. Check for indications of a failed PZR pressure channel

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Cue: All PZR pressure channels indicate the same pressure

- 0 Check for failed PZR pressure channel

Cue: This JPM is completed

RECORD STOP TIME_____

COMMENTS:

JOB PERFORMANCE MEASURE

JPM No.:B.1.c

TASK CONDITIONS:

1. You are the Unit NSO.
2. _BGP 100-5 is in progress, step 38 has just been completed.
3. RCS has been in Mode 4 for four hours.
4. All plant systems are normal for this point in the cooldown.
5. The standby CC pump has been started.
6. The RH system has been sampled and verified to have a boron concentration equal to the RCS boron concentration.

INITIATING CUES:

You have been directed by the Unit Supervisor to place the _A Train of the RH system in the shutdown cooling mode per BOP RH-6.

JOB PERFORMANCE MEASURE

Rev. 8, 8/2/2001

TASK TITLE: Place RH in Shutdown Cooling Mode

JPM No.: B.1.c (N-20)

TPO No: IV.C.RH-03

K&A No.:005000A4.01

K&A IMP. 3.6/3.4

TRAINEE: _____

DATE: ____/____/____

The Trainee: PASSED _____ this JPM

TIME STARTED: _____

FAILED _____

TIME FINISHED: _____

EVALUATION METHOD: PERFORM _____ SIMULATE _____

LOCATION: IN PLANT _____ SIMULATOR _____

MATERIALS:

None

GENERAL REFERENCES:

1. BOP RH-6, Placing the RH System in Shutdown Cooling (Rev. 20)
2. _BGP 100-5, Plant Shutdown and Cooldown (Rev. 28)

TASK STANDARDS:

Take the actions necessary to align the _A Train of the RH system for cooldown of the RCS.

TASK CONDITIONS:

1. You are the Unit NSO.
2. _BGP 100-5 is in progress, step 38 has just been completed.
3. RCS has been in Mode 4 for four hours.
4. All plant systems are normal for this point in the cooldown.
5. The standby CC pump has been started.
6. The RH system has been sampled and verified to have a boron concentration equal to the RCS boron concentration.

INITIATING CUES:

You have been directed by the Unit Supervisor to place the _A Train of the RH system in the shutdown cooling mode per BOP RH-6.

CRITICAL ELEMENTS: (*) 2, 3, 6, 8, 10, 13

APPROXIMATE COMPLETION TIME: 30 minutes

PERFORMANCE CHECKLIST

STANDARDS

SAT UNSAT N/A

RECORD START TIME _____

NOTE

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

1. Refer to BOP RH-6, Placing the RH System in Shutdown Cooling

- o LOCATE and OPEN BOP RH-6

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Note: Step 1 may be performed at any time.

Cue: All prerequisites are met

- *2. Establish CC flow to _A RH HX
Cue: _CC9412A open light is LIT

- o OPEN _CC9412A

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Cue: CC flow to the _A RH heat exchanger is 5100 gpm

- ENSURE CC flow to RH HX ~5000gpm

PERFORMANCE CHECKLIST

STANDARDS

SAT UNSAT N/A

*3. Align RH suction from hot legs
Cue: _SI8811A closed light is LIT

VERIFY/CLOSE:

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o _SI8811A

Cue: _CV8804A closed light is LIT

o _CV8804A

Cue: _A RH pump control switch is in the PULL TO LOCK position

o VERIFY/PLACE
 _RH01PA in PTL

VERIFY/CLOSE:

Cue: _SI8812A closed light is LIT

• _SI8812A

Cue: _CS009A closed light is LIT

o _CS009A

Cue: NLO reports that RH 8735 is LOCKED CLOSED

o DIRECT NLO to
 VERIFY/CLOSE
 _RH8735

ENSURE:

Cue: The highest RCS wide range temperature is 345 °F

o highest OPERABLE
 WR temp < 350 °F

Cue: _PI-403 is indicating 335 psig

o RCS pressure <
 337 psig

Cue: _PI-405A is indicating 335 psig

OPEN:

Cue: _RH8701B open light is LIT

• _RH8701B

Cue: _RH8701A open light is LIT

• _RH8701A

Cue: _A RH pump control switch is in the AFTER TRIP position

o PLACE _RH01PA in A/T

Cue: (If asked) The RH system has been filled and vented

PERFORMANCE CHECKLISTSTANDARDSSATUNSATN/A

4. RH pump _A mini-flow

ENSURE:

☐☐☐**Cue: _RH610 open light is LIT**

o _RH610 OPEN

Cue: The _RH610 control switch is in the AUTO position

o _RH610 control switch in AUTO

5. RH pump _A manual discharge isolation valve

☐☐☐**Cue: NLO reports that RH8724A is LOCKED OPEN**

o DIRECT NLO to VERIFY _RH8724A LOCKED OPEN

*6. RH HX _A outlet flow control valve

☐☐☐**Cue: _RH606 closed monitor light is LIT**

• VERIFY/CLOSE _RH606

7. RH HX _A bypass flow control valve

☐☐☐**Cue: _RH618 controller is in MANUAL and set at 0% demand**

o VERIFY/CLOSE _RH618 in Manual

*8. RH discharge header cross-tie

☐☐☐**Cue: _RH8716A closed light is LIT**

• CLOSE _RH8716A

9. RH to cold leg Isolation valve

☐☐☐**Cue: _SI8809A closed monitor light is NOT LIT**

o VERFIY/OPEN _SI8809A

PERFORMANCE CHECKLIST

STANDARDS

SAT

UNSAT

N/A

*10. Start _A RH pump

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Cue: _A RH pump run light is LIT

- START _A RH pump

Cue: _A RH pump amps increase to greater than 70 amps, then decrease to approximately 35 amps

11. Increase RH flow

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Cue: _RH 618 controller output increases as demand increases

- o SLOWLY ESTABLISH an increasing RH flow by ADJUSTING _RH618

Cue: RH flow slowly increases to 3300 gpm

12. RH flow control in automatic

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Cue: _RH618 controller AUTO pushbutton is LIT

- o PLACE _RH618 in AUTO

*13. Warm RH HX and commence RCS cooldown

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Cue: _RH606 is open to 5%

- TROTTLER OPEN _RH606 to 5%

Cue: This JPM is completed

RECORD STOP TIME _____

COMMENTS:

JOB PERFORMANCE MEASURE

JPM No.: B.1.d

TASK CONDITIONS:

1. You are the Unit NSO.
2. A primary LOCA is in progress.
3. RCS pressure is ~ 100 psig.
4. _BEP ES-1.3, Transfer to Cold Leg Recirculation is in progress, Step 8 has just been completed.
5. RWST level is at 6%.
6. The LO-3 RWST level annunciator _-6-A7 is LIT.
7. The CS pumps were shutdown when RWST level reached 7% during the completion of Step 7

INITIATING CUES:

You have been directed to perform Step 9, Align CS System for recirculation of _BEP ES-1.3, Transfer to Cold Leg Recirculation.

JOB PERFORMANCE MEASURE

Rev. 0, 9/3/2001

TASK TITLE: Align CS to Cold Leg Recirculation

JPM No.: B.1.d

TPO No: IV.D.EP-14

K&A No.: 000011EA1.12

K&A IMP. 4.1 / 4.4

TRAINEE: _____

DATE: ____/____/____

The Trainee: PASSED _____ this JPM

TIME STARTED: _____

FAILED _____

TIME FINISHED: _____

EVALUATION METHOD: PERFORM _____ SIMULATE _____

LOCATION: IN PLANT _____ SIMULATOR _____

MATERIALS:

None

GENERAL REFERENCES:

1. _BEP-1, Loss of Reactor or Secondary Coolant (Rev. 101)
2. _BEP ES-1.3, Transfer to Cold Leg Recirculation (U-1 Rev. 100, U-2 Rev. 101)
3. BAR _-6-A7, RWST LEVEL LO-3 (Rev. 4)

TASK STANDARDS:

Take the actions necessary to align Containment Spray for cold leg recirculation.

TASK CONDITIONS:

1. You are the Unit NSO.
2. A primary LOCA is in progress.
3. RCS pressure is ~ 100 psig.
4. _BEP ES-1.3, Transfer to Cold Leg Recirculation is in progress, Step 8 has just been completed
5. RWST level is at 6%.
6. The LO-3 RWST level annunciator _-6-A7 is LIT.
7. The CS pumps were shutdown when RWST level reached 7% during the completion of step 7.

INITIATING CUES:

You have been directed to perform Step 9, Align CS System for recirculation of _BEP ES-1.3, Transfer to Cold Leg Recirculation.

CRITICAL ELEMENTS: (*) 3, 4, 5

APPROXIMATE COMPLETION TIME: 8 minutes

NOTE

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

RECORD START TIME _____

- | | | | | |
|---|---|--------------------------|--------------------------|--------------------------|
| 1. Refer to Step 9 of <u>_BEP ES-1.3</u> ,
Transfer to Cold Leg Recirculation. | o LOCATE and OPEN
<u>_BEP ES-1.3</u> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | | | | |
| 2. Align CS for recirculation | CHECK: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Cue: <u>RWST level is 6%</u> | o RWST level < 12% | | | |
| Cue: <u>RWST Level Lo-3 status lights are LIT</u> | o RWST LEVEL LO-3
status lights LIT | | | |
| | | | | |
| *3. Align CS pump suction to the
CNMT Recirc Sump | • OPEN CS pump sump
suction valves: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Cue: <u>_CS009A open light is LIT</u> | • <u>_CS009A</u> | | | |
| Cue: <u>_CS009B open light is LIT</u> | • <u>_CS009B</u> | | | |

PERFORMANCE CHECKLIST

STANDARDS

SAT UNSAT N/A

*4. Isolate CS pump suction from the RWST

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- CLOSE CS pump RWST suction valves:

Cue: *_CS001A closed light is LIT*

- _CS001A

Cue: *_CS001B closed light is LIT*

- _CS001B

NOTE

In the following step, there is NOT an RNO direction and CS pumps can be started using the MCB control switches. Using the CS Actuation switches will also start both CS pumps

*5. Start both CS pumps using individual pump control switches or CS actuation switches.

☐☐☐

- VERIFY CS pumps:

- BOTH running

Cue: *_A CS pump RUN light is LIT*

- _A CS pump

Cue: *_B CS pump RUN light is LIT*

- _B CS pump

Cue: *This JPM is completed*

RECORD STOP TIME _____

COMMENTS:

JOB PERFORMANCE MEASURE

JPM No.: B.1.e

TASK CONDITIONS:

1. You are the Unit _ Assist NSO.
2. The unit is in mode 1, with a normal "at power" electrical lineup.
3. Diesel Generator _A has been running paralleled to the grid for 4 hours at 5400 KW.

INITIATING CUES:

1. The Unit Supervisor has just directed you to shutdown the _A Diesel Generator per BOP DG-12.
2. Electric Operations has been notified and expects the DG load to be reduced and then removed from parallel operation.

JOB PERFORMANCE MEASURE

Rev. 11, 7/30/2001

TASK TITLE: Unload and Shutdown a Diesel Generator

JPM No.: B.1.e (N-06)

TPO No: IV.C.DG-04

K&A No.: 064000A4.06

K&A IMP. 3.9/3.9

TRAINEE: _____

DATE: ____/____/____

The Trainee: PASSED _____ this JPM

TIME STARTED: _____

FAILED _____

TIME FINISHED: _____

EVALUATION METHOD: PERFORM _____ SIMULATE _____

LOCATION: IN PLANT _____ SIMULATOR _____

MATERIALS:

Copy of BOP DG-11T1, Diesel Generator Start/Stop Log (Rev. 1)

GENERAL REFERENCES:

1. BOP DG-11T1, Diesel Generator Start/Stop Log (Rev 1)
2. BOP DG-12, Diesel Generator Shutdown (Rev. 15)

TASK STANDARDS:

Perform the actions necessary to shutdown a diesel generator.

TASK CONDITIONS:

1. You are the Unit _ Assist NSO.
2. The unit is in mode 1, with a normal "at power" electrical lineup.
3. Diesel Generator _A has been running paralleled to the grid for 4 hours at 5400 KW.

INITIATING CUES:

1. The Unit Supervisor has just directed you to shutdown the _A Diesel Generator, per BOP DG-12.
2. Electric Operations has been notified and expects the DG load to be reduced and then removed from parallel operation.

CRITICAL ELEMENTS: (*) 2, 4, 9

APPROXIMATE COMPLETION TIME: 14 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.

- | | | | | |
|---|-----------------------------|--------------------------|--------------------------|--------------------------|
| 1. Refer to BOP DG-12, Diesel Generator Shutdown. | ◦ LOCATE and OPEN BOP DG-12 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|---|-----------------------------|--------------------------|--------------------------|--------------------------|

Cue: All prerequisites have been met

Note: This step may be performed at any time

NOTE

Cue the candidate at each plateau that the time frame has been met.

- | | | | |
|-------------------------------|--------------------------|--------------------------|--------------------------|
| *2. Reduce load on the _A DG. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|-------------------------------|--------------------------|--------------------------|--------------------------|

Cue: ***DG load is DECREASING***

- LOWER the DG Gov Adj control to REDUCE load to < 250 KW
- Reduce load on the DG per the schedule in the note:
 - 4100 KW for 2 min.
 - 2750 KW for 2 min.
 - 1400 KW for 15 min.
 - 0 KW for 5 minutes

PERFORMANCE CHECKLISTSTANDARDSSAT UNSAT N/A

3. Reduce reactive load.

☐☐☐**Cue: KVARs is reduced to zero**

- ADJUST DG KVARs to ZERO using the _A DG VOLT ADJ

*4. Open DG output breaker.

☐☐☐**Cue: ACB _413 open light is LIT**

- OPEN ACB _413

NOTE

The completion of BOP DG-11T1 is NOT required for this JPM.

5. Record time.

☐☐☐**Cue: Use current time**

- RECORD the time ACB _413 was opened on BOP DG-11T1

Cue: The completion of BOP DG-11T1 is not required for this JPM

6. DG ACB _413 auto re-close circuit arm selector switch.

☐☐☐**Cue: The auto re-close circuit arm selector switch is in the NORM position**

- VERIFY/PLACE the Auto Re-close Circuit Arm Selector Switch to the NORM position

PERFORMANCE CHECKLIST

STANDARDS

SAT UNSAT N/A

7. Start mode selector.

☐☐☐

Cue: The EA reports the start mode selector switch is in FAST

- DIRECT EA to VERIFY/PLACE the Start Mode Selector switch in FAST at _PL07J

8. Control mode selector switch.

☐☐☐

Cue: The EA reports the control mode selector switch is in REMOTE

- DIRECT the EA to VERIFY the Control Mode Selector Switch is in REMOTE

Note: The operator may check the white light NOT LIT

*9. Stop the _A DG.

☐☐☐

Cue: The DG start switch is in the STOP position

- PLACE the _A DG Start Switch to STOP

Cue: The STOP light is LIT

- CHECK STOP light LIT

10. Verify DG standby configuration.

☐☐☐

Cue: The five minute cooldown is complete

- WAIT for 5 minute auto cooldown cycle to complete

DIRECT EA to:

Cue: The EA reports that the DG pre-lube pump is RUNNING

- VERIFY/START the DG pre-lube pump at ~ 280 rpm

Cue: The EA reports that the DG has STOPPED

- REPORT when the DG has STOPPED

Cue: This JPM is completed

PERFORMANCE CHECKLIST

STANDARDS

SAT UNSAT N/A

RECORD STOP TIME _____

COMMENTS:

JOB PERFORMANCE MEASURE

JPM No.: B.1.f

TASK CONDITIONS:

1. You are the Unit _ Assist NSO.
2. The _A Component Cooling pump is running.
3. The _B Component Cooling pump is in standby.
4. An OOS is pending for the _A Component Cooling for routine maintenance.

INITIATING CUES:

The Unit Supervisor has directed you to swap Component Cooling pumps by starting the _B CC pump and stopping the _A CC pump per BOP CC-15.

JOB PERFORMANCE MEASURE

Rev. 0, 8/28/2001

TASK TITLE: Swap CC pump operations

JPM No.: B.1.f

TPO No: IV.C.CC-05

K&A No.: 008000A4.01

K&A IMP: 3.3 / 3.1

TRAINEE: _____

DATE: ____/____/____

The Trainee: PASSED _____ this JPM

TIME STARTED: _____

FAILED _____

TIME FINISHED: _____

EVALUATION METHOD: PERFORM _____ SIMULATE _____

LOCATION: IN PLANT _____

MATERIALS:

Copy of BOP CC-15, Switching Operating and Standby Component Cooling Water System Pumps (Rev. 4).

GENERAL REFERENCES:

BOP CC-15, Switching Operating and Standby Component Cooling Water System Pumps (Rev. 4).

TASK STANDARDS:

Take the actions necessary to switch Component Cooling Water Pumps per BOP CC-15 Switching Operating and Standby Component Cooling Water System Pumps.

TASK CONDITIONS:

1. You are an extra NSO.
2. The _A Component Cooling pump is running.
3. The _B Component Cooling pump is in standby.
4. An OOS is pending for the _A Component Cooling for routine maintenance.

INITIATING CUES:

The Unit Supervisor has directed you to swap Component Cooling pumps by starting the _B CC pump and stopping the _A CC pump per BOP CC-15.

CRITICAL ELEMENTS: (*) 4, 5

APPROXIMATE COMPLETION TIME: 10 minutes

PERFORMANCE CHECKLIST

STANDARDS

SAT UNSAT N/A

RECORD START TIME _____

NOTE

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

- | | | | | | |
|--|---|---------------------------|--------------------------|--------------------------|--------------------------|
| 1. Refer to BOP CC-15, Switching Operating and Standby Component Cooling System Pumps. | ° | LOCATE and OPEN BOP CC-15 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|--|---|---------------------------|--------------------------|--------------------------|--------------------------|

Note: Step 1 may be performed at any time.

- | | | | | | |
|--|---|--|--------------------------|--------------------------|--------------------------|
| 2. Review BOP CC-15, steps prior to main body. | ° | Review Prerequisites, Precautions, and Limitations and Actions | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|--|---|--|--------------------------|--------------------------|--------------------------|

- | | | | | | |
|---|---|---|--------------------------|--------------------------|--------------------------|
| 3. VERIFY/VENT the pump casing for the _B CC pump | ° | Dispatch an NLO to vent the pump casing for the _B CC pump. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|---|---|---|--------------------------|--------------------------|--------------------------|

Cue: NLO reports the B CC pump casing has been vented

- | | | | | | |
|--|---|---|--------------------------|--------------------------|--------------------------|
| *4. START _B Component Cooling Water Pump. | • | Start the _B Component Cooling water pump and monitor pump amps and CC system pressure. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|--|---|---|--------------------------|--------------------------|--------------------------|

Cue: The _B CC pump RUN light is LIT

Cue: _B CC pump amps indicate 65 amps 5 seconds after start and are steady

PERFORMANCE CHECKLIST

STANDARDS

SAT

UNSAT

N/A

NOTE

For the started pump current must drop below 50 amps within 5 seconds after starting the pump or the operator must immediately shutdown the pump per Precaution 7 of BOP CC-15.

*5. Shutdown the _B CC Pump



Cue: *The _B CC Pump STOP light is LIT* • STOP the _B CC pump

Cue: *The Unit Supervisor acknowledges concern with _B CC pump.* ° Inform the Unit Supervisor of problem with _B CC pump.

Cue: *This JPM is completed*

RECORD STOP TIME _____

COMMENTS:

JOB PERFORMANCE MEASURE

JPM No.: B.1.g

TASK CONDITIONS:

1. You are the Unit _ Assist NSO.
2. Release Tank 0WX026T liquid release is pending.

INITIATING CUES:

The Unit Supervisor directs you to perform Section F Steps 11 and 12 of BCP 400-TWX26 in preparation for this release.

JOB PERFORMANCE MEASURE

Rev. 0, 8/28/2001

TASK TITLE: Change RM-11 Setpoints in Preparation for a Liquid Release JPM No.: B.1.g

TPO No: IV.C.WX-02

K&A No.: 073000A4.01

K&A IMP: 3.9/3.9

TRAINEE: _____

DATE: ____/____/____

The Trainee: PASSED _____ this JPM

TIME STARTED: _____

FAILED _____

TIME FINISHED: _____

EVALUATION METHOD: PERFORM _____ SIMULATE _____

LOCATION: IN PLANT _____ SIMULATOR _____

MATERIALS:

Copy of BCP 400- TWX26 completed up to Section F Step 11

GENERAL REFERENCES:

BCP 400- TWX26, Liquid Radwaste Release Form for Release Tank 0WX26T (Rev. 21).

TASK STANDARDS:

Take the actions necessary to perform Section F steps 11 and 12 of BCP 400-TWX26.

TASK CONDITIONS:

1. You are the Unit _ Assist NSO.
2. Release Tank 0WX026T liquid release is pending.

INITIATING CUES:

The Unit Supervisor directs you to perform Section F Steps 11 and 12 of BCP 400-TWX26 in preparation for this release.

CRITICAL ELEMENTS: (*) 3, 4, 6, 7, 8, 11, 12

APPROXIMATE COMPLETION TIME: 15 minutes

PERFORMANCE CHECKLIST

STANDARDS

SAT UNSAT N/A

RECORD START TIME _____

NOTE

If this JPM is performed on the simulator, only the underlined cue need to be provided to the trainee.

To initiate this JPM, hand the partially completed BCP 400-TWX26 to the candidate.

1. Refer to the partially completed BCP 400-TWX26

- REVIEW BCP 400-TWX26 for completeness up to Section F Step 10

☐ ☐ ☐

- *2. PERFORM a channel check on OPR010.

☐ ☐ ☐

NOTE: OPR010 rad monitor is indicated on RM-11 as OPS110

Cue: *Grid 1 is selected*

Cue: *0110 is keyed in*

Cue: *The Select pushbutton has been depressed*

Cue: *RM-11 status for OPR010 is green*

- SELECT OPR010
- SELECT Grid 1
- KEY IN "0110"
- DEPRESS the SEL key
- Verify OPR010 indicates Green status.

PERFORMANCE CHECKLISTSTANDARDSSAT UNSAT N/A

*3. PERFORM a loss of flow check on OPR010.

☐☐☐

Cue: *The Flow key has been depressed*

Cue: *Loss of sample flow alarm message indicated for OPS110 and status indication has changed to Dark Blue*

- DEPRESS the FLOW key
 - Verify loss of sample alarm and status of OPR010 changes to Dark Blue.

*4. Restore OPR010 to proper status.

☐☐☐

Cue: *The Flow key has been depressed*

Cue: *Loss of sample flow condition clears for OPS110 and status indication has changed to Green*

- DEPRESS the FLOW key
 - Verify loss of sample alarm status clears and OPR010 changes to Green.

5. VERIFY/ADJUST the HIGH and ALERT setpoints for OPR010 to the values in section E.8. per Attachment A guidance.

- Refer to Attachment A to adjust OPR010 setpoints per step 12

☐☐☐

*6. Select Grid 1 and select monitor OPS110 by typing 0110 and Depressing the ENTER key

☐☐☐

Cue: *OPR010 has been selected*

- SELECT OPR010
 - SELECT Grid 1
 - KEY IN "0110"
 - DEPRESS the SEL key

PERFORMANCE CHECKLISTSTANDARDSSATUNSATN/A

*7. Select channel items

Cue: *The channel item key has been pressed*

- DEPRESS Channel Item key

☐☐☐

*8. RM-11 supervisory mode

Cue: *RM-11 is in the supervisory mode of operation*

- PLACE RM-11 in Supervisory Mode by depressing Supervisor/Normal key

☐☐☐

9. Select high alarm setpoint channel

Cue: *The Channel item key has been depressed***Cue: *"9" has been keyed in*****Cue: *The select key has been pressed***

- DEPRESS Channel Item key
- KEY IN "9"
- DEPRESS the SEL key

☐☐☐

10. High alarm setpoint

Cue: *High Alarm setpoint indicates 3.23E-6*

- Verify high alarm setpoint on OPR010 is 3.23E-6.
- RECORD value

☐☐☐

*11. Select alert alarm channel

Cue: *The channel item key has been pressed***Cue: *"10" has been keyed in*****Cue: *The select key has been pressed***

- DEPRESS Channel Item key
- KEY IN "10"
- DEPRESS the SEL key

☐☐☐

PERFORMANCE CHECKLIST

STANDARDS

SAT

UNSAT

N/A

*12. Alert alarm setpoint.

☐☐☐

- Change alert alarm setpoint on OPR010 to 2.02E-6
 - KEY IN "202-6"
 - DEPRESS ENTER key
 - Verify new value displayed
- RECORD new value

Cue: *The alert alarm setpoint has been entered*

Cue: *Several seconds have passed and the new alert alarm setpoint is displayed*

13. RM-11 Normal mode

☐☐☐

Cue: *RM-11 is in the normal mode of operation*

Cue: *This JPM is completed*

- PLACE RM-11 in Normal Mode by depressing Supervisor/Normal key

RECORD STOP TIME_____

COMMENTS:

JOB PERFORMANCE MEASURE

JPM No.: B.2.a

TASK CONDITIONS:

1. You are an extra NSO.
2. A steamline break inside containment is occurring.
3. A safety injection has occurred.
4. _BFR-H.1, Response to Loss of Secondary Heat Sink, is in progress at Step 7e.

INITIATING CUES:

The Unit Supervisor has directed you to pull Feedwater Isolation Auxiliary Relay fuses per Step 7e RNO of _BFR-H.1, Response to Loss of Secondary Heat Sink.

JOB PERFORMANCE MEASURE

Rev. 3, 8/7/2001

TASK TITLE: Local Reset of FW Isolation Signal

JPM No.: B.2.a (N-43)

TPO No: IV.D.EF-03 (RO) K&A No.:013000A4.02
VII.D.FR-009-A (SRO)

K&A IMP: 4.3/4.4

TRAINEE: _____

DATE: ____/____/____

The Trainee: PASSED _____ this JPM

TIME STARTED: _____

FAILED _____

TIME FINISHED: _____

EVALUATION METHOD: PERFORM _____ SIMULATE _____

LOCATION: IN PLANT _____

MATERIALS:

1. Keys to or drawings of cabinets _PA27J and _PA28J
2. Copy of _BFR-H.1, Response to Loss of Secondary Heat Sink (Rev. 101)

GENERAL REFERENCES:

_BFR-H.1, Response to Loss of Secondary Heat Sink (Rev. 101)

TASK STANDARDS:

Take the actions required to deenergize FW isolation auxiliary relays per _BFR-H.1, Response to Loss of Secondary Heat Sink

TASK CONDITIONS:

1. You are an extra NSO.
2. A steamline break inside containment is occurring.
3. A safety injection has occurred.
4. _BFR-H.1, Response to Loss of Secondary Heat Sink, is in progress at Step 7e.

INITIATING CUES:

The Unit Supervisor has directed you to pull Feedwater Isolation Auxiliary Relay fuses per Step 7e RNO of _BFR-H.1, Response to Loss of Secondary Heat Sink.

CRITICAL ELEMENTS: (*) 2, 4, 5

APPROXIMATE COMPLETION TIME: 10 minutes

PERFORMANCE CHECKLIST

STANDARDS

SAT UNSAT N/A

RECORD START TIME _____

1. Refer to _BFR-H.1, Response to Loss of Secondary Heat Sink.

- LOCATE and OPEN
_BFR-H.1 to Step 7.e
RNO

☐☐☐

Note: Step 1 may be performed at any time.

NOTE

Provide the examinee a copy of _BFR-H.1.

- *2. Obtain keys for _PA27J and
_PA28J

- Go to Work Execution
Center (WEC) to obtain
keys for:

☐☐☐

Note: The examinee should simulate how to obtain appropriate keys

- _PA27J
- _PA28J

**Cue: The keys for _PA27J and
_PA28J have been obtained.**

3. Go to AEER

- LOCATE the Auxiliary
Electrical Equipment
Room

☐☐☐

**Note: 451' elevation, Auxiliary
Building**

CAUTION

The next two steps are to be simulated only. Have the trainee point out the applicable fuses in the cabinets. If access to the inside of the cabinets is not allowed, use the appropriate photo or drawing. Steps 3 and 4 may be performed in any order.

PERFORMANCE CHECKLISTSTANDARDSSATUNSATN/A

*4. Pull fuses at _PA27J

- LOCATE _PA27J

☐☐☐

REMOVE:

Cue: Fuse 24 is removed

- Fuse FU-24

Cue: Fuse 27 is removed

- Fuse FU-27

*5. Pull fuses at _PA28J

- LOCATE _PA28J

☐☐☐

REMOVE:

Cue: Fuse 24 is removed

- Fuse FU-24

Cue: Fuse 27 is removed

- Fuse FU-27

NOTE

If the trainee elects to contact the MCR to verify FW ISOL ACTD relay lights NOT LIT, then provide the following:

Cue: The Unit Supervisor reports that the FW ISOL ACTD relay lights are NOT LIT.

Cue: This JPM is completed

6. FW ISOL ACTD relay lights status At _PM06J:

☐☐☐

Cue: The feedwater isolation actuated relay lights are NOT LIT

- VERIFY the FW ISOL ACTD relay lights NOT LIT

Cue: This JPM is completed

RECORD STOP TIME_____

COMMENTS:

JOB PERFORMANCE MEASURE

JPM No.: B.2.b

TASK CONDITIONS:

1. You are the Unit 1 Auxiliary Building NLO.
2. Unit 1 has experienced a large break LOCA.
3. Unit 1 containment hydrogen concentration is 3.0%.
4. Unit 1 containment temperature is 220°F and pressure is 21 psia.

INITIATING CUES:

The Unit Supervisor has directed you to startup the 0A Hydrogen Recombiner and align it to Unit 1 using Division 12 powered valves according to BOP OG-10, Startup of a Hydrogen Recombiner.

JOB PERFORMANCE MEASURE

Rev. 1, 8/3/2001

TASK TITLE: Startup of a Hydrogen Recombiner

JPM No.: B.2.b (N-31)

TPO No: IV.D.QZ-13

K&A No.: 028000A2.02

K&A IMP. 3.5/3.9

TRAINEE: _____

DATE: ____/____/____

The Trainee: PASSED _____ this JPM

TIME STARTED: _____

FAILED _____

TIME FINISHED: _____

EVALUATION METHOD: PERFORM _____ SIMULATE _____

LOCATION: IN PLANT _____

MATERIALS:

1. Keys #207 and #491 for the hydrogen recombiner.
2. Copy of BOP OG-10.

GENERAL REFERENCES:

BOP OG-10, Startup of a Hydrogen Recombiner (Rev. 7)

TASK STANDARDS:

Perform the required operator actions of BOP OG-10, Startup of a Hydrogen Recombiner.

TASK CONDITIONS:

1. You are the Unit 1 Auxiliary Building NLO.
2. Unit 1 has experienced a large break LOCA.
3. Unit 1 containment hydrogen concentration is 3.0%.
4. Unit 1 containment temperature is 220°F and pressure is 21 psia.

INITIATING CUES:

The Unit Supervisor has directed you to startup the 0A Hydrogen Recombiner and align it to Unit 1 using Division 12 powered valves according to BOP OG-10, Startup of a Hydrogen Recombiner.

CRITICAL ELEMENTS: (*) 5, 7, 11, 12, 13

APPROXIMATE COMPLETION TIME: 15 minutes

PERFORMANCE CHECKLIST

STANDARDS

SAT

UNSAT

N/A

NOTE

For cues where as found equipment status meets standard then ***Cue: condition is as seen.***

RECORD START TIME _____

- | | | | | |
|---|-----------------------------|--------------------------|--------------------------|--------------------------|
| 1. Refer to BOP OG-10, Startup of a Hydrogen Recombiner | ◦ LOCATE and OPEN BOP OG-10 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|---|-----------------------------|--------------------------|--------------------------|--------------------------|

Note: Step 1 may be performed at any time.

- | | | | | |
|--|---|--------------------------|--------------------------|--------------------------|
| 2. Obtain key #491 to unlock the panel door and key #207 to operate the start switch | ◦ PROCEED to the SM office and OBTAIN keys for 0OG04J | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|--|---|--------------------------|--------------------------|--------------------------|

Cue: (If asked) Radiation protection have been notified for surveys and reported that all areas are satisfactory

- | | | | | |
|--|-------------------------|--------------------------|--------------------------|--------------------------|
| 3. Locate 0A hydrogen recombinder control cabinet 0OG04J | ◦ LOCATE 0OG04J | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | ◦ UNLOCK using key #491 | | | |

Note: 401' AB, P13

NOTE

For the rest of this JPM, use cues only when plant equipment is not available to provide this information.

- | | | | | |
|-----------------------------|------|--------------------------|--------------------------|--------------------------|
| 4. Set temperature controls | SET: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|-----------------------------|------|--------------------------|--------------------------|--------------------------|

Cue: 1TIC-0GO47 is set at 1325 °F ◦ 1TIC-0GO47 at 1325 °F

Cue: 1TSH-0GO45 is set at 1325 °F ◦ 1TSH-0GO45 at 1325 °F

Cue: 1TSH-0GO51 is set at 150 °F ◦ 1TSH-0GO51 at 150 °F

PERFORMANCE CHECKLISTSTANDARDSSATUNSATN/A

*5 Align breakers

CLOSE:

☐☐☐***Cue: CB-1 is closed***

• CB-1

Cue: CB-2 is closed

• CB-2

Cue: CB-3 is closed

• CB-3

Cue: CB-4 is closed

• CB-4

Cue: CB-5 is closed

• CB-5

6. Lineup the hydrogen recombiner

☐☐☐***Cue: HS-1 is in the STOP position***

◦ VERIFY/PLACE HS-1 in STOP

Cue: KS-1 is set at 2 hours

◦ SET KS-1 to 2 hours

VERIFY in AUTO:

Cue: JS-1 is in AUTO

◦ JS-1

Cue: JS-2 is in AUTO

◦ JS-2

*7. Line up Division 12 powered valves

DIRECT Unit 1 NSO to OPEN:

☐☐☐***Cue: Unit 1 NSO reports that 1OG080 is OPEN***

• 1OG080

Cue: Unit 1 NSO reports that 1OG084 is OPEN

• 1OG084

Cue: Unit 1 NSO reports that 1OG082 is OPEN

• 1OG082

Cue: Unit 1 NSO reports that 1OG079 is OPEN

• 1OG079

<u>PERFORMANCE CHECKLIST</u>	<u>STANDARDS</u>	<u>SAT</u>	<u>UNSAT</u>	<u>N/A</u>
8. Locate local control panel 0OG09J	◦ LOCATE 0OG09J	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Note: Unit 2 lower cable spreading room, 439' Q25				
9. Hydrogen recombiner "A" discharge valve	At 0OG09J:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Note: valve can be locally checked by valve indication at 401' U15 next to 0A Hydrogen Recombiner.	• VERIFY/OPEN 0OG060			
Cue: 0OG060 indication red light is lit				
10. Locate local control panel 0OG08J	• LOCATE 0OG08J	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Note: 401' AB, P13				
*11. Hydrogen recombiner "A" suction valve.	At 0OG08J:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Note: Normal as found position is closed green light lit.	• VERIFY/OPEN 0OG059			
Cue: 0OG059 indication red light is lit				
*12. Start the hydrogen recombiner	At 0OG04J:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cue: HS-1 is in the START position	• Using key #207, PLACE key-lock switch HS-1 in START			
*13. Establish flow rate	• THOTTLE 0OG059 to obtain > 70 SCFM as indicated on 1FI-0OG041	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cue: 1FI-0OG041 indicates 80 SCFM				

PERFORMANCE CHECKLIST

STANDARDS

SAT

UNSAT

N/A

14. Locate the hydrogen analyzer
0OG05J

- LOCATE 0OG05J

☐☐☐

Note: 401' AB, P15

15. Place hydrogen analyzer in
operation

At 0OG05J PLACE:

☐☐☐

**Cue: HS-12 is in the BLOWER
OUTLET position**

- HS-12 in BLOWER
OUTLET

Cue: CB-1 is in the ON position

- CB-1 in ON

**Cue: HS-10 is in the OPERATE
position**

- HS-10 in OPERATE

Cue: This JPM is completed

RECORD STOP TIME_____

COMMENTS:

JOB PERFORMANCE MEASURE

JPM No.: B.2.c

TASK CONDITIONS:

1. You are a NLO.
2. A fire exists in the _B D/G Room as determined by an alarm at _PM09J and local report.
3. The automatic actuation of CO₂ to the _B D/G Room has failed.

INITIATING CUES:

The Fire Chief has directed you to manually initiate CO₂ to _B D/G Room using BOP FP-22.

JOB PERFORMANCE MEASURE

Rev. 3, 7/25/00

TASK TITLE: Operate the Fire Detection/Alarm Equipment

JPM No.: B.2.c (N-49a)

TPO No.: IV.C.FP-02

K&A No.: 086000A2.04

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 _____

MATERIALS:

1. BOP FP-22, Manual Operation of CO2 and Halon Fire Suppression Systems
2. BOP FP-22A20(1B)/25(2B), Manual Initiation of CO2 to _B Diesel Generator Room.

GENERAL REFERENCES:

1. BOP FP-22, Manual Operation of CO2 and Halon Fire Suppression Systems. (Rev. 5)
2. BOP FP-22A20/25, Manual Initiation of CO2 to _B Diesel Generator Room. (Rev. 0)

TASK STANDARDS:

Perform actions necessary to manually initiate CO2 to _B D/G Room.

TASK CONDITIONS:

1. You are a NLO.
2. A fire exists in the _B D/G Room as determined by an alarm at _PM09J and local report.
3. The automatic actuation of CO2 to the _B D/G Room has failed.

INITIATING CUES:

The Fire Chief has directed you to manually initiate CO2 to _B D/G Room using BOP FP-22.

CRITICAL ELEMENTS: (*) 9,10,11,12 &14

APPROXIMATE COMPLETION TIME: 14 minutes

RECORD START TIME _____

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

o Locate and Open procedure BOP FP-22.

☐☐☐

Note: Provide the Candidate with a copy of BOP FP-22.

Cue: *All prerequisites, precautions, limitations & actions have been met.*

2. Determine location of Fire Zone affected.

o Determine fire location using _PM09J or report.

☐☐☐

Cue: *Fire has been verified in the _B Diesel Generator Room.*

3. Refer to Section G to determine attachment for affected zone.

o Identify BOP FP-22A20/22A25, locate and open.

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Note: Provide the Candidate with a copy of BOP FP-22A20 for 1B or BOP FP-22A25 for the 2B DG.

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

PERFORMANCE CHECKLIST**STANDARDS****SAT UNSAT N/A**

4. Prepare to actuate CO2 to room. Request Center Desk:

**Cue: Security reports room is CLEAR.**

- Call Security to ensure room clear of personnel.

Cue: Page announcement has been made.

- Page plant for pending initiation.

5. Ensure system enabled.

Verify:

**Cue: 1B DG – 1CO5022B is OPEN.
(401' K7)**

- Block valve _CO5022B is open.

**2B DG - 2CO5022B is OPEN.
(401' K28)****Cue: 1B DG – 1HS-CO004 is NOT in ABORT.(401' K7)**

- Abort Switch _HS-CO004 NOT in abort.

2B DG - 2HS-CO004 is NOT in ABORT.(401' K29)6. Attempt to actuate the system using the CO2 pushbuttons.
(401' : 1B DG – K7/K8 and 2B DG K28/ K29)

Pull down cover/ depress pushbutton:(simulate)

**Cue: _HS-CO00_ pushbutton is DEPRESSED.**

- _HS-CO002 OR
- _HS-CO003

PERFORMANCE CHECKLIST

STANDARDS

SAT UNSAT N/A

7. Verify system actuates.

Verify Alarm Actuation:

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Cue: **CO2 SYSTEM ACTUATED light NOT LIT on 2CO03J.**

o "CO2 SYSTEM ACTUATED" on _CO03J.

Cue: **No suppression alarm received on _PM09J.**

o Suppression alarm on _PM09J.

Note: If candidate elects to try other pushbutton-- give same cues.

8. Determine manual initiation without control power is required.

Proceed to step B.1.

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*9. Break glass on appropriate master EMPC Cabinet

• Locate the Master EMPC (0CO09J) and (simulate) breaking the glass cover.

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Cue: **Glass has been broken on 0CO09J cover.**

*10. Prepare to manually initiate CO2 to room .

Verify/Open:

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Cue: **0CO09J actuator lever is in the OPEN position.**

• Place Master EMPC (0CO09J) to open.

Cue: **Block valve is OPEN. (already checked step #5)**

o Block Valve (_CO5022B)

PERFORMANCE CHECKLIST

STANDARDS

SAT UNSAT N/A

*11. Break glass on appropriate EMPC Cabinet (_CO03JB, 401' K7 for 1B / K28 for 2B).

- Identify the proper EMPC as _CO03JB and (simulate) break the glass cover.

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Cue: *Glass has been broken on _CO03JB cover.*

*12. Attempt to actuate using the EMPC actuator lever.

- Place the ACTUATOR LEVER for _CO03JB in the OPEN position (simulate) and note time.

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Cue: *_CO03JB actuator lever is in the OPEN position, time noted.*

13. Determine initiation occurs.

- Verify suppression alarm received on _PM09J.

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Cue: *NSO reports _S-37 suppression alarm RECEIVED.*

NOTE

The time associated with the next step is the minimum time to ensure the area is flooded with CO2.

*14. Terminate CO2.

- After 1 min. 00 sec. for the 1B DG or

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Cue: *1B DG - 1min. 00 sec. has passed.*

- After 1 min. 40 sec. for the 2B DG

2B DG - 1min. 40 sec. has passed

has passed, close:

Cue: *_CO03JB EMPC actuator lever is in CLOSED position.*

- EMPC _CO03JB actuator lever.

Cue: *_CO5022B is CLOSED.*

- _CO5022B block valve

PERFORMANCE CHECKLIST

STANDARDS

SAT UNSAT N/A

RECORD STOP TIME

COMMENTS: