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.		

B.2 Facility Walk-Through

a. Engineered Safety Features Actuation System / Local Reset of Feedwater Isolation Signal (JPM N-43)	D, L	2
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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

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:

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.

CRITICAL ELEMENTS: (*) 5c, 7

APPROXIMATE COMPLETION TIME: 18 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. 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 CHECKLIST	STANDARDS	SAT	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	• OPEN at least one:	❑	❑	❑
Cue: (if chosen) _CV112D open light is LIT	o _CV112D			
Cue: (if chosen) _CV112E open light is LIT	o _CV112E			
	• CLOSE at least one:			
Cue: (if chosen) _CV112B closed light is LIT	o _CV112B			
Cue: (if chosen) _CV112C closed light is LIT	o _CV112C			
	• MAXIMIZE charging flow:			
Cue: (cue with the operating pump) _A/B CV pump run light is LIT	o VERIFY _A/B CV pump RUNNING			
Cue: _CV-121 demand is at 100%	o _CV-121			
Cue: _CV182 demand is at 100%	o _CV182			
Cue: Charging flow is 160 gpm				
Cue: Letdown is established	o VERIFY letdown ESTABLISHED			
Cue: Control rods are withdrawing				
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 **Cue:** ***This JPM is completed***	o CHECK rod control bank height > LO-2 insertion limit			

RECORD STOP TIME _____

COMMENTS:

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

PERFORMANCE CHECKLIST	STANDARDS	SAT	UNSAT	N/A
*5. Depress the PZR Spray Valves controllers AUTO pushbutton. ***Cue: 1PK-455B controller Auto pushbutton has been depressed*** ***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***	• VERIFY/PLACE 1PK-455B, and 1PK-455C, Spray Valves Controllers, in AUTO	❑	❑	❑
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*** ***Cue: 1PK-455A controller Manual pushbutton is illuminated***	• Place Master PZR pressure controller in MANUAL to stabilize plant.	❑	❑	❑

PERFORMANCE CHECKLIST	STANDARDS	SAT	UNSAT	N/A
*7. Raise PZR pressure by depressing decrease demand push on the Master PZR pressure Controller 1PK-455A ***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.***	• Control PZR pressure in manual.	❑	❑	❑
8. Check for indications of a failed PZR pressure channel ***Cue: All PZR pressure channels indicate the same pressure*** ***Cue: <u>This JPM is completed</u>***	o Check for failed PZR pressure channel	❑	❑	❑

RECORD STOP TIME_____

COMMENTS:

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 **Note: Step 1 may be performed at any time.** **Cue:** ***All prerequisites are met***	o LOCATE and OPEN BOP RH-6	❑	❑	❑
*2. Establish CC flow to _A RH HX ***Cue: _CC9412A open light is LIT*** ***Cue: CC flow to the _A RH heat exchanger is 5100 gpm***	o OPEN _CC9412A • 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*** ***Cue: _CV8804A closed light is LIT*** ***Cue: _A RH pump control switch is in the PULL TO LOCK position***	VERIFY/CLOSE: o _SI8811A o _CV8804A o VERIFY/PLACE _RH01PA in PTL	❑	❑	❑
Cue: _SI8812A closed light is LIT ***Cue: _CS009A closed light is LIT*** ***Cue: <u>NLO reports that _RH 8735 is LOCKED CLOSED</u>***	VERIFY/CLOSE: • _SI8812A o _CS009A o DIRECT NLO to VERIFY/CLOSE _RH8735			
Cue: The highest RCS wide range temperature is 345 °F ***Cue: _PI-403 is indicating 335 psig*** ***Cue: _PI-405A is indicating 335 psig***	ENSURE: o highest OPERABLE WR temp < 350 °F o RCS pressure < 337 psig			
Cue: _RH8701B open light is LIT ***Cue: _RH8701A open light is LIT*** ***Cue: _A RH pump control switch is in the AFTER TRIP position*** ***Cue: <u>(If asked) The RH system has been filled and vented</u>***	OPEN: • _RH8701B • _RH8701A o PLACE _RH01PA in A/T			

PERFORMANCE CHECKLIST	STANDARDS	SAT	UNSAT	N/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		❑	❑	❑
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		❑	❑	❑
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		❑	❑	❑
Cue: _RH618 controller AUTO pushbutton is LIT	o PLACE _RH618 in AUTO			
*13. Warm RH HX and commence RCS cooldown		❑	❑	❑
Cue: _RH606 is open to 5%	• TROTTLE OPEN _RH606 to 5%			
Cue: <u>This JPM is completed</u>				
RECORD STOP TIME _____				

COMMENTS:

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

PERFORMANCE CHECKLIST	STANDARDS	SAT	UNSAT	N/A

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 _BEP ES-1.3, Transfer to Cold Leg Recirculation.	o LOCATE and OPEN _BEP ES-1.3	❑	❑	❑
2. Align CS for recirculation	CHECK:	❑	❑	❑
Cue: RWST level is 6%	o RWST level < 12%			
Cue: RWST Level Lo-3 status lights are LIT	o RWST LEVEL LO-3 status lights LIT			
*3. Align CS pump suction to the CNMT Recirc Sump	• OPEN CS pump sump suction valves:	❑	❑	❑
Cue: _CS009A open light is LIT	• _CS009A			
Cue: _CS009B open light is LIT	• _CS009B			

PERFORMANCE CHECKLIST	STANDARDS	SAT	UNSAT	N/A
*4. Isolate CS pump suction from the RWST ***Cue: _CS001A closed light is LIT*** ***Cue: _CS001B closed light is LIT***	• CLOSE CS pump RWST suction valves: • _CS001A • _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. ***Cue: _A CS pump RUN light is LIT*** ***Cue: _B CS pump RUN light is LIT*** ***Cue: <u>This JPM is completed</u>***	• VERIFY CS pumps: • BOTH running • _A CS pump • _B CS pump	❑	❑	❑

RECORD STOP TIME _____

COMMENTS:

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

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 DG-12, Diesel Generator Shutdown. **Cue:** ***All prerequisites have been met*** **Note: This step may be performed at any time**	◦ LOCATE and OPEN BOP DG-12	❑	❑	❑

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

*2. Reduce load on the _A DG. ***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 CHECKLIST	STANDARDS	SAT	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 ***Cue: The completion of BOP DG-11T1 is not required for this JPM***	○ RECORD the time ACB _413 was opened on BOP DG-11T1			
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:

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. **Note: Step 1 may be performed at any time.**	° LOCATE and OPEN BOP CC-15	❑	❑	❑
2. Review BOP CC-15, steps prior to main body.	° Review Prerequisites, Precautions, and Limitations and Actions	❑	❑	❑
3. VERIFY/VENT the pump casing for the _B CC pump ***Cue: NLO reports the _B CC pump casing has been vented***	° Dispatch an NLO to vent the pump casing for the _B CC pump.	❑	❑	❑
*4. START _B Component Cooling Water Pump. ***Cue: The _B CC pump RUN light is LIT*** ***Cue: _B CC pump amps indicate 65 amps 5 seconds after start and are steady***	• Start the _B Component Cooling water pump and monitor pump amps and CC system pressure.	❑	❑	❑

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:

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 0PR010.		❑	❑	❑

NOTE: 0PR010 rad monitor is indicated on RM-11 as 0PS110

Cue: Grid 1 is selected

Cue: 0110 is keyed in

Cue: The Select pushbutton has been depressed

Cue: RM-11 status for 0PR010 is green

- SELECT 0PR010
  - SELECT Grid 1
  - KEY IN "0110"
  - DEPRESS the SEL key
- Verify 0PR010 indicates Green status.

PERFORMANCE CHECKLIST	STANDARDS	SAT	UNSAT	N/A
*3. PERFORM a loss of flow check on 0PR010. ***Cue: The Flow key has been depressed*** ***Cue: Loss of sample flow alarm message indicated for 0PS110 and status indication has changed to Dark Blue***	• DEPRESS the FLOW key • Verify loss of sample alarm and status of 0PR010 changes to Dark Blue.	❑	❑	❑
*4. Restore 0PR010 to proper status. ***Cue: The Flow key has been depressed*** ***Cue: Loss of sample flow condition clears for 0PS110 and status indication has changed to Green***	• DEPRESS the FLOW key • Verify loss of sample alarm status clears and 0PR010 changes to Green.	❑	❑	❑
5. VERIFY/ADJUST the HIGH and ALERT setpoints for 0PR010 to the values in section E.8. per Attachment A guidance.	° Refer to Attachment A to adjust 0PR010 setpoints per step 12	❑	❑	❑
*6. Select Grid 1 and select monitor 0PS110 by typing 0110 and Depressing the ENTER key ***Cue: 0PR010 has been selected***	• SELECT 0PR010 • SELECT Grid 1 • KEY IN "0110" • DEPRESS the SEL key	❑	❑	❑

PERFORMANCE CHECKLIST	STANDARDS	SAT	UNSAT	N/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 0PR010 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 0PR010 to 2.02E-6 • KEY IN "202-6" • DEPRESS ENTER key • Verify new value displayed			
Cue: The alert alarm setpoint has been entered ***Cue: Several seconds have passed and the new alert alarm setpoint is displayed***				
	° RECORD new value			
13. RM-11 Normal mode		❑	❑	❑
Cue: RM-11 is in the normal mode of operation ***Cue: <u>This JPM is completed</u>***	• PLACE RM-11 in Normal Mode by depressing Supervisor/Normal key			

RECORD STOP TIME_____

COMMENTS:

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 K&A IMP: 4.3/4.4
VII.D.FR-009-A (SRO)

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. **Note: Step 1 may be performed at any time.**	° LOCATE and OPEN _BFR-H.1 to Step 7.e RNO	❑	❑	❑

NOTE

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

*2. Obtain keys for _PA27J and _PA28J **Note: The examinee should simulate how to obtain appropriate keys** ***Cue: The keys for _PA27J and _PA28J have been obtained.***	• Go to Work Execution Center (WEC) to obtain keys for: • _PA27J • _PA28J	❑	❑	❑
3. Go to AEER **Note: 451' elevation, Auxiliary Building**	• LOCATE the Auxiliary Electrical Equipment Room	❑	❑	❑

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 CHECKLIST	STANDARDS	SAT	UNSAT	N/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:

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 **Note: Step 1 may be performed at any time.**	° LOCATE and OPEN BOP OG-10	❑	❑	❑
2. Obtain key #491 to unlock the panel door and key #207 to operate the start switch ***Cue: (If asked) Radiation protection have been notified for surveys and reported that all areas are satisfactory***	° PROCEED to the SM office and OBTAIN keys for 0OG04J	❑	❑	❑
3. Locate 0A hydrogen recombiner control cabinet 0OG04J **Note: 401' AB, P13**	° LOCATE 0OG04J ° UNLOCK using key #491	❑	❑	❑

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:	❑	❑	❑
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 CHECKLIST	STANDARDS	SAT	UNSAT	N/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			

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

PERFORMANCE CHECKLIST	STANDARDS	SAT	UNSAT	N/A
14. Locate the hydrogen analyzer 0OG05J **Note: 401' AB, P15**	• LOCATE 0OG05J	❑	❑	❑
15. Place hydrogen analyzer in operation ***Cue: HS-12 is in the BLOWER OUTLET position*** ***Cue: CB-1 is in the ON position*** ***Cue: HS-10 is in the OPERATE position*** ***Cue: This JPM is completed***	At 0OG05J PLACE: • HS-12 in BLOWER OUTLET • CB-1 in ON • HS-10 in OPERATE	❑	❑	❑

RECORD STOP TIME_____

COMMENTS:

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 CO_2 to the _B D/G Room has failed.

INITIATING CUES:

The Fire Chief has directed you to manually initiate CO_2 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 CO_2 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 CO_2 to the _B D/G Room has failed.

INITIATING CUES:

The Fire Chief has directed you to manually initiate CO_2 to _B D/G Room using BOP FP-22.

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

APPROXIMATE COMPLETION TIME: 14 minutes

PERFORMANCE CHECKLIST	STANDARDS	SAT	UNSAT	N/A
RECORD START TIME _____				
1. Refer to BOP FP-22, Manual Operation of the Carbon Dioxide and Halon Fire Suppression Systems. **Note: Provide the Candidate with a copy of BOP FP-22.** **Cue:** ***All prerequisites, precautions, limitations & actions have been met.***	o Locate and Open procedure BOP FP-22.	❑	❑	❑
2. Determine location of Fire Zone affected. **Cue:** ***Fire has been verified in the _B Diesel Generator Room.***	o Determine fire location using _PM09J or report.	❑	❑	❑
3. Refer to Section G to determine attachment for affected zone. **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.**	o Identify BOP FP-22A20/22A25, locate and open.	❑	❑	❑

PERFORMANCE CHECKLIST	STANDARDS	SAT	UNSAT	N/A
4. Prepare to actuate CO2 to room.	Request Center Desk:	❑	❑	❑
Cue: ***Security reports room is CLEAR.***	o Call Security to ensure room clear of personnel.			
Cue: ***Page announcement has been made.***	o Page plant for pending initiation.			
5. Ensure system enabled.	Verify:	❑	❑	❑
Cue: **1B DG –** ***1CO5022B is OPEN. (401' K7)***	o Block valve _CO5022B is open.			
2B DG - ***2CO5022B is OPEN. (401' K28)***				
Cue: **1B DG –** ***1HS-CO004 is NOT in ABORT.(401' K7)***	o 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)	❑	❑	❑
	o _HS-CO002 <u>OR</u>			
Cue: ***_HS-CO00_ pushbutton is DEPRESSED.***	o _HS-CO003			

PERFORMANCE CHECKLIST	STANDARDS	SAT	UNSAT	N/A
7. Verify system actuates. **Cue:** ***CO2 SYSTEM ACTUATED light NOT LIT on 2CO03J.*** **Cue:** ***No suppression alarm received on _PM09J.*** **Note: If candidate elects to try other pushbutton-- give same cues.**	Verify Alarm Actuation: o "CO2 SYSTEM ACTUATED" on _CO03J. o Suppression alarm on _PM09J.	❑	❑	❑
8. Determine manual initiation without control power is required.	Proceed to step B.1.	❑	❑	❑
*9. Break glass on appropriate master EMPC Cabinet **Cue:** ***Glass has been broken on 0CO09J cover.***	• Locate the Master EMPC (0CO09J) and (simulate) breaking the glass cover.	❑	❑	❑
*10. Prepare to manually initiate CO2 to room . **Cue:** ***0CO09J actuator lever is in the OPEN position.*** **Cue:** ***Block valve is OPEN. (already checked step #5)***	Verify/Open: • Place Master EMPC (0CO09J) to open. 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). **Cue:** ***Glass has been broken on _CO03JB cover.***	• Identify the proper EMPC as _CO03JB and (simulate) break the glass cover.	❑	❑	❑
*12. Attempt to actuate using the EMPC actuator lever. **Cue:** ***_CO03JB actuator lever is in the OPEN position, time noted.***	• Place the ACTUATOR LEVER for _CO03JB in the OPEN position (simulate) and note time.	❑	❑	❑
13. Determine initiation occurs. **Cue:** ***NSO reports _S-37 suppression alarm RECEIVED.***	o Verify suppression alarm received on _PM09J.	❑	❑	❑

NOTE

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

*14. Terminate CO2. **Cue:** **1B DG - *1min. 00 sec. has passed.*** **2B DG - *1min. 40 sec. has passed***	o After 1 min. 00 sec. for the 1B DG *or* o After 1 min. 40 sec. for the 2B DG 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: