FINAL AS ADMINISTERED NRC-AUTHORED

WALKTHROUGH JPMS

FOR THE D. C. COOK INITIAL EXAMINATION - MAY 2001

Appendix C	Job Performance Measure Worksheet	Form ES-C-1

Facility: D.C. Cook Task No: _____

Task Title: Place Hydrogen Recombiners in Service Job Performance Measure No: B.1.a

K/A Reference: 028 A4.01 4.0/4.0

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance: __ Actual Performance: _X_ Classroom: __ Simulator: _X_ Plant: __

Task Standard: HYDROGEN RECOMBINER IS PLACED IN SERVICE PER PROCEDURE

Required Materials: 02-OHP-4023.SUP.005

General References: 02-OHP-4023.SUP.005

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions: THE PLANT SUFFERED A LOCA CONDITION. ALL NECESSARY MITIGATION ACTIONS PER EOPs HAVE BEEN PERFORMED. SEVEN HOURS HAVE ELAPSED SINCE THE ONSET OF THE LOCA. HYDROGEN CONCENTRATION IN THE CONTAINMENT IS APPROXIMATELY 3%.

Initiating Cue: YOU ARE DIRECTED TO PLACE THE HYDROGEN RECOMBINERS IN SERVICE IN ACCORDANCE WITH 02-OHP.4023.SUP.005, PLACING HYDROGEN RECOMBINERS IN SERVICE.

Time Critical Task: YES/(NO)

Validation Time: 15 minutes

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

Performance step: 1 SAT/UNSAT

CHECK TIME SINCE REACTOR TRIP IS GREATER THAN 6 HOURS

Standard: IT HAS BEEN 7 HOURS SINCE THE LOCA

Comment:

Performance step 2 SAT/UNSAT

VERIFY ELECTRICAL POWER TO HYDROGEN RECOMBINERS IS AVAILABLE

Standard:

CHECKS 600V BUSES 21B AND 21C ARE ENERGIZED, OR CHECKS LIGHTS AND PANEL ENERGIZED

Comment:

Performance step: 3 SAT/UNSAT

VERIFY CONTAINMENT RECIRCULATION FANS RUNNING – CEQ FANS

Standard:

VERIFY CONTAINMENT RECIRCULATION FANS RUNNING – CEQ FANS
- 2-HV-CEQ-1 RUNNING
- 2-HV-CEQ-2 RUNNING

NOTE: THIS WILL DEPEND ON SIMULATOR SETUP PER EOPs – (IF FANS ARE RUNNING OR NOT)

Comment:

Performance step: 4 SAT/UNSAT

VERIFY DAMPERS OPEN

Standard:

VERIFY DAMPERS OPEN – CEQ FAN SUCTION DAMPERS FOR RUNNING FANS
- 2-VMO-101 OPEN
- 2-VMO-102 OPEN

Comment:

Performance step: 5 SAT/UNSAT

VERIFY CEQ FAN CCW VALVES OPEN

Standard:

VERIFY CEQ FAN CCW VALVES OPEN
- 2-CCM-430 OPEN
- 2-CCM-431 OPEN
- 2-CCM-432 OPEN
- 2-CCM-433 OPEN

Comment:

Performance step: 6 SAT/UNSAT

START THE BOTH HYDROGEN RECOMBINERS

Standard:

- VERIFY POWER ADJUSTER SET AT 000

Comment:

Performance step: 7 **CRITICAL STEP** SAT/UNSAT

START BOTH HYDROGEN RECOMBINERS

Standard:

PLACE CONTROL SWITCH IN RUN:
- **2-HR1**
- **2-HR2**

Comment:

Performance step: 8 **CRITICAL STEP** SAT/UNSAT

PLACE THE FIRST HYDROGEN RECOMBINER IN OPERATION

Standard:

RAISE POWER ADJUSTER TO OBTAIN 5 kW
MAINTAIN POWER AT 5 KW FOR 10 MINUTES (TIME COMPRESSION)

Comment:

Performance step: 9 **CRITICAL STEP** SAT/UNSAT

PLACE THE SECOND HYDROGEN RECOMBINER IN OPERATION

Standard:

RAISE POWER ADJUSTER TO OBTAIN 5 kW
MAINTAIN POWER AT 5 KW FOR 10 MINUTES (TIME COMPRESSION)

Comment:

Performance step: 10 **CRITICAL STEP** SAT/UNSAT

PLACE THE FIRST HYDROGEN RECOMBINER IN OPERATION

Standard:

RAISE POWER ADJUSTER TO OBTAIN 10 kW

Comment:

Performance step: 11 **CRITICAL STEP** SAT/UNSAT

PLACE THE FIRST HYDROGEN RECOMBINER IN OPERATION

Standard:

MAINTAIN POWER AT 10 kW FOR 10 MINUTES (TIME COMPRESS)
RAISE POWER ADJUSTER TO OBTAIN 20 kW
MAINTAIN POWER AT 20 kW FOR 5 MINUTES (TIME COMPRESS)

Comment:

Performance step: 12 **CRITICAL STEP** SAT/UNSAT

DETERMINE REQUIRED HYDROGEN RECOMBINER OUTPUT POWER USING FIGURE 1, HYDROGEN RECOMBINER POWER SETTING, OF SUP.005, PAGE 9

Standard:

USING THE VALUE OF THE POST ACCIDENT CONTAINMENT PRESSURE (PSIG) THE APPLICANT DETERMINES THE HEATER POWER TARGET VALUE FROM FIGURE 1

NOTE: THE VALUE USED WILL DEPEND ON THE PRESSURE IN CONTAINMENT WHEN THE APPLICANT GETS TO THIS STEP USING THE CURVE MARKED AS 2-HR1. HR1 IS APPROXIMATELY 64KW IF CONTAINMENT PRESSURE IS 1.25 PSIA.

Comment:

Performance step: 13 SAT/UNSAT

RAISE POWER ADJUSTER TO OBTAIN THE REQUIRED POWER DETERMINED IN STEP 14 ABOVE

Standard:

NOTE: THE SIMULATOR CANNOT SET THIS MALFUNCTION, THEREFORE THE EXAMINER MUST GIVE THE CUE TO THE APPLICANT

CUE: THE FIRST HYDROGEN RECOMBINER OUTPUT **CANNOT** BE RAISED TO THE DESIRED kW

NOTE: IF THE APPLICANT INFORMS YOU THAT THEY CANNOT RAISSE KW TO THE DESIRED VALUE, ASK THEM WHAT THEY RECOMMEND. IF THEY STILL APPEAR NOT TO HAVE DIAGNOSED TO START THE SECOND H_2 RECOMBINER, CUE THEM THAT A H_2 RECOMBINER MUST BE PLACED INTO SERVICE.

Comment:

Performance step: 14 **CRITICAL STEP** SAT/UNSAT

PLACE THE SECOND HYDROGEN RECOMBINER IN OPERATION

Standard:

RAISE POWER ADJUSTER TO OBTAIN 10 kW

Comment:

Performance step: 15 **CRITICAL STEP** SAT/UNSAT

PLACE THE SECOND HYDROGEN RECOMBINER IN OPERATION

Standard:

MAINTAIN POWER AT 10 kW FOR 10 MINUTES (TIME COMPRESS)
RAISE POWER ADJUSTER TO OBTAIN 20 kW

Comment:

Performance step: 16 **CRITICAL STEP** SAT/UNSAT

RAISE THE SECOND HYDROGEN RECOMBINER POWER

Standard:

RAISE THE SECOND HYDROGEN RECOMBINER POWER TO 20 kW AND MAINTAIN IT FOR 5 MINUTES (TIME COMPRESS)

Comment:

Performance step: 17 **CRITICAL STEP** SAT/UNSAT

DETERMINE THE REQUIRED HYDROGEN RECOMBINER OUTPUT POWER

Standard:

DETERMINE THE REQUIRED HYDROGEN RECOMBINER OUTPUT POWER USING FIGURE 1

NOTE: THE VALUE USED WILL DEPEND ON THE PRESSURE IN CONTAINMENT WHEN THE APPLICANT GETS TO THIS STEP USING THE CURVE MARKED AS 2-HR2, THIS WILL BE DIFFERENT FROM 2-HR1

Comment:

Performance step: 18 **CRITICAL STEP** SAT/UNSAT

RAISE POWER ADJUSTER TO OBTAIN THE REQUIRED POWER

Standard:

RAISE POWER ADJUSTER TO OBTAIN THE REQUIRED POWER ABOVE, THE POWER WILL BE DEPENDENT ON CONTAINMENT PRESSURE

Comment:

Performance step: 19 SAT/UNSAT

LOG HYDROGEN CONCENTRATION AND HYDROGEN RECOMBINER POWER

Standard:

LOG HYDROGEN CONCENTRATION AND HYDROGEN RECOMBINER POWER USING ATTACHMENT A OF SUP.005, HYDROGEN RECOMBINER LONG-TERM MONITORING

Cue: HAND THE CANDIDATE A COPY OF ATTACHMENTA OF SUP.005

Comment:

Terminating cue: JPM IS COMPLETE

VERIFICATION OF COMPLETION

Job Performance Measure No. B.1.a

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____

_____

_____

Response:_____

_____

_____

_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

Initial Conditions: THE PLANT SUFFERED A LOCA CONDITION. ALL NECESSARY MITIGATION ACTIONS PER EOPs HAVE BEEN PERFORMED. SEVEN HOURS HAVE ELAPSED SINCE THE ONSET OF THE LOCA. HYDROGEN CONCENTRATION IN THE CONTAINMENT IS APPROXIMATELY 3%.

Initiating Cue: YOU ARE DIRECTED TO PLACE THE HYDROGEN RECOMBINERS IN SERVICE IN ACCORDANCE WITH 02-OHP.4023.SUP.005, PLACING HYDROGEN RECOMBINERS IN SERVICE.

Appendix C	Job Performance Measure Worksheet	Form ES-C-1

Facility: D.C. Cook _____ Task No: _____

Task Title: Transfer RHR To Hot Leg Recirc Job Performance Measure No: ALL – B.1.b

K/A Reference: 005 A4.01 3.6/3.4

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance: __ Actual Performance: _X_ Classroom: __ Simulator: _X_ Plant: __

Task Standard: ALIGN ECCS FOR HOT LEG RECIRCULATION AS DIRECTED. PRIOR TO ISOLATING ITS FLOW PATH, AN SI PUMP MUST BE STOPPED, WHILE CHANGING THE RHR FLOWPATH, A RUNNING RHR PUMP CAN NOT BE SIMULTANEOUSLY ALIGNED TO THE HOT AND COLD LEGS.

Required Materials: 02-OHP.4023.ES-1.4, INITIATE SI HOT LEG RECIRCULATION

General References: 02-OHP.4023.ES-1.4

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions: IT IS 7 HOURS AFTER A DESIGN BASES LOCA OCCURRED. ALL EOPs WERE IMPLEMENTED AS APPROPRIATE AND THE PLANT IS STABLE ON LONG-TERM EMERGENCY CORE COOLING.

Initiating Cue: PER STEP 18 OF E-1, LOSS OF REACTOR OR SECONDARY COOLANT, YOU ARE TO TRANSFER ECCS FROM COLD LEG RECIRCULATION TO HOT LEG RECIRCULATION USING ES-1.4, TRANSFER TO HOT LEG RECIRCULATION. BOTH TRAINS OF ECCS ARE IN SERVICE AND ALL COMPONENTS ARE OPERABLE.

Time Critical Task: YES/(NO)

Validation Time: 15 MINUTES

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

Performance step: 1 SAT/UNSAT

VERIFY AT LEAST ONE SI PUMP DISCHARGE CROSSTIE VALVE CLOSED

Standard:

VERIFY 2-IMO-270 OR 2-IMO-275 IS CLOSED

Comment:

Performance step 2 **CRITICAL STEP** SAT/UNSAT

STOP NORTH SI PUMP

Standard:

NORTH SI PUMP STOPPED

Comment:

Performance step: 3 **CRITICAL STEP** SAT/UNSAT

CLOSE 2-IMO-316, RHR AND SI TO RCS COLD LEGS VALVE

Standard:

2-IMO-316 FULLY CLOSED

Comment:

Performance step: 4 SAT/UNSAT

RESTORE CONTROL POWER TO 2-IMO-315, EAST RHR INJECTION TO HOT LEGS VALVE

Standard:

POWER TO 2-IMO-315 RESTORED

Comment:

Performance step: 5 **CRITICAL STEP** SAT/UNSAT

OPEN 2-IMP-315

Standard:

RECOGNIZE THAT 2-IMO-315 DOES NOT OPEN AND REOPEN 2-IMO-316

Comment:

Performance step: 6 SAT/UNSAT

REMOVE CONTROL POWER FROM 2-IMO-315

Standard:

REMOVE CONTROL POWER FROM 2-IMO-315

Comment:

Performance step: 7 **CRITICAL STEP** SAT/UNSAT

START NORTH SI PUMP

Standard:

START NORTH SI PUMP

Comment:

Performance step: 8 SAT/UNSAT

IN THE NEXT TRAIN, VERIFY AT LEAST ONE SI PUMP DISCHARGE CROSSTIE VALVE CLOSED

Standard:

VERIFY 2-IMO-270 OR 2-IMO-275 CLOSED

Comment:

Performance step: 9 **CRITICAL STEP** SAT/UNSAT

STOP SOUTH SI PUMP

Standard:

STOP SOUTH SI PUMP

Comment:

Performance step: 10 **CRITICAL STEP** SAT/UNSAT

CLOSE 2-IMO-326, RHR AND SI TO RCS COLD LEGS VALVE

Standard:

FULLY CLOSE 2-IMO-326

Comment:

Performance step: 11 SAT/UNSAT

RESTORE CONTROL POWER TO 2-IMO-325, WEST RHR TO INJECTION TO HOT LEGS

Standard:

RESTORE CONTROL POWER TO 2-IMO-325

Comment:

Performance step: 12 **CRITICAL STEP** SAT/UNSAT

OPEN 2-IMO-325

Standard:

OPEN 2-IMO-325

Comment:

Performance step: 13 SAT/UNSAT

REMOVE CONTROL POWER FROM 2-IMO-325

Standard:

REMOVE CONTROL POWER FROM 2-IMO-325

Comment:

Performance step: 14 **CRITICAL STEP** SAT/UNSAT

START SOUTH SI PUMP

Standard:

START SOUTH SI PUMP

Comment:

Terminating cue: THE JPM IS COMPLETE WHEN THE SOUTH PUMP IS STARTED

VERIFICATION OF COMPLETION

Job Performance Measure No. ALL – B.1.b

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____

Response:_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

Initial Conditions: IT IS 7 HOURS AFTER A DESIGN BASES LOCA OCCURRED. ALL EOPs WERE IMPLEMENTED AS APPROPRIATE AND THE PLANT IS STABLE ON LONG-TERM EMERGENCY CORE COOLING.

Initiating Cue: PER STEP 18 OF E-1, LOSS OF REACTOR OR SECONDARY COOLANT, YOU ARE TO TRANSFER ECCS FROM COLD LEG RECIRCULATION TO HOT LEG RECIRCULATION USING ES-1.4, TRANSFER TO HOT LEG RECIRCULATION. BOTH TRAINS OF ECCS ARE IN SERVICE AND ALL COMPONENTS ARE OPERABLE.

Appendix C	Job Performance Measure Worksheet	Form ES-C-1

Facility: D.C. Cook Task No: _____

Task Title: Synchronize Main Generator Job Performance Measure No: B.1.c

K/A Reference: 062 A4.01 3.3/3.1

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance: __ Actual Performance: _X_ Classroom: __ Simulator: _X_ Plant: __

Task Standard: THE MAIN GENERATOR IS SYNCHRONIZED TO THE GRID

Required Materials: 02-OHP-4021.050.001 PAGE 20 - 25

General References: 02-OHP-4021.050.001

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions: UNIT-2 IS PERFORMING A STARTUP. THE MAIN TURBINE IS AT 1800 RPM READY TO BE SYNCHRONIZED TO THE GRID. STEP 4.4.1 THRU 4.4.8 OF PROCEDURE 02-OHI.4021.050.001, 'TURBINE GENERATOR NORMAL STARTUP AND OPERATION' HAVE BEEN PREFORMED.

Initiating Cue: SYNCHRONIZE THE MAIN GENERATOR TO THE GRID USING 02-OHP.4021.050.001 STARTING WITH STEP 4.4.9. ALL PREVIOUS STEPS HAVE BEEN COMPLETED.

Time Critical Task: YES/(NO)

Validation Time: 15 MINUTES

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

Performance step: 1 SAT/UNSAT

VERIFY THE MAIN TURBINE AT 1800 RPM AND STATOR COOLING WATER CONDUCTIVITY IS LESS THAN OR EQUAL TO 0.5 μMHOS

Standard:

VERIFY THE MAIN TURBINE AT 1800 RPM AND STATOR COOLING WATER CONDUCTIVITY IS LESS THAN OR EQUAL TO 0.5 μMHOS

Comment:

Performance step 2 SAT/UNSAT

PLACE GENERATOR AND START VOLTMETER IN POSITION OTHER THAN OFF

Standard:

PLACE GENERATOR AND START VOLTMETER IN POSITION OTHER THAN OFF

Comment:

Performance step: 3 **CRITICAL STEP** SAT/UNSAT

PLACE AND HOLD THE EXCITER FIELD BREAKER CONTROL SWITCH IN CLOSE

Standard:

PLACE AND HOLD THE EXCITER FIELD BREAKER CONTROL SWITCH IN CLOSE

Comment:

Performance step: 4 SAT/UNSAT

OBSERVE EFFECTS OF CLOSING EXCITER FIELD BREAKER

Standard:

OBSERVE A VOLTAGE BUILD-UP TO BETWEEN 90 AND 121 VOLTS ON THE START/GEN VOLTAGE METER AND THEN RELEASE THE EXCITER FIELD BREAKER

Comment:

Performance step: 5 SAT/UNSAT

VERIFY ALL THREE GENERATOR PHASES

Standard:

VERIFY ALL THREE GENERATOR PHASES ON THE START/GEN VOLTAGE METER ARE ENERGIZED AND INDICATE $\leq$ 121 VOLTS

Comment:

Performance step: 6 **CRITICAL STEP** SAT/UNSAT

PLACE RUN/765 kV BUS SELECTOR SWITCH TO A BUS 2 POSITION

Standard:

PLACE RUN/765 kV BUS SELECTOR SWITCH TO A BUS 2 POSITION

Comment:

Performance step: 7 SAT/UNSAT

CHECK THE VOLTAGE ON ALL THREE PHASES

Standard:

CHECK THE VOLTAGE ON ALL THREE PHASES TO BE APPROXIMATELY EQUAL

Comment:

Performance step: 8 **CRITICAL STEP** SAT/UNSAT

RAISE GENERATOR VOLTAGE

Standard:

RAISE GENERATOR VOLTAGE ON THE GENERATOR START VOLTMETER USING THE GEN VOLTAGE REG MANUAL ADJUST SWITCH UNTIL GENERATOR VOLTAGE IS APPROXIMATELY EQUAL TO SYSTEM VOLTAGE INDICATED ON THE RUN (765Kv bus) VOLTMETER

Comment:

Performance step: 9 SAT/UNSAT

RAISE AND LOWER THE MANUAL ADJUST SWITCH

Standard:

RAISE AND LOWER THE MANUAL ADJUST SWITCH TO CYCLE GENERATOR VOLTAGE BETWEEN 114 AND 121 VOLTS, AS INDICATED ON THE START/GEN VOLTAGE METER.

Comment:

Performance step: 10 **CRITICAL STEP** SAT/UNSAT

ADJUST THE MANUAL ADJUST

Standard:

ADJUST THE MANUAL ADJUST SWITCH UNTIL GENERATOR VOLTAGE IS 2-3 VOLTS HIGHER THAN THE SYSTEM VOLTAGE INDICATED ON THE RUN (765 kV BUS) VOLTMETER.

Comment:

Performance step: 11 **CRITICAL STEP** SAT/UNSAT

PLACE GEN VOLT REG MAN/AUTO TRANSFER SWITCH IN TEST

Standard:
PLACE GEN VOLT REG MAN/AUTO TRANSFER SWITCH IN TEST AND CHECK WHITE MANUAL REGULATOR LAMP REMAINS LIT.

Comment:

Performance step: 12 SAT/UNSAT

CYCLE THE GEN VOLTAGE REG AUTO (SETPOINT)

Standard:

WHILE OBSERVING THE NULL METERS, CYCLE THE GEN VOLTAGE REG AUTO (SETPOINT), TO VERIFY SETPOINT CONTROL OF THE AUTOMATIC VOLTAGE REGULATOR

Comment:

Performance step: 13 **CRITICAL STEP** SAT/UNSAT

NULL THE VOLTAGE SIGNAL

Standard:

NULL THE VOLTAGE SIGNAL USING THE GEN VOLTAGE REG AUTO (SETPOINT) ADJUST RHEOSTAT.

Comment:

Performance step: 14 **CRITICAL STEP** SAT/UNSAT

PLACE GEN VOLT REG MAN/AUTO TRANSFER SWITCH IN AUTO

Standard:

WHEN NULL METERS ARE READING THE SAME VOLTAGE, PLACE GEN VOLT REG MAN/AUTO TRANSFER SWITCH IN AUTO AND:

- **CHECK WHITE AUTO REGULATOR LAMP LIT**
- **CHECK WHITE MANUAL REGULATOR LAMP NOT LIT**
- **CHECK THAT THE GENERATOR VOLTAGE CHANGES $\leq$ 3 VOLTS IN EITHER DIRECTION, AS INDICATED ON THE START/GEN VOLTAGE METER**

Comment:

Performance step: 15 **CRITICAL STEP** SAT/UNSAT

PLACE GEN VOLT REG MAN/AUTO TRANSFER SWITCH IN TEST

Standard:

PLACE GEN VOLT REG MAN/AUTO TRANSFER SWITCH IN TEST, AND CHECK WHITE AUTO REGULATOR LAMP REMAINS LIT
NULL THE VOLTAGE SIGNAL USING THE GEN VOLTAGE REG MANUAL ADJUST SWITCH IF NECESSARY

Comment:

Performance step: 16 SAT/UNSAT

VERIFY MEGAWATT OUTPUT RECORDER 2-MW-1 ON

Standard:

VERIFY MEGAWATT OUTPUT RECORDER 2-MW-1 ON

Comment:

Performance step: 17 **CRITICAL STEP** SAT/UNSAT

PLACE GENERATOR CB A2 SYNCH SELECTOR SWITCH IN MANUAL

Standard:

PLACE GENERATOR CB A2 SYNCH SELECTOR SWITCH IN MANUAL

Comment:

Performance step: 18 SAT/UNSAT

ADJUST TURBINE SPEED

Standard:

ADJUST TURBINE SPEED AND LOAD ADJUSTER UNTIL SYNCHROSCOPE IS ROTATING SLOWLY IN THE FAST DIRECTION

Comment:

Performance step: 19 SAT/UNSAT

VERIFY BUS GEN LINE FREQUENCY RECORDER SELECTOR SWITCH

Standard:

VERIFY BUS GEN LINE FREQUENCY RECORDER SELECTOR SWITCH IS SET TO GEN

Comment:

Performance step: 20 SAT/UNSAT

VERIFY BUS GEN LINE FREQUENCY

Standard:

VERIFY BUS GEN LINE FREQUENCY RECORDER INDICATES BETWEEN59.5 AND 60.5 Hz

Comment:

Performance step: 21 SAT/UNSAT

VERIFY VOLTAGE INDICATED

Standard:

VERIFY VOLTAGE INDICATED ON THE FOLLOWING METERS:

- GENERATOR & START
  - RUN (ALL THREE PHASE POSITIONS)
  - START (ALL THREE PHASE POSITIONS)
- RUN & 765 kV BUS
  - BUS 1 (ALL THREE PHASE POSITIONS)
  - BUS 2 (ALL THREE PHASE POSITIONS)

Comment:

Performance step: 22 SAT/UNSAT

PLACE VOLTAGE SELECTOR SWITCHES IN OFF

Standard:

PLACE THE FOLLOWING VOLTAGE SELECTOR SWITCHES IN OFF:
- GENERATOR & START
- RUN & 765 kV BUS

Comment:

Performance step: 23 SAT/UNSAT

ADJUST GENERATOR START VOLTAGE

Standard:

ADJUST GENERATOR START VOLTAGE 2-3 VOLTS GREATER THAN RUN (765 kV BUS) VOLTAGE USING AUTO VOLTAGE REGULATOR ADJUST RHEOSTAT

Comment:

Performance step: 24 **CRITICAL STEP** SAT/UNSAT

PLACE THE GENERATOR CB A2 SYNCH SELECTOR SWITCH IN AUTO

Standard:

PLACE THE GENERATOR CB A2 SYNCH SELECTOR SWITCH IN AUTO

Comment:

Performance step: 25 **CRITICAL STEP** SAT/UNSAT

GIVE CB A2 CONTROL SWITCH A RED TARGET

Standard:

WHEN THE SYNCHROSCOPE IS AT THE 5 MINUTES TO 12 O'CLOCK POSITION, THEN GIVE GENERATOR CB A2 CONTROL SWITCH A RED TARGET

NOTE: 5-MINUTE TIMER TO CLOSE IN

Comment:

Performance step: 26 SAT/UNSAT

PLACE GENERATOR CB A2 SYNCH SELECTOR SWITCH TO OFF

Standard:

WHEN A2 BREAKER CLOSES, THEN PLACE GENERATOR CB A2 SYNCH SELECTOR SWITCH TO OFF

Comment:

Performance step: 27 SAT/UNSAT

ADJUST TURBINE LOAD

Standard:

ADJUST TURBINE LOAD BETWEEN 5 TO 25 MW

Comment:

Performance step: 28 SAT/UNSAT

GIVE GENERATOR CB A1 CONTROL SWITCH A RED TARGET

Standard:

GIVE GENERATOR CB A1 CONTROL SWITCH A RED TARGET (BREAKER SHOULD CLOSE WITHIN APPROXIMATELY 30 SECONDS)

Comment:

Terminating cue: CANDIDATE REPORTS THAT THE GENERATOR IS SYNCHRONIZED TO THE GRID.

VERIFICATION OF COMPLETION

Job Performance Measure No. B.1.c

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____

Response:_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

Initial Conditions: UNIT-2 IS PERFORMING A STARTUP. THE MAIN TURBINE IS AT 1800 RPM READY TO BE SYNCHRONIZED TO THE GRID. STEP 4.4.1 THRU 4.4.8 OF PROCEDURE 02-OHI.4021.050.001, 'TURBINE GENERATOR NORMAL STARTUP AND OPERATION' HAVE BEEN PREFORMED.

Initiating Cue: SYNCHRONIZE THE MAIN GENERATOR TO THE GRID USING 02-OHP.4021.050.001 STARTING WITH STEP 4.4.9. ALL PREVIOUS STEPS HAVE BEEN COMPLETED.

Appendix C	Job Performance Measure Worksheet	Form ES-C-1

Facility: D.C. Cook Task No: _____

Task Title: Fill Accumulator Job Performance Measure No: B.1.d

K/A Reference: 006 A1.13 3.5/3.7

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance: __ Actual Performance: _X_ Classroom: __ Simulator: _X_ Plant: __

Task Standard: ACCUMULATOR HAS BEEN ADJUSTED TO 950 FT^3 + 2 FT^3

Required Materials: 02-OHP.4021.008.004 ATTACHMENT 3, 02-OHP.4021.008.007

General References: 02-OHP.4021.008.004,02-OHP-4021.008.007

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions: UNIT 2 IS AT 100% POWER. SI ACCUMULATOR 3 LEVEL IS 940 FT^3. ALL OF THE PREREQISITES FOR STARTING THE SI PUMP ARE MET AND PERSONNEL ARE STANDING BY READY TO START THE PUMP

Initiating Cue: YOU ARE TO FILL SI ACCUMULATOR #3 TO 950 FT^3 USING 02-OHP.4021.008.004 ATTACHMENT 3, STEP 4.1 THRU 4.11.

Time Critical Task: YES/(NO)

Validation Time: 15 MINUTES

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

Performance step: 1 SAT/UNSAT

GET 02-OHP.4021.008.004 AND FIND ATTACHMENT 3

Standard:

GET 02-OHP.4021.008.004 AND FIND ATTACHMENT 3

CUE: HAND THE CANDIDATE ATTACHMENT 3

Comment:

Performance step 2 SAT/UNSAT

RECORD ACCUMULATOR NUMBER

Standard:

RECORD THAT ACCUMULATOR NUMBER #3 LEVEL IS BEING RAISED

Comment:
CUE: IF ASKED, ACT AS US AND ESTABLISH PRESSURE BAND OF 605 TO 635 PSIG.

Performance step: 3 SAT/UNSAT

VERIFY RCS PRESSURE

Standard:

VERIFY RCS PRESSURE IS GREATER THAN 1700 PSIG

Comment:

Performance step: 4 SAT/UNSAT

VERIFY VALVES OPEN

Standard:

VERIFY THE FOLLOWING VALVES – OPEN
- 2-IMO-261, SI PUMP SUCTION FROM RWST
- 2-IMO-262, SI PUMPS RECIRC TO RWST
- 2-IMO-263, SI PUMPS RECIRC TO RWST
- 2-IMO-265, SAFETY INJECTION DISCHARGE TO COLD LEGS 2 & 3

Comment:

Performance step: 5 **CRITICAL STEP** SAT/UNSAT

START SOUTH SAFETY INJECTION PUMP

Standard:

START SOUTH SAFETY INJECTION PUMP PER 02-OHP.4021.008.007 (SEE ATTACHED PROCEDURE)

NOTE: IF THE APPLICANT STARTS TO REVIEW THE PROCEDURE FOR STARTING THE PUMP REMIND THEM THAT ALL PREREQUISITES ARE COMPLETED AND THE SI PUMP IS READY TO START.

Comment:

Performance step: 6 SAT/UNSAT

DECLARE THE WEST RHR PUMP INOPERABLE

Standard:

CANDIDATE SHOULD DECLARE THE PUMP INOPERABLE TO THE SHIFT MANAGER

Comment:

Performance step: 7 **CRITICAL STEP** SAT/UNSAT

LOCKOUT THE WEST RHR PUMP

Standard:

PLACE CONTROL SWITCH FOR THE WEST RHR PUMP IN LOCKOUT

CUE: YOU ARE THE INDEPENDENT VERIFICATION FOR THE STEP

Comment:

Performance step: 8 SAT/UNSAT

CAUTION TAG WEST RHR PUMP

Standard:

PLACE A CAUTION TAG ON THE WEST RHR PUMP CONTROL SWITCH

CUE: HAVE THE CANDIDATE TELL YOU WHAT THE CAUTION TAG IS TO SAY AND INFORM THEM THAT THE CAUTION TAG WILL BE SIMULATED

Comment:

Performance step: 9 **CRITICAL STEP** SAT/UNSAT

OPEN RHR XTIE VALVES

Standard:

OPEN THE FOLLOWING VALVES:

- **2-IMO-314, EAST RHR PUMP DISCHARGE XTIE**
- **2-IMO-324, WEST RHR PUMP DISCHARGE XTIE**

CUE: YOU ARE THE INDEPENDENT VERIFICATION FOR THE STEP

Comment:

Performance step: 10 **CRITICAL STEP** SAT/UNSAT

CLOSE SAFETY INJECTION XTIE VALVE

Standard:

CLOSE ONE OF THE FOLLOWING VALVES:
- **2-IMO-270, SI PUMP DISCHARGE XTIE**
- **2-IMO-275, SI PUMP DISCHARGE XTIE**

RECORD THE TIME AND DATE

CUE: YOU ARE THE INDEPENDENT VERIFICATION FOR THE STEP

Comment:

Performance step: 11 **CRITICAL STEP** SAT/UNSAT

OPEN 2-IRV60, SI PUMPS DISCHARGE TO ACCUMULATOR FILL LINE

Standard:

CALLS AUX OPERATOR TO OPEN 2-IRV60, SI PUMPS DISCHARGE TO ACCUMULATOR FILL LINE

Comment:

Performance step: 12 SAT/UNSAT

DECLARE ACCUMULATOR #3 INOPERABLE

Standard:

DECLARE ACCUMULATOR #3 INOPERABLE TO THE SHIFT MANAGER AND ENTER TECH SPEC 3.5.1 ACTION ITEM B
ENTER THE DATE AND TIME

CUE: AS SHIFT MANAGER ACKNOWLEDGE THAT THE TECH SPEC HAS BEEN ENTERED

Comment:

Performance step: 13 **CRITICAL STEP** SAT/UNSAT

OPEN ACCUMULATOR #3 FILL VALVE

Standard:

OPEN FILL VALVE FOR ACCUMULATOR #3 (2-IRV-131, ACCUM FILL LINE) AND RECORD THE START TIME IN CONTROL ROOM LOG

CUE: WHEN CANDIDATE ASKS FOR THE CONTROL ROOM LOG, TELL THEM THAT YOU WILL COMPLETE THE LOG

Comment:

Performance step: 14 SAT/UNSAT

REGULATE ACCUMULATOR #3 PRESSURE

Standard:

REGULATE THE PRESSURE IN ACCUMULATOR # 3 USING 2-IRV-132, ACCUM NITROGEN SUPPLY AND 2-GRV-341, N_2 VENT FROM ACCUMULATOR TANK, TO MAINTAIN APPROXIMATELY 650 PSIG.

NOTE: THIS MAY BECOME CRITICAL IF THE PRESSURE MUST BE ADJUSTED.

Comment:

Performance step: 15 **CRITICAL STEP** SAT/UNSAT

CLOSE ACCUMULATOR FILL LINE

Standard:

CLOSE 2-IRV-131,ACCUM FILL LINE WHEN LEVEL IS WITHIN $\pm$ 2 FT^3 OF 950 FT^3 AND PERFORM LINEUP SHEET 2 (SEE ATTACHED LINEUP SHEET)

CUE: YOU ARE THE INDEPENDENT VERIFICATION FOR THE STEP

NOTE: ENSURE THAT 2-IRV60 IS CLOSED

Comment:

Performance step: 16 SAT/UNSAT

DECLARE ACCUMULATOR OPERABLE

Standard:

DECLARE ACCUMULATOR #3 OPERABLE AND INFORM THE SHIFT MANAGER TO EXIT TECH SPEC 3.5.1 ACTION ITEM B.
RECORD THE TIME AND DATE

Comment:

Terminating cue: THE JPM IS COMPLETE WHEN PERFORMANCE STEP 16 IS COMPLETE. INFORM THE CANDIDATE THAT THE REST OF THE PROCEDURE WILL BE COMPLETED BY ANOTHER RO.

VERIFICATION OF COMPLETION

Job Performance Measure No. B.1.d

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

Initial Conditions: UNIT 2 IS AT 100% POWER AND THE MAIN GENERATOR IS BEING SYNCHRONIZED TO THE GRID. SI ACCUMULATOR 3 LEVEL IS 940 FT^3. ALL OF THE PREREQISITES FOR STARTING THE SI PUMP ARE MET AND PERSONNEL ARE STANDING BY READY TO START THE PUMP

Initiating Cue: YOU ARE TO FILL SI ACCUMULATOR #3 TO 950 FT^3 USING 02-OHP.4021.008.004 ATTACHMENT 3, STEP 4.1 THRU 4.11.

Appendix C	Job Performance Measure Worksheet	Form ES-C-1

Facility: D.C. Cook Task No: _____

Task Title: PZR Pressure Control Job Performance Measure No: B.1.e

K/A Reference: 010 A4.02 3.6/3.4

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance: __ Actual Performance: _X_ Classroom: __ Simulator: _X_ Plant: __

Task Standard: MAINTAIN RCS PRESSURE ABOVE THE REACTOR TRIP SETPOINT

Required Materials: 02-OHP.4030.STP.040 STEP 4.2

General References: 02-OHP.4030.STP.040

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions: UNIT 2 IS AT 100% POWER

Initiating Cue: THE PREVIOUS SHIFT HAD PROBLEMS WITH THE HEATERS ON 21PHC CURRENT METER AND MAINTENANCE HAS BEEN COMPLETED. YOU ARE TO PERFORM A PRESSURIZER HEATER CAPACITY TEST PER 02-OHP.4030.STP.040 STEP 4.2.

Time Critical Task: YES/(NO)

Validation Time: 10 Minutes

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

Performance step: 1 SAT/UNSAT

GET PROCEDURE 02-OHP.4030.STP.040

Standard:

GET PROCEDURE 02-OHP.4030.STP.040

CUE: HAND THE PROCEDURE TO THE CANDIDATE WHEN HE FINDS THE CORRECT PROCEDURE

Comment:

Performance step 2 SAT/UNSAT

VERIFY PZR LEVEL

Standard:

VERIFY PZR LEVEL GREATER THAN 22%

Comment:

Performance step: 3 SAT/UNSAT

VERIFY THE SCR POWER CONTROL CB 21PHC6 CONDITION

Standard:

VERIFY THE FOLLOWING ON SCR POWER CONTROL CB 21 PHC6

- GREEN FLAG – UP
- GREEN LAMP - LIT

Comment:

Performance step: 4 SAT/UNSAT

VERIFY PZR HEATERS ARE OFF

Standard:

VERIFY THE FOLLOWING HEATERS ARE OFF:
- HEATER GRC1 CB 21PHC2
- HEATER GRC2 CB 21PHC3
- HEATER GRC2 CB 21PHC5

Comment:

Performance step: 5 SAT/UNSAT

VERIFY BREAKER T21D9 CLOSED

Standard:

VERIFY BREAKER T21D9 CLOSED

Comment:

Performance step: 6 **CRITICAL STEP** SAT/UNSAT

RECORD 21PHC CURRENT

Standard:

RECORD 21PHC CURRENT WITH THE HEATERS OFF

NOTE: THE CANDIDATE SHOULD RECORD '0' AMPS

Comment:

Performance step: 7 **CRITICAL STEP** SAT/UNSAT

CLOSE THE PZR HEATERS

Standard:

CLOSE THE FOLLOWING HEATERS:
- **HEATER GRC1 CB 21PHC2**
- **HEATER GRC2 CB 21PHC3**
- **HEATER GRC3 CB 21PHC5**

Comment:

Performance step: 8 **CRITICAL STEP** SAT/UNSAT

RECORD 21PHC CURRENT

Standard:

RECORD 21PHC CURRENT WITH THE HEATERS ON

Comment:

Performance step: 9 **CRITICAL STEP** SAT/UNSAT

RETURN THE PZR HEATERS TO DESIRED POSITION

Standard:

RETURN THE PZR HEATERS TO DESIRED POSITION
- **OPEN BREAKER 21PHC2**
- **OPEN BREAKER 21PHC3**
- **OPEN BREAKER 21PHC5**
- **CLOSE BREAKER 21PHC6**

Comment:

Performance step: 10 **CRITICAL STEP** SAT/UNSAT

RECORD THE DIFFERENCE IN CURRENTS

Standard:

CHECK THE DIFFERENCE IN CURRENT ON 21PHC – GREATER THAN OR EQUAL TO 25 AMPS

Comment:

Terminating cue:

VERIFICATION OF COMPLETION

Job Performance Measure No. B.1.e

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

Initial Conditions: UNIT 2 IS AT 100% POWER

Initiating Cue: THE PREVIOUS SHIFT HAD PROBLEMS WITH THE HEATERS ON 21PHC CURRENT METER AND MAINTENANCE HAS BEEN COMPLETED. YOU ARE TO PERFORM A PRESSURIZER HEATER CAPACITY TEST PER 02-OHP.4030.STP.040 STEP 4.2.

Appendix C	Job Performance Measure Worksheet	Form ES-C-1

Facility: D.C. Cook Task No: _____

Task Title: CONTAINMENT PRESSURE RELIEF Job Performance Measure No: B.1.f

K/A Reference: 029 A1.03 3.0/3.3

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance: __ Actual Performance: _X_ Classroom: __ Simulator: _X_ Plant: __

Task Standard: CONTAINMENT PRESSURE IS REDUCED

Required Materials: 02-OHP.4021.028.004

General References: 02-OHP.4021.028.004

NOTE: SIMULATOR OPERATOR FOR IC-934 REMOVE MALFUNCTION ON 2-VRS-2201

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions: PLANT IS OPERATING AT RATED POWER. CONTAINMENT PRESSURE HAS INCREASED DUE TO PROBLEMS ASSOCIATED WITH CONTAINMENT COOLING. PRESSURE INCREASED TO +0.25 PSIG AND THE SHIFT SUPERVISOR DIRECTED THAT CONTAINMENT PRESSURE BE REDUCED IN ACCORDANCE WITH OHP 40201.028.004, OPERATION OF THE CONTAINMENT PRESSURE RELIEF SYSTEM. THERE ARE NO ABNORMAL RCS LEAK RATES. ALL RADIATION MONITORS ARE OPERABLE. CONTAINMENT PRESSURE RELIEF SYSTEM ABSOLUTE AND CHARCOAL FILTERS ARE OPERABLE.

Initiating Cue: THE SHIFT SUPERVISOR HAS DIRECTED YOU TO RELIEVE CONTAINMENT PRESSURE TO LESS THAN +0.20 PSIG IN ACCORDANCE WITH 02-OHP.4021.028.004, OPERATION OF THE CONTAINMENT PRESSURE RELIEF SYSTEM.

Time Critical Task: YES/(NO)

Validation Time: 15 MINUTES

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

Performance step: 1 SAT/UNSAT

Verify proper operation of Radiation Monitoring System (RMS) per step 4.1.1.

Standard: All RMS per step 4.1.1 have been checked and are operating properly.

CUE: Status of VRA-2501 and VRS-2505 are operating properly.

Comment:

Performance step 2 **CRITICAL STEP** SAT/UNSAT

Records the data in Section A of Data Sheet No.1

Standard:

Records the data in Section A of Data Sheet No.1, Containment Pressure Relief Data, per step 4.1.6

CUE: DATA INFO:

- CPR number next in sequence from surveillance book - given as 01-011
- Unit Vent Flow - (83000 CFM)
- Highest reading on 2-MR-37, Containment Low Range Pressure Recorder (0.25 PSI AS IN THE INITIAL CONDITION)

Comment:

Performance step: 3 **CRITICAL STEP** SAT/UNSAT

Verify proper TRIP/BLOCK switch positions per step 4.2.

Standard:

No inoperable channels, all TRIP/BLOCK switches placed in NORMAL.

Comment:

Performance step: 4 SAT/UNSAT

Determine proper step to initiate containment pressure relief

Standard:

Proceeds to step 4.4.

Comment:

Performance step: 5 **CRITICAL STEP** SAT/UNSAT

OPEN 2-VCR-107 AND 207

Standard:

Both valves open.

Comment:

Performance step: 6 **CRITICAL STEP** SAT/UNSAT

Start 2-HV-CPR-1, Pressure Relief Fan.

Standard:

Fan starts.

Note: Trigger for 2VRS-2505 to fail upscale is ORPZDL101CPR1

Comment:

Performance step: 7 SAT/UNSAT

Record start time on Section B of Data Sheet No. 1.

Standard:

Record start time on Section B of Data Sheet No. 1.

Comment:

Performance step: 8 **CRITICAL STEP** SAT/UNSAT

Receive rad alarm for 2-VRS-2505.

- **Per step 4.3.3, must terminate pressure relief (stop HV-CPR-1, Pressure Relief Fan, AND close isolation valves VCR-107 and 207).**
- **Obtain current unit vent flow rate from 2-VFR-2510 OR 2-VFR-315 (low setpoint)**
- **Check annunciator response procedure - if any**
- **Call RP to recalculate and change the high alarm setpoint.**

Standard:

RP determines VRS-2505 is INOPERABLE. VRA-2501 reading normal, operable.

Comment:

Performance step: 9 **CRITICAL STEP** SAT/UNSAT

Determine requirement for inoperable VRS-2505 per step 4.1.4

Standard:

Determine requirement for inoperable VRS-2505 per step 4.1.4:

- **perform pressure relief without using the pressure relief fan, HV-CPR-1.**
- **request Chemistry sample vent stack during pressure relief.**

Comment:

Performance step: 10 **CRITICAL STEP** SAT/UNSAT

Per step 4.3.3, re-initiate pressure relief at step 4.4.1.

- **Open 2-VCR-107 and 207**

Standard:

Both valves open.

Comment:

Performance step: 11 **CRITICAL STEP** SAT/UNSAT

Per step 4.4.3, IF pressure relief fan will NOT be used, THEN open 2-HV-CDP-2, Containment Pressure Relief Ventilation Unit HV-CPR-1 Bypass Volume Damper.

Standard:

HV-CDP-2 opens.

Comment:

Performance step: 12 SAT/UNSAT

Record start time on Section B of Data Sheet No. 1.

Standard:

Record start time on Section B of Data Sheet No. 1.

Comment:

Performance step: 13 **CRITICAL STEP** SAT/UNSAT

Continue to reduce pressure until desired Containment pressure is reached.

NOTE: Pressure must be reduced between -1.0 psig and + 0.15 psig during normal operations. Therefore, the applicant must continue to relieve pressure until less than + 0.15 psig.

Standard:

Containment pressure is reading + 0.10 psig.

NOTE: PRIOR TO GIVING THE CUE OF +0.10 ASK THE CANDIDATE THE DESIRED PRESSURE FOR CONTAINMENT PRESSURE TO BE REDUCED TOO. IF THE APPLICANT DETERMINES TO STOP PRESSURE RELIEF AT > +0.15 PSIG, ASK A FOLLOW UP QUESTION ON THE REQUIRED PRESSURE BAND FOR CONTAINMENT PRESSURE. IF THE CANDIDATE NOTES TECH SPEC PRESSURE BAND, GRADE SATISFACTORY, BUT NOTE THE WEAKNESS OF PROCEDURE COMPLIANCE.
Comment:

Performance step: 14 **CRITICAL STEP** SAT/UNSAT

Close 2-HV-CDP-2.

Standard:

2-HV-CDP-2 IS CLOSED.

Comment:

Performance step: 16 **CRITICAL STEP** SAT/UNSAT

Close Containment Isolation valves 2-VCR-107 and 207.

Standard:

Containment Isolation valves 2-VCR-107 and 207 ARE CLOSED.

Comment:

Performance step: 17 SAT/UNSAT

Place RMS block switches to block.

Standard:

Place RMS block switches to block.

Comment:

Terminating cue:

VERIFICATION OF COMPLETION

Job Performance Measure No. B.1.f

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____

_____

_____

Response:_____

_____

_____

_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

Initial Conditions: PLANT IS OPERATING AT RATED POWER. CONTAINMENT PRESSURE HAS INCREASED DUE TO PROBLEMS ASSOCIATED WITH CONTAINMENT COOLING. PRESSURE INCREASED TO +0.25 PSIG AND THE SHIFT SUPERVISOR DIRECTED THAT CONTAINMENT PRESSURE BE REDUCED IN ACCORDANCE WITH OHP 40201.028.004, OPERATION OF THE CONTAINMENT PRESSURE RELIEF SYSTEM. THERE ARE NO ABNORMAL RCS LEAK RATES. ALL RADIATION MONITORS ARE OPERABLE. CONTAINMENT PRESSURE RELIEF SYSTEM ABSOLUTE AND CHARCOAL FILTERS ARE OPERABLE.

Initiating Cue: THE SHIFT SUPERVISOR HAS DIRECTED YOU TO RELIEVE CONTAINMENT PRESSURE TO LESS THAN +0.20 PSIG IN ACCORDANCE WITH 02-OHP.4021.028.004, OPERATION OF THE CONTAINMENT PRESSURE RELIEF SYSTEM.

Appendix C	Job Performance Measure Worksheet	Form ES-C-1

Facility: D.C. Cook Task No: _____

Task Title: Radiation Monitor Job Performance Measure No: B.1.g

K/A Reference: 073 A4.02 3.7/3.7

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance: __ Actual Performance: _X_ Classroom: __ Simulator: _X_ Plant: __

Task Standard: DATA IS PRINTED FOR THE CORRECT EBERLINE RADIATION MONITORS

Required Materials: 12-OHP.4021.013.006 SECTION 4.1 & 4.2, ATTACHMENT 11 PAGE 31 OF 55, ATTACHMENT 21 PAGE 45 OF 55

General References: 12-OHP.4021.013.006

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions: UNIT 2 IS SHUTDOWN AFTER A LOCA. RHR IS BEING TRANSFERRED TO HOT LEG RECIRCULATION.

Initiating Cue: RHR IS BEING PLACED ON HOT LEG RECIRCULATION. YOU ARE TO PRINT A 10 MINUTE HISTORY TREND OF ERS-2403, 'LOWER CNTMT I-131 MONITOR' AND ERA-8305, 'U2 EAST RHR PUMP ROOM MONITOR'

Time Critical Task: YES/(NO)

Validation Time:10 minutes

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

Performance step: 1 SAT/UNSAT

GET THE PROCEDURE

Standard:

GET PROCEDURE 12-OHP.4021.013.006 STEP 4.1.3 AND THE ATTACHMENTS

CUE: HAND THE CANDIDATE A COPY OF THE PROCEDURE AND ATTACHMENTS

Comment:

Performance step 2 **CRITICAL STEP** SAT/UNSAT

VIEW HISTORY TREND PER STEP 4.1.3

Standard:

PRESS THE KEY PADS IN THE FOLLOWING SEQUENCE:

- **HIST 10 MIN**
- **ERS-2403 (LOWER CNTMT I-131 MONITOR)**
- **ENTER**

NOTE: THIS WILL PROVIDE A TREND FOR THE LAST 10 MINUTES. THE CANDIDATE MAY USE THE + & - KEY TO SCROLL THROUGH THE DATA BEFORE PRINTING

Comment:

Performance step: 3 SAT/UNSAT

PRINT THE DATA PER STEP 4.2

Standard:

SELECT THE DESIRED PRINTER USING THE T-SWITCH LOCATED ABOVE THE OPERATOR CONSOLE

NOTE: 2403 WILL BE IN 'EXTERNAL FAIL' DUE TO CONTAINMENT PHASE 'B'

Comment:

Performance step: 4 **CRITICAL STEP** SAT/UNSAT

PRINT THE TREND

Standard:

PRESS THE KEY PADS IN THE FOLLOWING SEQUENCE:
- **PRINT**
- **FILE**
- **ENTER**

Comment:

Performance step: 5 SAT/UNSAT

SELECT THE DESIRED PRINTER FOR PRINTOUT

Standard:

SELECT THE APPROPRIATE PRINTER AFTER PRINTOUT IS OBTAINED, FOR DESIRED (NORMAL) PRINTING

Comment:

Performance step: 6 SAT/UNSAT

RETURN TO STEP 4.1.3

Standard:

RETURN TO STEP 4.1.3 TO OBTAIN THE NEXT TREND

Comment:

Performance step 7 **CRITICAL STEP** SAT/UNSAT

VIEW HISTORY TREND PER STEP 4.1.3

Standard:

PRESS THE KEY PADS IN THE FOLLOWING SEQUENCE:
- **HIST 10 MIN**
- **ERA-8305, (U2 EAST RHR PUMP ROOM MONITOR)**
- **ENTER**

NOTE: THIS WILL PROVIDE A TREND FOR THE LAST 10 MINUTES. THE CANDIDATE MAY USE THE + & - KEY TO SCROLL THROUGH THE DATA BEFORE PRINTING

Comment:

Performance step: 8 SAT/UNSAT

PRINT THE DATA PER STEP 4.2

Standard:

SELECT THE DESIRED PRINTER USING THE T-SWITCH LOCATED ABOVE THE OPERATOR CONSOLE

Comment:

Performance step: 9 **CRITICAL STEP** SAT/UNSAT

PRINT THE TREND

Standard:

PRESS THE KEY PADS IN THE FOLLOWING SEQUENCE:
- **PRINT**
- **FILE**
- **ENTER**

Comment:

Performance step: 10 SAT/UNSAT

SELECT THE DESIRED PRINTER FOR PRINTOUT

Standard:

SELECT THE APPROPRIATE PRINTER AFTER PRINTOUT IS OBTAINED, FOR DESIRED (NORMAL) PRINTING

Comment:

Terminating cue:

VERIFICATION OF COMPLETION

Job Performance Measure No. B.1.g

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____

_____

_____

Response:_____

_____

_____

_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

Initial Conditions: UNIT 2 IS SHUTDOWN AFTER A LOCA. RHR IS BEING TRANSFERRED TO HOT LEG RECIRCULATION.

Initiating Cue: RHR IS BEING PLACED ON HOT LEG RECIRCULATION. YOU ARE TO PRINT A 10 MINUTE HISTORY TREND OF ERS-2403, 'LOWER CNTMT I-131 MONITOR' AND ERA-8305, 'U2 EAST RHR PUMP ROOM MONITOR'

Appendix C	Job Performance Measure Worksheet	Form ES-C-1

Facility: D.C. Cook Task No: _____

Task Title: Alternate Source of Water for MDAFW Job Performance Measure No: B.2.a

K/A Reference: 061 K4.01 4.1/4.2

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance: X Actual Performance: __ Classroom: __ Simulator:__ Plant: X

Task Standard: ALIGN ESW TO AFW

Required Materials: 02-OHP.4022.055.003 STEP 13

General References: 02-OHP.4022.055.003

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions: A LOSS OF FEEDWATER HAS OCCURRED. THE CONDENSER AND THE CST ARE EMPTY.

Initiating Cue: YOU ARE TO ALIGN ESW SUCTION TO THE WEST AFW PUMP PER 02-OHP.4022.055.003 STEP 13.

Time Critical Task: YES/(NO)

Validation Time: 20 Minutes

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

Performance step: 1 SAT/UNSAT

GET THE CORRECT PROCEDURE

Standard:

GET PROCEDURE 02-OHP.4022.055.003

CUE: HAND THE PROCEDURE TO THE CANDIDATE

Comment:

Performance step 2 **CRITICAL STEP** SAT/UNSAT

ALIGN THE WEST MDAFW PUMP

Standard:

CLOSE 2-ESW-244, TELL-TAIL DRAIN

Comment:

Performance step 3 **CRITICAL STEP** SAT/UNSAT

ALIGN THE WEST MDAFW PUMP

Standard:

OPEN 2-ESW-243, SUCTION FROM ESW

Comment:

Performance step 4 SAT/UNSAT

OPEN 2-WMO-744

Standard:

CALL THE CONTROL ROOM TO OPEN 2-WMO-744, SUCTION FROM ESW

CUE: 2-WMO-744 POWER HAS BEEN REMOVED FROM THE VALVE. OPEN THE VALVE LOCALLY

Comment:

Performance step: 5 **CRITICAL STEP** SAT/UNSAT

OPEN 2-WMO-744 LOCALLY

Standard:

PUSH THE LEVER COUNTER-CLOCKWISE AND TURN THE HANDWHEEL COUNTER CLOCKWISE TO OPEN 2-WMO-744, SUCTION FROM ESW

Comment:

Terminating cue:

VERIFICATION OF COMPLETION

Job Performance Measure No. B.2.a

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____

_____

_____

Response:_____

_____

_____

_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

Initial Conditions: A LOSS OF FEEDWATER HAS OCCURRED. THE CONDENSER AND THE CST ARE EMPTY.

Initiating Cue: YOU ARE TO ALIGN ESW SUCTION TO THE WEST AFW PUMP PER 02-OHP.4022.055.003 STEP 13.

Appendix C	Job Performance Measure Worksheet	Form ES-C-1

Facility: D.C. Cook Task No: _____

Task Title: Place SFP Demineralizer Inservice Job Performance Measure No: B.2.b

K/A Reference: 033 K4.01 2.9/3.2

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance: X Actual Performance: __ Classroom: __ Simulator:__ Plant: X

Task Standard: PLACE THE SFP DEMINERALIZER IN SERVICE AND BACKFLUSH

Required Materials: 12-OHP.4021.018.002 STEP 4.4, 12-0HP.4021.012.016

General References: 12-OHP.4021.018.002, 12-0HP.4021.012.016

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions: UNIT 2 IS AT 100% POWER. SECTION 4.3 OF PROCEDURE 12-OHP.4-21.018.002 HAS BEEN COMPLETED.

Initiating Cue: PLACE THE SPENT FUEL PIT DEMINERALIZER IN SERVICE PER 12-OHP.4021.018.002 STEP 4.4. STEP 4.3 HAS BEEN COMPLETED.

NOTE: HAND THE PROCEDURE TO THE CANDIDATE

Time Critical Task: YES/(NO)

Validation Time: 20 Minutes

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

Performance step: 1 **CRITICAL STEP** SAT/UNSAT

THROTTLE 12-SF-129

Standard:

THROTTLE 12-SFP-129 (SFP FILTER OUTLET TO SFP) TO LESS THAN 100 GPM

CUE: INITIAL FLOW INDICATES 110 GPM, FLOW INDICATION DECREASES TO 75 GPM AS THE VALVE IS BEING THROTTLED

Comment:

Performance step 2 **CRITICAL STEP** SAT/UNSAT

OPEN THE DEMINERALIZER VALVES

Standard:

OPEN THE FOLLOWING VALVES:
- **12-SF-130, SFP PUMP DISCHARGE TO SFP DEMINERALIZER**
- **12-SF-131, SFP DEMINERALIZER TO SFP**

Comment:

Performance step: 3 **CRITICAL STEP** SAT/UNSAT

CLOSE 12-SF-126, SFP PUMPS DISCHARGE TO SFP FILTER

Standard:

CLOSE 12-SF-126, SFP PUMPS DISCHARGE TO SFP FILTER

Comment:

Performance step: 4 **CRITICAL STEP** SAT/UNSAT

ADJUST 12-SF-129

Standard:

ADJUST 12-SF-129 AS NECESSARY TO MAINTAIN FLOW THROUGH SFP CLEANUP SYSTEM LESS THAN 100 GPM

CUE: FLOW INDICATION ONLY INCREASES TO 35 GPM AND IS DECREASING

NOTE: IF THE CANDIDATE DOES NOT RECOGNIZE THE IMPORTANCE OF LOW FLOW, CALL AS THE UNIT SUPERVISOR ASKING THE STATUS AND IF THE FLOWS ARE NORMAL. IF THE CANDIDATE ONLY INFORMS YOU THAT SOMETHING IS WRONG, ASK "WHAT DO YOU RECOMMEND?"

Comment:

Performance step: 5 **CRITICAL STEP** SAT/UNSAT

TRANSITION TO 12-OHP.4021.018.016

Standard:

TRANSITION TO 12-OHP.4021.018.016

CUE: HAND THE CANDIDATE THE PROCEDURE AND INFORM THE CANDIDATE THAT THE PREREQUISITES HAVE BEEN COMPLETED AND BACK FLUSH FROM THE U-1 RWST. ANOTHER OPERATOR HAS COMPLETED STEP 4.1.

Comment:

Performance step: 6 **CRITICAL STEP** SAT/UNSAT

LINEUP THE U-1 RWST

Standard:

PERFORM THE FOLLOWING:

- **CLOSE 2-SI-184, REFUELING WATER STORAGE TANK TO REFUELING WATER PURIFICATION PUMP SUCTION SHUTOFF VALVE**
- **OPEN 1-SI-183, REFUELING WATER STORAGE TANK TO REFUELING WATER PURIFICATION PUMP SUCTION SHUTOFF VALVE**
- **OPEN SF-167, REFUELING WATER STORAGE TANK TO REFUELING WATER PURIFICATION PUMP 12-PP-30 SUCTION SHUTOFF VALVE**

Comment:

Performance step: 7 **CRITICAL STEP** SAT/UNSAT

LINEUP THE BACKFLUSH

Standard:

OPEN THE FOLLOWING VALVES:

- **12-SF-137, REFUELING WATER PURIFICATION PUMP DISCHARGE TO FILTER SHUTOFF VALVE**
- **12-SF-136, SPENT FUEL PIT DEMINERALIZER QC-2 TO REFUELING WATER PURIFICATION SHUTOFF VALVE**
- **12-SF-133, SPENT FUEL PIT DEMINERALIZER QC-2 OUTLET SHUTOFF VALVE**
- **12-SF-130, SPENT FUEL PIT PUMPS DISCHARGE TO SPENT FUEL PIT FILTER QC-2 SHUTOFF VALVE**
- **12-SF-126, SPENT FUEL PIT PUMPS DISCHARGE TO SPENT FUEL PIT FILTER QC-3 SHUTOFF VALVE**
- **12-SF-127, SPENT FUEL PIT FILTER QC-3 INLET SHUTOFF VALVE**
- **12-SF-128, SPENT FUEL PIT FILTER QC-3 SHUTOFF VALVE**

NOTE: 12-SF-127 AND 128 ARE IN A LOCKED HIGH RAD AREA. WHEN THE CANDIDATE TELLS YOU WERE THE VAVLES ARE LOCATED READ THE CUE.

CUE: VALVES 12-SF-127 AND 128 HAVE BEEN OPENED BY ANOTHER OPERATOR.

Comment:

Performance step: 8 SAT/UNSAT

NOTIFY RP

Standard:

NOTIFY RP TO MONITOR 12-QC-3, SFP FILTER, FOR INCREASING DOSE RATES INDICATING THE FILTER IS GETTING CLOGGED

Comment:

Performance step: 9 **CRITICAL STEP** SAT/UNSAT

START REFUELING WATER PURIFICATION PUMP, 12-PP-30

Standard:

START REFUELING WATER PURIFICATION PUMP, 12-PP-30, AND IMMEDIATELY BEGIN TO THROTTLE 12-SF-129

CUE: YOU ARE THE SECOND PERSON FOR THIS STEP AND WILL WATCH THE PUMP

Comment:

Performance step: 10 SAT/UNSAT

ESTABLISH GREATER THAN 90 GPM

Standard:

ESTABLISH GREATER THAN 90 GPM

Comment:

Terminating cue: THE JPM IS OVER WHEN THE BACKFLUSH HAS BEEN STARTED

VERIFICATION OF COMPLETION

Job Performance Measure No. B.2.b

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____

_____

_____

Response:_____

_____

_____

_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

Initial Conditions: UNIT 2 IS AT 100% POWER. SECTION 4.3 OF PROCEDURE 12-OHP.4-21.018.002 HAS BEEN COMPLETED.

Initiating Cue: PLACE THE SPENT FUEL PIT DEMINERALIZER IN SERVICE PER 12-OHP.4021.018.002 STEP 4.4. STEP 4.3 HAS BEEN COMPLETED.

Appendix C	Job Performance Measure Worksheet	Form ES-C-1

Facility: D.C. Cook _____ Task No: _____

Task Title: Perform Manual Alt. Boration Job Performance Measure No: B.2.c

K/A Reference: 004 K4.01 4.4/4.6

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

NOTE: DO THIS AS THE LAST JPM IN THE RCA IF POSSIBLE

Method of testing:

Simulated Performance: **X** Actual Performance: __ Classroom: __ Simulator:__ Plant: **X**

Task Standard: ALTERNATE BORATION IS ESTABLISHED

Required Materials: 01-OHP.4025.LS-5, "RCS MAKEUP, SEAL INJECTION AND BORATION WITH UNIT 1 CCP" SECTION LS-5-3, "ALTERNATE BORATION"

General References: 01-OHP.4025.LS-5

READ TO THE EXAMINEE

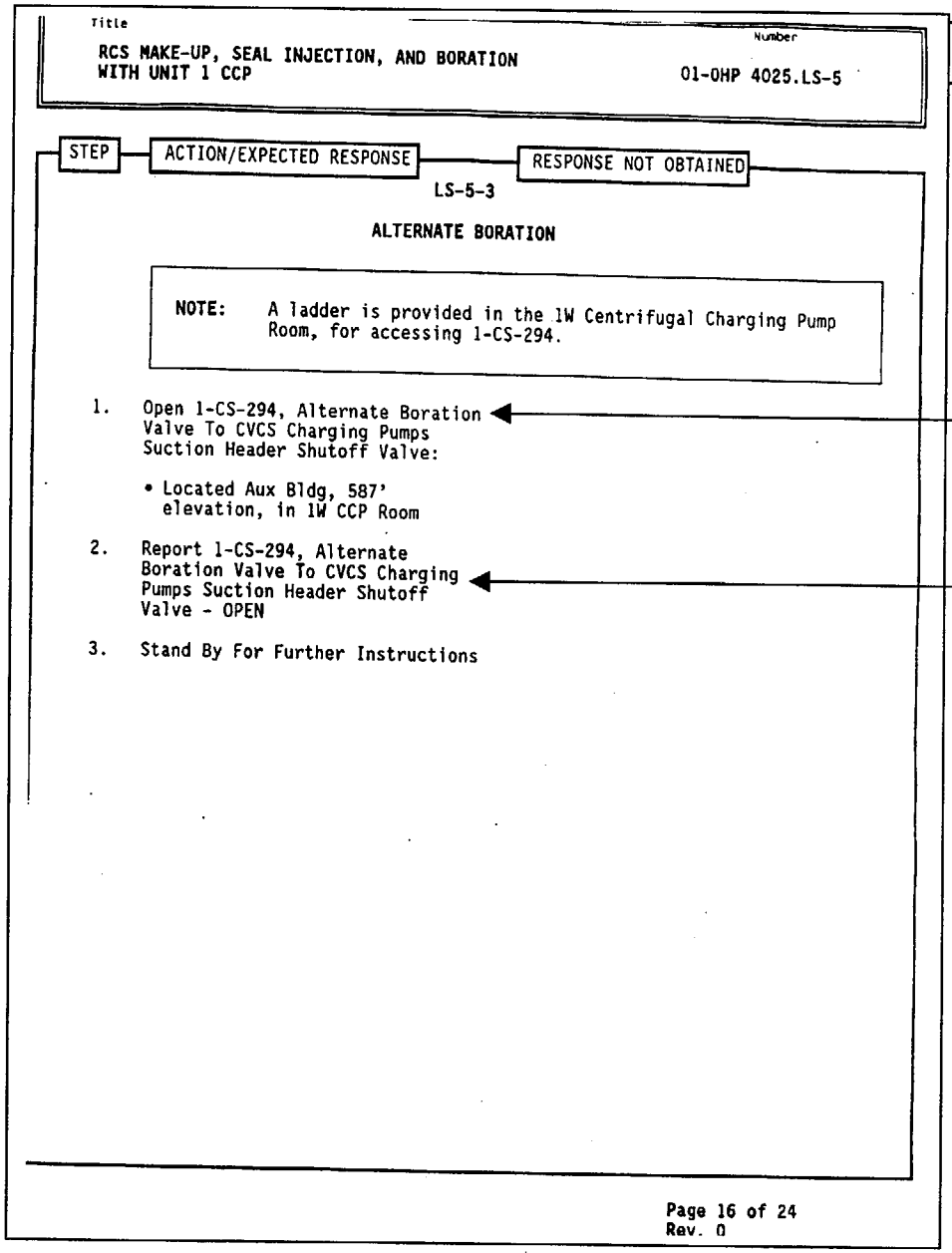
I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions: A FIRE IN UNIT 1 HAS RESULTED IN A CONTROL ROOM EVACUATION AND IMPLEMENTATION OF THE EMERGENCY REMOTE SHUTDOWN PROCEDURE. THE CONTROL ROOM CREW HAS ACTIVATED THE HOT SHUTDOWN PANEL. UNIT 1 IS PREPARING TO COOL DOWN TO MODE 4. CONTROL AIR IS AVAILABLE.

Initiating Cue: THE UNIT SUPERVISOR HAS DIRECTED YOU TO LOCALLY ALIGN THE ALTERNATE EMERGENCY BORATION FLOW PATH USING 01-OHP.4025.LS-5, "RCS MAKEUP, SEAL INJECTION AND BORATION WITH UNIT 1 CCP" SECTION LS-5-3, "ALTERNATE BORATION". YOU HAVE AN A-37 KEY FOR THE APPENDIX 'R' LADDER.

Time Critical Task: YES/(NO)

Validation Time: 15 Minutes



Title

RCS MAKE-UP, SEAL INJECTION, AND BORATION WITH UNIT 1 CCP

Number

01-OHP 4025.LS-5

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

LS-5-3

ALTERNATE BORATION

NOTE: A ladder is provided in the 1W Centrifugal Charging Pump Room, for accessing 1-CS-294.

1. Open 1-CS-294, Alternate Boration Valve To CVCS Charging Pumps Suction Header Shutoff Valve:

   • Located Aux Bldg, 587' elevation, in 1W CCP Room

2. Report 1-CS-294, Alternate Boration Valve To CVCS Charging Pumps Suction Header Shutoff Valve - OPEN

3. Stand By For Further Instructions

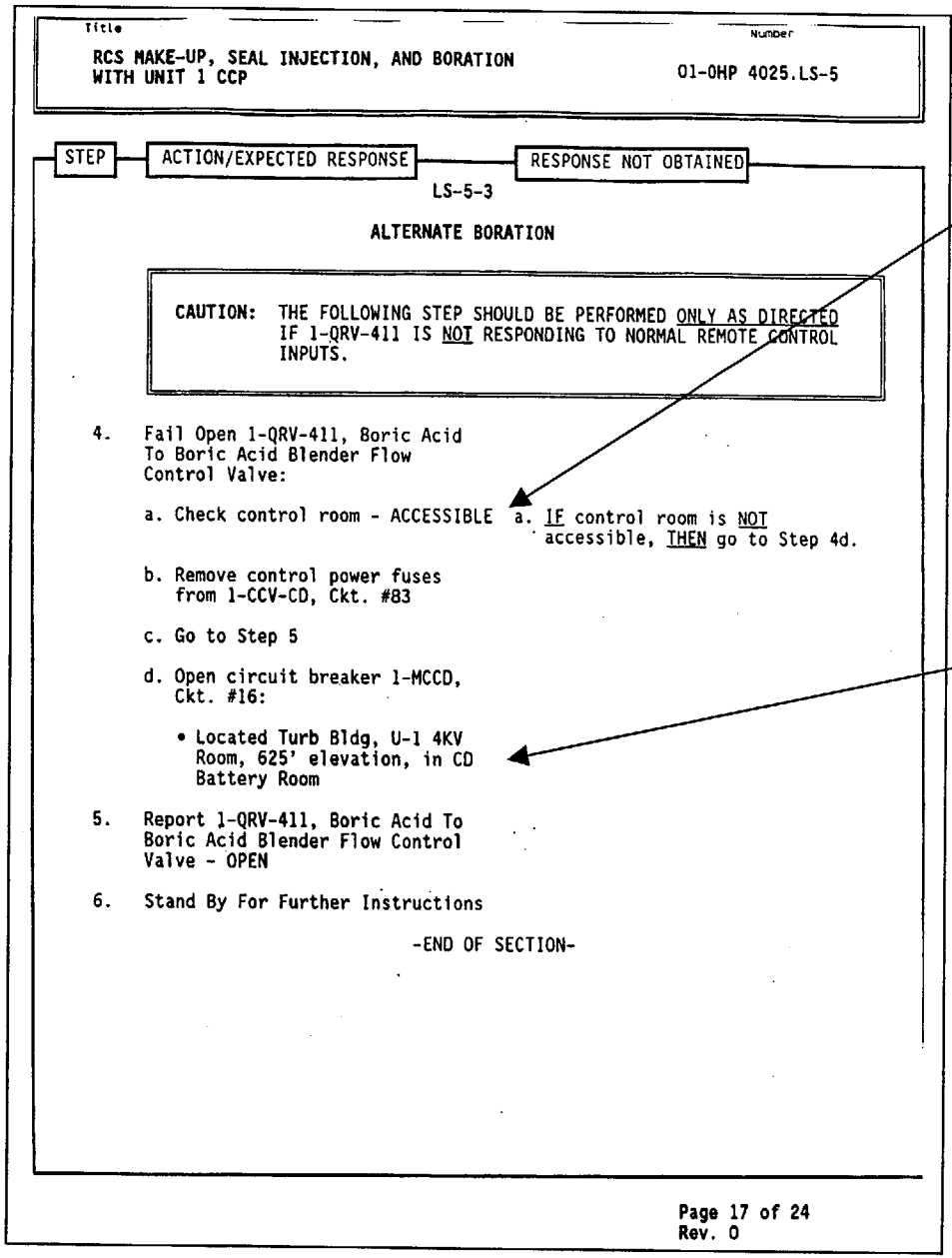
Page 16 of 24
Rev. 0

~~NOTE: When~~ this task is simulated no valves are to be mainpulated nor is equipment necessary to perform the task to be brought into areas where the task is performed.

Locates ladder and describes placement to reach CS-294). ©

Simulates opening valve. ©
Initial Condition: Valve is normally closed.
Feedback: Standard valve operation cues.

Reports action completion.
Role Play: US acknowledges CS-294 is open.
US directs student to open BA Blender Flow Control Valve 1-QRV-411 in accordance with Step 4.



Title
RCS MAKE-UP, SEAL INJECTION, AND BORATION WITH UNIT 1 CCP

Number
01-0HP 4025.LS-5

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

LS-5-3

ALTERNATE BORATION

CAUTION: THE FOLLOWING STEP SHOULD BE PERFORMED ONLY AS DIRECTED IF 1-QRV-411 IS NOT RESPONDING TO NORMAL REMOTE CONTROL INPUTS.

4. Fail Open 1-QRV-411, Boric Acid To Boric Acid Blender Flow Control Valve:

   a. Check control room - ACCESSIBLE — a. IF control room is NOT accessible, THEN go to Step 4d.

   b. Remove control power fuses from 1-CCV-CD, Ckt. #83

   c. Go to Step 5

   d. Open circuit breaker 1-MCCD, Ckt. #16:

      • Located Turb Bldg, U-1 4KV Room, 625' elevation, in CD Battery Room

5. Report 1-QRV-411, Boric Acid To Boric Acid Blender Flow Control Valve - OPEN

6. Stand By For Further Instructions

-END OF SECTION-

Page 17 of 24
Rev. 0

The Control Room is not accessible.

Simulates opening circuit breaker. ©

Reports completion of actions.

TERMINATE JPM – when report is made.

UNIT 1 BRIEFING:

A fire has resulted in a control room evacuation and implementation of the Emergency Remote Shutdown Procedure. The control room crew has activated the Hot Shutdown Panel. Unit 1 is preparing to cool down to Mode 4. Control air is available.

The Unit Supervisor has provided you with the following brief:
The crew is performing a boration of the RCS to support the plant cooldown. I need you to locally align the alternate emergency boration flowpath, using 01-OHP 4025.LS-5, "RCS Makeup, Seal Injection and Boration with Unit 1 CCP", section LS-5-3, "Alternate Boration". A ladder will be needed to perform the task. All component locations are contained in the procedure. I do not expect you to encounter any hazardous conditions enroute to or at the local control station. Report back to me when directed by procedure. Do you have any questions?

VERIFICATION OF COMPLETION

Job Performance Measure No. B.2.c

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____

Response:_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

Initial Conditions: A FIRE IN UNIT 1 HAS RESULTED IN A CONTROL ROOM EVACUATION AND IMPLEMENTATION OF THE EMERGENCY REMOTE SHUTDOWN PROCEDURE. THE CONTROL ROOM CREW HAS ACTIVATED THE HOT SHUTDOWN PANEL. UNIT 1 IS PREPARING TO COOL DOWN TO MODE 4. CONTROL AIR IS AVAILABLE.

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