JOB PERFORMANCE MEASURE

TASK CONDITIONS:

1. You are an extra NLO.
2. Both Units are at 100% power.
3. Maintenance has recently been performed on 2PR09J CC HX Outlet Radiation Monitor.
4. An attempt was made to start 2PR09J from the Control Room and failed.
5. Further discussion/investigation determined that there might be a problem with the alignment of the monitor.

INITIATING CUES:

The US has directed you to start the 2PR09J locally per BOP AR/PR-1. The US has verified the Monitor Data Base as correct for 2PR09J.

JOB PERFORMANCE MEASURE

TASK CONDITIONS:

2. You are an extra NLO.

2. Both Units are at 100% power.

6. Maintenance has recently been performed on 2PR09J CC HX Outlet Radiation Monitor.

7. An attempt was made to start 2PR09J from the Control Room and failed.

8. Further discussion/investigation determined that there might be a problem with the alignment of the monitor.

INITIATING CUES:

The US has directed you to start the 2PR09J locally per BOP AR/PR-1. The US has verified the Monitor Data Base as correct for 2PR09J.

JOB PERFORMANCE MEASURE Rev. 1, 6/01/2006

TASK TITLE: Perform Local Start of CC HX Outlet Radiation Monitor (2PR09J) JPM No.: N-116

TPO No: 4C.AR-03 K&A No.: (A) 2.1.30 K&A IMP: 3.9

EXAMINEE:_____ DATE: ___/___/___

The Examinee: PASSED_____ this JPM TIME STARTED: _____

FAILED _____ TIME FINISHED: _____

EVALUATION METHOD: PERFORM_____ SIMULATE_____

LOCATION: IN PLANT __x___

MATERIALS:

1. Copy of BOP AR/PR-1.
2. Key CAT60 or a picture of the RM-80 'Motherboard'

GENERAL REFERENCES:

1. BOP AR/PR-1, Rev. 14, Startup of Skid Mounted Process Radiation Monitors.

TASK STANDARDS:

1. Locally startup 2PR09J per BOP AR/PR-1.
2. Demonstrates the use of good Core Work Practices (CWP).

TASK CONDITIONS:

1. You are an extra NLO.
2. Both Units are at 100% power.
3. Maintenance has recently been performed on 2PR09J CC HX Outlet Radiation Monitor.
4. An attempt was made to start 2PR09J from the Control Room and failed.
5. Further discussion/investigation determined that there might be a problem with the alignment of the monitor.

INITIATING CUES:

The US has directed you to start the 2PR09J locally per BOP AR/PR-1. The US has verified the Monitor Data Base as correct for 2PR09J.

CRITICAL ELEMENTS: (*) 3 & 5

APPROXIMATE COMPLETION TIME: 15 minutes

PERFORMANCE CHECKLIST	STANDARDS	SAT	UNSAT	N/A
RECORD START TIME _____				
1. Refer to BOP AR/PR-1 and determine step F.3.a is the appropriate step for startup of 2PR09J. **NOTE: Step 1 may be performed at any time.** ***Cue: (if asked) The 'M' line-ups are complete.***	◦ Locate and Open, BOP AR/PR-1 and determine step F.3.a is the appropriate step.	❑	❑	❑
2. Verify the Hand/Off/Auto switch is in the Off position. ***Cue: Hand/Off/Auto switch is in the 'OFF' position.***	At _2PR09J: ◦ VERIFY/PLACE the HAND/OFF/AUTO switch in the OFF position.	❑	❑	❑
*3. Place the local main power disconnect switch in the ON position. ***Cue: Disconnect switch is in the 'DOWN' position*** ***Cue: (after the disconnect is on) Disconnect switch is in the 'UP' position***	At 2PR09J: • PLACE the LOCAL MAIN POWER DISCONNECT Switch in the ON position.	❑	❑	❑
4. Check the status of the circuits inside the RM-80 cabinets. ***Cue: The Green GO LED is flashing.*** ***Cue: The Red NO GO LED is off.*** ***Cue: The Red LOSS OF COUNTS LED is off.***	At 2PR09J, Inside the RM-80 cabinet: ◦ GREEN 'GO' LED is FLASHING. ◦ RED 'NO GO' LED is OFF. ◦ RED 'LOSS OF COUNTS' LED is OFF.	❑	❑	❑

PERFORMANCE CHECKLIST	STANDARDS	SAT	UNSAT	N/A
*5. Place the sample pump control switch in the Auto position. ***Cue: HAND/OFF/AUTO switch for the sample pump is in AUTO position.***	At 2PR09J: • VERIFY/PLACE the HAND/OFF/AUTO switch for the Sample Pump in the AUTO position.	❑	❑	❑
6. Check if Sample Pump is running. **Note: If the Sample pump is running use actual indications on the PR skid.** ***Cue: (if the skid is running) Indications are as you see them at the skid.*** ***Cue: (if the skid is NOT running) The GREEN light above the switch is lit and there is ~5 gpm flow indicated.*** ***Cue: (If asked) U-2 NSO, report flow light is lit on 2PR09J.***	At 2PR09J: ◦ Check if the sample pump is running ◦ Determines step F.3.a.6) is not required	❑	❑	❑
7. Check instrument available light is on at the RM-80 door. ***Cue: Instrument available light is lit.***	At 2PR09J, On the door of the RM-80: ◦ Check the INSTRUMENT AVAILABLE light is ON	❑	❑	❑
8. Check that the monitor status is normal operating condition. ***Cue: As U-2 NSO, report that the 2PR09J is operating properly.***	◦ CHECK that the Monitor Status is NORMAL OPERATING CONDITION	❑	❑	❑

PERFORMANCE CHECKLIST	STANDARDS	SAT	UNSAT	N/A
9. Complete the Electrical lineup per BOP AR/PR-E_. ***Cue: Electrical lineup is being completed by another operator.*** ***Cue: (if required) This JPM is completed*** **RECORD STOP TIME_____**	◦ Compelte the electrical line up per BOP AR/PR-E4/E5/E6.	❑	❑	❑

COMMENTS:

JOB PERFORMANCE MEASURE

TASK CONDITIONS:

1. You are the Unit 1 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:

1. The Shift Manager directs 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.
2. Unit 2 NLO is standing by to assist as required.

JOB PERFORMANCE MEASURE

TASK CONDITIONS:

1. You are the Unit 1 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:

1. The Shift Manager directs 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.
2. Unit 2 NLO is standing by to assist as required.

JOB PERFORMANCE MEASURE Rev. 3, 4/28/2006

TASK TITLE: Startup of a Hydrogen Recombiner JPM No.: In-Plant JPM j

TPO No: 4D.EP-03 K&A No.: 028A4.01 K&A IMP. 4.0/4.0

EXAMINEE: _____ DATE: ___/___/___

The Examinee: PASSED_____ this JPM TIME STARTED: _____

FAILED _____ TIME FINISHED: _____

EVALUATION METHOD: PERFORM_____ SIMULATE_____

LOCATION: IN PLANT ____X____

MATERIALS:

1. Key #491 for the hydrogen recombiner.
2. Copy of BOP OG-10.
3. Picture of Recombiner control panels (if required)

GENERAL REFERENCES:

BOP OG-10, Startup of a Hydrogen Recombiner (Rev. 8)

TASK STANDARDS:

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

TASK CONDITIONS:

1. You are the Unit 1 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:

1. The Shift Manager directs 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.
2. Unit 2 NLO is standing by to assist as required.

CRITICAL ELEMENTS: (*) 7, 9, 11, 12, 13, & 15

APPROXIMATE COMPLETION TIME: 15 minutes

PERFORMANCE CHECKLIST	STANDARDS	SAT	UNSAT	N/A
RECORD START TIME _____				
1. Refer to BOP OG-10, Startup of a Hydrogen Recombiner **Note: Step 1 may be performed at any time.** ***Cue: Prerequisites 1 through 4 are met***	° LOCATE and OPEN BOP OG-10	❑	❑	❑
*2. Obtain key #491 to unlock the panel door and key #207 to operate the start switch	° PROCEED to the WEC 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	At 0OG04J, SET:	❑	❑	❑
Cue: 0TIC-0GO47 is set at 1325 °F	° 0TIC-0GO47 at 1325 °F			
Cue: 0TSH-0GO45 is set at 1325°F	° 0TSH-0GO45 at 1325 °F			
Cue: 0TSH-0GO51 is set at 150°F	° 0TSH-0GO51 at 150 °F			

PERFORMANCE CHECKLIST	STANDARDS	SAT	UNSAT	N/A
*5. Align breakers	At 0OG04J, 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	At 0OG04J:	❑	❑	❑
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 2 Assist NSO to OPEN:	❑	❑	❑
Cue: Unit 2 Assist NSO reports that 1OG080 is OPEN	• 1OG080			
Cue: Unit 2 Assist NSO reports that 1OG084 is OPEN	• 1OG084			
Cue: Unit 2 Assist NSO reports that 1OG082 is OPEN	• 1OG082			
Cue: Unit 2 Assist NSO reports that 1OG079 is OPEN	• 1OG079			

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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 ***Cue: 0OG060 indicates OPEN***	At 0OG09J: • VERIFY/OPEN 0OG060	❑	❑	❑
10. Locate local control panel 0OG08J **Note: 401' AB, P13**	° LOCATE 0OG08J	❑	❑	❑
*11. Hydrogen recombiner "A" suction valve ***Cue: 0OG059 '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	° LOCATE 0OG05J	❑	❑	❑
Note: 401' AB, P13				
*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

TASK CONDITIONS:

1. You are a Non-Licensed Operator.

2. The unit has just tripped in conjunction with an electrical fire in the unit's Remote Shutdown Panel.

3. The 2A AF pump is OOS for maintenance and the 2B AF pump did not automatically start, and will not manually start with the MCR switch.

INITIATING CUES:

The Shift Manager has just directed you to initiate a local emergency start of the 2B AF pump using 2BOA ELEC-5, Attachment D.

JOB PERFORMANCE MEASURE

TASK CONDITIONS:

2. You are a Non-Licensed Operator.

2. The unit has just tripped in conjunction with an electrical fire in the unit's Remote Shutdown Panel.

3. The 2A AF pump is OOS for maintenance and the 2B AF pump did not automatically start, and will not manually start with the MCR switch.

INITIATING CUES:

The Shift Manager has just directed you to initiate a local emergency start of the 2B AF pump using 2BOA ELEC-5, Attachment D.

JOB PERFORMANCE MEASURE Rev. 4, 5/19/2006

TASK TITLE: Local Emergency Start of 2B AFW Pump (364') JPM No.: N-56a

TPO No: 4D.OA-35 K&A No.: 2.1.30 K&A IMP. 3.9 / 3.4

EXAMINEE: _____ DATE: ___/___/___

The Examinee: PASSED_____ this JPM TIME STARTED: _____

FAILED _____ TIME FINISHED: _____

EVALUATION METHOD: PERFORM_____ SIMULATE_____

LOCATION: IN PLANT___X___

MATERIALS:

Copy of 2BOA ELEC-5, Attachment D, AF Pump

GENERAL REFERENCES:

1. 2BOA ELEC-5, Local Emergency Control Of Safe Shutdown Equipment (Rev. 100)
2. 2BOA ELEC-5, Attachment D, Diesel Driven Auxiliary Feedwater Pump Local Start. (Rev. 100)

TASK STANDARDS:

Correctly perform the actions required for 2B AF Pump Local Emergency Start.

TASK CONDITIONS:

1. You are a Non-Licensed Operator.
2. The unit has just tripped in conjunction with an electrical fire in the unit's Remote Shutdown Panel.
3. The 2A AF pump is OOS for maintenance and the 2B AF pump did not automatically start, and will not manually start with the MCR switch.

INITIATING CUES:

The Shift Manager has just directed you to initiate a local emergency start of the 2B AF pump using BOA ELEC-5, Attachment D.

CRITICAL ELEMENTS: (*) 9 & 10

APPROXIMATE COMPLETION TIME: 10 minutes

PERFORMANCE CHECKLIST	STANDARDS	SAT	UNSAT	N/A
RECORD START TIME _____				
1. Locate the 2B AF pump.	On 383' Aux Bldg:	❑	❑	❑
Note: Provide the Candidate with a copy of 2BOA ELEC-5, Attachment D.	o LOCATE 2B AF pump.			

NOTE

JPM steps 2 and 3 may be performed in any order

2. Verify/Start associated Aux Lube Oil Pump.		❑	❑	❑
Cue: ***Aux Lube Oil Pump CS is in the 'START' position.***	o VERIFY/START 2B Aux Lube Oil Pump.			
3. Verify/Start Gearbox Lube Oil Pump.		❑	❑	❑
Cue: ***Gearbox Lube Oil Pump CS is in the 'START' position.***	o VERIFY/START Gearbox Lube Oil Pump.			
4. Place ENGINE START Switch to MAN.	At 2AF01J:	❑	❑	❑
Cue: ***ENGINE START Switch is in MAN.***	o PLACE ENGINE START Switch to MAN.			
5. Check Air Box Tripped annunciator NOT LIT.	At 2AF01J:	❑	❑	❑
Cue: ***Air Box Trip Annunciator is NOT LIT.***	o CHECK Diesel Air Box Trip reset.			

PERFORMANCE CHECKLIST	STANDARDS	SAT	UNSAT	N/A
6. Momentarily depress the RESET button. ***Cue: The RESET button was depressed and released.***	At 2AF01J: o DEPRESS and RELEASE the Reset button.	❑	❑	❑

NOTE

Alternate path initiated in the following step.

7. Depress the 2B AF Pump START pushbutton. ***Cue: The engine does NOT crank.***	At 2AF01J: o DEPRESS the Start button. o VERIFY the engine starts.	❑	❑	❑
8. Try to start the 2B AF pump with the other battery bank. ***Cue: The 'other' battery bank is selected (A or B depending on current selection)*** **NOTE: Located on 2AF01J** ***Cue: The Reset pushbutton has been depressed and released.*** ***Cue: The Engine does NOT start.***	o SELECT other battery bank o DEPRESS and RELEASE the Reset button. o DEPRESS the Start button.	❑	❑	❑
*9. Place Engine Start switch to AUTO. **Cue:** ***Engine Start switch is in AUTO.***	At 2AF01J: • PLACE Engine Start switch to AUTO.	❑	❑	❑

PERFORMANCE CHECKLIST	STANDARDS	SAT	UNSAT	N/A
*10. Start the 2B AF pump at Emergency Control panel 2AF03J.		❑	❑	❑
NOTE: U2 – 364 M18, by the U0 CC pump	o LOCATE panel 2AF03J			
Cue: ***The Remote Emergency Start switch is in START***				
Cue: The Run light is LIT	• PLACE Remote Emergency Start switch in START			
	o VERIFY Run light LIT			
11. Monitor 2B AF pump operation.		❑	❑	❑
Cue: AF-7T1 will be completed by another NLO who will monitor the pump.	o PERFORM BOP AF-7T1			
Cue: ***This JPM is complete.***				

RECORD STOP TIME _____

COMMENTS: