JPM EXAM AS PRESENTED TO AND REVIEWED BY FACILITY

EXAM REVIEW COMMENT SHEETS INCLUDED.

D.C. Cook JPM Comments

(Note: Includes changes, corrections, and recommendations mutually identified and agreed upon by both facility and NRC.)

JPM	Comment
General Comment	• There were various editorial changes throughout the JPMs
A.1.a	• Initial Conditions: Changed "Predicted Xenon" to "Optional Xenon Correction" • Validation time: 40 min
A.1.b	• Initial Conditions: Changed "Mode 2" to "Mode 1 at 8 –10% power." • Removed log names from references • Initiating Cue: Changed "appropriate" to "RO/US" • Added the "Flux & Rod Control" panels to the walkdown list • Step 2: Added "Standing Orders, Control Room Narrative Logs, and Abnormal Log" • Step 3: Changed "RHR Cross Connect Valves" to "SI Cross Connect Valves" to make it a 1 hour T.S. 3.5.2 entry condition • Added T.S. 3.0.3 for RWST valves tagged shut • Validation time: 25 min
A.2	• Initiating Cue: Changed "28-36" to "28-38" • Step 3: Changed "37.0 Containment Air Temp 2-ETR-16 Pt. 6 Failed Low" to "38.0 Rad Monitor Channel Steam Generator PORV 2-MRA-2702 Failed Low" and changed: "2-VRS-1201" to"2-VRS-2201" • Validation time: 20 min
RO-A.3	• Task Standard: Changed: "prepare damp waste" to "prepare to gather damp waste" • Initiating Cue: Added "Using RWP 010509-02" • Step 1: Changed "000509-02 to "010509-02" • Validation time: 20 min
SRO-A.3	• Original JPM, "Containment Purge Review," as written could not be performed with the recently revised procedure. JPM was no longer valid. New JPM, "Monitor Tank Release to CW - Review," was written during prep-week with facility input and review verification. New JPM validation time was 15 min.
RO-A.4	• Required Material: Changed "references to match the procedure number changes per the new revision of the EPP changes • Initiating Cue: Added "per step 3.2.3 and 3.2.6." • Added "to the local, state, and NRC" after "off-site notifications" • Validation time: 8 min
SRO-A.4	• Changed "LOCS occurred 15 minutes ago" to "LOCA has occurred" • Task Standard: Added "Document classification & PAR on 'Required Information' section of Accident Notification form" • Step 2: Changed "1.1P" to "2.1L" and "3.2L" to "3.2P or 3.2L" • Step 5: Removed "and shelter 5 to 10 miles for sector E, F, and G (or areas 1, 2,and 3) • Validation time: 15 min

D.C. Cook JPM Comments

JPM	Comments
B.1.a	• Step 2: Added "or checks lights and panels energized" • Made step 3, 4, and 5 non-critical (these were "verify" steps) • Step 6: separate into four steps for starting of the second recombiner • Step 9: Added: "NOTE: IF THE APPLICANT INFORMS YOU THAT THEY CANNOT RAISE 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." • Step 9 Added: "NOTE: THE SIMULATOR CANNOT SET THIS MALFUNCTION, THEREFORE THE EXAMINER MUST GIVE THE CUE TO THE APPLICANT" • Delete steps 15, 16, 17 due to termination cue given when 2 hour wait time initiated • Validation time: 15 min
B.1.b	• Initiating cue: changed step in effect to 18, which corresponds to correct procedure step • Step 8; add "in the next train" • Validation time: 15 min
B.1.c	• Made Steps 10,11,13,14,15,&17 critical steps • Added a step between 26 and 27 – "Adjust load between 5 and 25 MW" • Validation time: 15 min
B.1.d	• Initial Conditions: Added "all of the prerequisites are met and required personnel are ready for the start of the SI pump"; also changed 12% to 100% power • Step 5: Added "Note: If the applicant starts to review the steps for starting the pump, remind him that all prerequisites are completed and the SI pump is ready to start" • Step 7: Made step critical • Step 11: Added "Calls Aux Operator" • Step 15: Added "Note: ensure 2-IRV-60 Closed" • Validation time: 15 min
B.1.e	• Added a step between 4 and 5: "Verify breaker T21D9 Closed" • Step 5: Added "Verify 0.0 amps on 21PHC" • Deleted Old Step 8, unecessary. New Step 8 added as critical step to return pressurizer heaters to desired position • Initial conditions changed from 12% to 100% power • Required material changed applicable procedure step 4.1 to step 4.2 • Step 6: changed GRC2 to GRC 3 • Step 9: Changed "21 Amps" to "25 Amps" • Validation time: 10 min
B.1.f	• Step 2.3 is critical step • Step 2: added required systems simulator parameters flow rate 83000 CFM and pressure reading of 0.25 psi • Step 3: changed "are in" to "placed in" • Step 4: removed valve failures on 2-VCR-107 and 207 • Step 5: deleted, not necessary • Step 7: added faulted condition on 2VRS-2505 fails upscale • Step 9: value for flowrate was changed to low set point

JPM	Comments
	• Added Step 17 - "Place RMS block switch to block" • Validation time: 15 min
B.1.g	• Step 3: added the note "2403 will be external fail due to containment Phase B • Validation time: 10 min
B.2.a	• Initial condition: removed second sentence for clarification • Initiating cue: removed "Start Pump Locally", not capable to shut locally - no procedure • Step 4: not critical, added info to call control room to open valve 2-WMO-744, also added cue to direct opening the valve locally • Step 5: made critical, changed from start the pump to opening of the valve 2-WMO-744 locally with info on how to open valve locally • Validation time: 20 min
B.2.b	• Step 1: added cue, "Initial flow indication is 110 gpm. Flow indication decreases to 75 gpm as the valve is being throttled." • Step 4: change 85 gpm to 35 gpm and decreasing • Step 5: added info that step 4.1 of the procedure was completed • Step 7: Valves are in high rad area, allow applicants to describe their actions to manipulate these valves • Step 9: added cue to have applicant also watch the pump • Validation time: 20 min
B.2.c	• Initiating Cue: Added " You have an A-37 key for the Appendix 'R' Ladder" • This was a bank JPM.

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

Facility: D.C. Cook Task No: _____

Task Title: SHUTDOWN BORON CALC Job Performance Measure No: SRO/RO – A.1.a

K/A Reference: 004 K5.19 3.5/3.9

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance ____X____

Classroom ____X____ Simulator _____ _____ Plant _____

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 TRIPPED 1 HOUR AGO. RCS T_{AVE} IS 547^0 F AND PRESSURE IS 2250 PSIG AND STABLE. RCS BORON CONCENTRATION IS 620 PPM PER THE CHEMISTRY SAMPLE 30 MINUTES AGO. ROD H-8 AND M-4 ARE STUCK OUT OF THE CORE. THE PPC IS UNAVAILABLE, REACTOR ENGINEERING REPORTS THAT CORE BURNUP IS 16.4 GWD/MTU AND USE FIGURE 8.2.C FOR ~~PREDICTED~~ XENON. P-11 & 12 BLOCKED LIGHTS ARE **NOT** LIT. THE UNIT IS TO REMAIN IN THE PRESENT CONDITION UNTIL AN ACTION PLAN IS DEVELOPED. CURRENT SHUTDOWN MARGIN REQUIREMENTS ARE MET.

CORRECTION.

OPTIONAL

Task Standard: DETERMINE REACTOR SHUTDOWN BORON IS NOT MET AND THAT NORMAL BORATION IS REQUIRED

Required Materials: UNIT 2 TECH DATA BOOK, 02-OHP.4021.001.012 ATTACHMENT 1

General References: 02-OHP.4021.001.012

Initiating Cue: YOU ARE TO PERFORM A MANUAL SHUTDOWN BORON CALCULATION FOR THE PLANT CONDITIONS 30 HOURS AFTER SHUTDOWN USING 02-OHP.4021.001.012 ATTACHMENT 1.

Time Critical Task: YES (NO)

Validation Time: 40 min

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

Performance step: 1 SAT/UNSAT

4.1 ENTER CYCLE DATA

Standard:

ENTER CYCLE 12 USING THE TECHNICAL DATA BOOK (TDB) AND THE DATE AND TIME OF THE SHUTDOWN

Comment:

Performance step 2 SAT/UNSAT

4.2 ENTER SHUTDOWN MARGIN EXPIRATION

Standard:

ENTER THE DATE AND TIME THAT FOLLOWS THE UNIT SHUTDOWN BY 30 DAYS

CUE: OPTIONAL XENON IS TO BE USED

Comment:

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

4.3 ENTER CORE BURNUP DATA

Standard:

ENTER THE DATA PROVIDED BY THE REACTOR ENGINEER

Comment:

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

4.4 ENTER PLANT CONDITIONS FOR WHICH SHUTDOWN MARGIN IS BEING CALCULATED

Standard:

ENTER RCS TEMPERATURE AND
CHECK THE BLOCKS FOR P-11AND/OR P-12 SAFEGUARDS BLOCKED AS 'NO' AND UNIT IN MODE 4 OR 5 (BORON PENALTY) AS 'NO'

Comment:

Performance step: 5 SAT/UNSAT

MARK 4.5 AS N/A

Standard:

SECTION 4.5 IS MARKED N/A

Comment:

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

4.6 CALCULATE UNCORRECTED MINIMUM BORON CONCENTRATION

Standard:

USE THE $T_{AVE} > 541^{o}$ F CURVE
ENTER THE UNCORRECTED MINIMUM BORON CONCENTRATION PPM
RANGE IS 670 – 700 PPM

Comment:

Performance step: 7 SAT/UNSAT

4.7 DETERMINE THE CORRECTION FOR STUCK OUT RODS

Standard:

DETERMINE THE WORTH OF A SINGLE ROD STRUCK OUT FROM TDB FIGURE 1.3b AND MULTIPLY BY 2 FOR TOTAL PCM
RANGE IS 1240 $\pm$ 5 PPM FOR EACH ROD OR 2480 $\pm$ 10 PPM FOR 2 RODS

Comment:

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

4.8 ENTER CORRECTED XENON CORRECTION DATA

Standard:

ENTER THE XENON REACTIVITY VALUE FOR THE 30TH HOUR FOLLOWING THE UNIT SHUTDOWN

CUE: REACTOR ENGINEER SAID TO USE FIGURE 8.2.C FOR THE PREDICTIED XENON

Comment:

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

4.9.1 CALCULATE TOTAL CORRECTION FOR THE MINIMUM BORON CORRECTION

Standard:

ADD THE TOTAL STUCK OUT ROD WORTH AND XENON REACTIVITY TO GET THE TOTAL REACTIVITY CORRECTION

Comment:

Performance step: 10 SAT/UNSAT

4.9.2 DETERMINE THE BORON WORTH

Standard:

USE THE TDB FIGURE WITH THE NEAREST LOWER TEMPERATURE TO OBTAIN THE BORON WORTH. RANGE IS –10.3 ± .05 PCM/PPM

CUE: THE RECTOR ENGINEER GAVE THE GWD/MTU IN THE INITIAL CONDITIONS.

NOTE: THE CANDIDATE IS TO USE THE EOC CURVE ON FIGURE 4.1.b

Comment:

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

4.9.3 CALCULATE THE DELTA BORON WORTH

Standard:

DIVIDE THE COMBINED REACTIVITY BY BORON WORTH

Comment:

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

4.9.4 CALCULATE THE ADJUSTED BORON CONCENTRATION

Standard:

SUBTRACT THE DELTA BORON FROM THE UNCORRECTED MINIMUM BORON CONCENTRATION

Comment:

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

4.9.5 DETERMINE THE ADJUSTED BORON WORTH

Standard:

USE THE TDB FIGURE WITH THE NEAREST HIGHER TEMPERATURE TO CALCULATE THE ADJUSTED BORON WORTH. RANGE IS –9.9 ± .05 PCM/PPM

Comment:

Performance step: 14 SAT/UNSAT

4.9.6 CALCULATE THE CORRECTION FOR MINIMUM BORON

Standard:

DIVIDE COMBINED REACTIVITY BY THE ADJUSTED BORON WORTH

Comment:

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

4.9.7 CALCULATE THE CORRECTED MINIMUM BORON CONCENTRATION

Standard:

SUBTRACT THE CORRECTION FOR MINIMUM BORON FROM THE UNCORRECTED MINIMUM BORON CONCENTRATION

Comment:

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

4.10 DETERMINE THE MINIMUM RCS BORON REQUIRED

Standard:

ENTER THE MINIMUM RCS BORON CONCENTRATION REQUIRED

Comment:

Performance step: 17 SAT/UNSAT

4.11 RECORD THE CURRENT RCS BORON CONCENTRATION

Standard:

RECORD THE CURRENT RCS BORON CONCENTRATION AS DETERMINED FROM CHEMISTRY SAMPLING AND THE SAMPLE DATE AND TIME

Comment:

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

4.12 CALCULATE THE BORATION REQUIREMENT

Standard:

SUBTRACT THE RCS BORON CONCENTRATION FROM THE MINIMUM RCS BORON REQUIRED AND DETERMINE THAT A NORMAL BORATION IS REQUIRED BECAUSE CURRENT SDM IS MET.

Comment:

Performance step: 19 SAT/UNSAT

COMPLETE THE SIGNATURE AND DATE

Standard:

SIGN CALCULATED BY AND ENTER THE DATE AND TIME OF THE CALCULATION

Comment:

Terminating cue: THE JPM IS COMPLETE WHEN THE CANDIDATE TURNS IN THE PAPER

VERIFICATION OF COMPLETION

Job Performance Measure No. SRO/RO – A.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: _____ _____

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

Facility: D.C. Cook Task No: _____

Task Title: Shift Turnover Job Performance Measure No: SRO/RO–A.1.b

K/A Reference: G.2.1.3 3.0/3.4

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ _____ Actual Performance ___X_____

Classroom _____ Simulator _____X_____ Plant ___ ___

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: YOU ARE THE RELIEVING UNIT SRO/RO. YOU ARE RELIEVING THE WATCH YOU WERE ON12 HOURS AGO. UNIT 2 IS IN MODE 2.- 9-10% power
VERIFY STRIP CHARTS SPACE
Task Standard: PERFORM A SHIFT TURNOVER REVIEW ALL APPROPRIATE DOCUMENTS AND IDENTIFY 4 OF 5 ERRORS ON THE CONTROL BOARD

Required Materials: OHI-4012, DATA SHEET 7 AND 8, ~~CONTROL ROOM LOGS, BLOCKED ALARM LOG, OPEN ITEM LOG, TEMP MOD LOG, UNIT SUPERVISOR TURNOVER CHECKLIST, INCOMPLETE STATUS REPORTS, PLAN OF THE DAY, SHIFTLY RISK ASSESSMENT/GOVERNING PROCEDURE~~

General References: OHI-4012

Initiating Cue: PERFORM A COMPLETE SHIFT TURNOVER OF YOUR ~~APPROPRIATE~~ RO (US) WATCH STATION. YOU WILL BE GIVEN 15 MINUTES FOR THE WALKDOWN THE CVCS, PZR, RHR, SI, CTS, AND SW PANELS. WHEN YOU ARE FINISHED WE WILL DISCUSS ANY DISCREPANCIES OR PROBLEMS NOTED. YOU ARE RELIEVING THE WATCH YOU WERE ON12 HOURS AGO. UNIT 2 IS IN MODE 2 at 9-10% power.

FLUX & ROD CONTROL, RCP, PANELS

Time Critical Task: YES (NO)

Validation Time: 25 minutes

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

Performance step: 1 SAT/UNSAT

ENTER OHI-4-12

Standard:

LOCATE AND OPEN OHI-4012 TO THE CORRECT DATA SHEET (7 FOR SRO) (8 FOR RO)

CUE: HAND OHI-4012 DATA SHEET TO THE APPLICANT

Comment:

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

DISCUSS ~~REVIEW~~ **THE APPLICABLE UNIT LOGS** THAT WOULD BE REVIEWED **SINCE THE LAST WATCH STOOD** STEP 4.7.

Standard:

US RO ~~STANDING~~ ORDERS
US RO CONTROL ROOM NARRATIVE LOGS
US RO **CONTROL ROOM LOGS, (LAST 12 HOURS AGO)**
RO **BLOCKED ALARM LOG,**
RO **OPEN ITEM LOG,**
RO **TEMP MOD LOG,**
RO **UNIT SUPERVISOR TURNOVER CHECKLIST,**
RO **PLAN OF THE DAY,**
RO **INCOMPLETE STATUS REPORTS (RO ONLY)**
— **COOK PLANT DAILY STATUS REPORTS (SRO ONLY)**
— **SHIFTLY RISK ASSESSMENT/GOVERNING PROCEDURE (SRO ONLY)**
— ABNORMAL POSITION LOG

Comment:

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

TOUR THE MAIN CONTROL ROOM/WALKDOWN THE BOARDS

Standard:

CONTROL ROOM BOARDS WALKDOWN THE CVCS, PZR, RHR, SI, CTS, AND SW PANELS AND 4 OF 5 ERRORS FOUND. RO'S WILL ADVISE OF TECH SPECS, SRO'S WILL EVALUATE TECH SPECS

THE FOLLOWING ITEMS WILL BE WRONG:

ACCUMULATOR #3 PRESSURE 500 PSIG – 1 HOUR T.S. 3.5.1, RESTORE PRESSURE ≥ 585 PSIG

CONTROL ROD~~S~~ 18 STEPS OUT OF ALIGNMENT FOR BANK A1 – 1 HOUR T.S. 3.1.3 FIGURE 3.1-4, SDM VERIFY > 12 STEPS OUT 275

SI
~~RHR~~ CROSS CONNECT VALVE IS ~~SHUT~~ OPEN (IMO-~~320~~) – ~~1~~ HOUR~~S~~ TO ~~MODE 3~~, T.S. ~~3.0.3~~ 3.5.2
SHUT TO REDUCE POWER

RWST LEVEL 70% - 1 HOUR T.S. 3.5.5 VERIFY WATER SOURCE, RWST ≥ 89%

RWST VALVES TO CCPS (IMO-910 & 911) TAGGED SHUT – 1 HOUR T.S. 3.1.2.2, FLOW PATH FROM RWST TO CCP TO RCS or 3.0.3

NOTE: THE SAFETY SIGNIFICANCE AND TECH SPEC ISSUE OF THE PROBLEMS MUST BE DISCUSSED BY THE RO AND ANALYZED BY THE SRO TO RECEIVE FULL CREDIT FOR EACH FAULT THAT IS IDENTIFIED, 4 OUT OF 5 FAULTS MUST BE FOUND TO PASS

Comment:

Performance step: 4

COMPLETE TURNOVER

Standard:

REFUSE TO TAKE THE TURNOVER UNTIL ITEMS ARE FIXED OR ADDRESSED

Comment:

Terminating cue:

VERIFICATION OF COMPLETION

Job Performance Measure No. SRO/RO–A.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: _____ _____

UNIT: 1 2 SHIFT: A B C D E TIME: 0630 – 18301830 - 0630 DATE: _____

ON-COMING US: _____

CONTROL ROOM PANEL REVIEW (✓):

- ❑ Control Room Switches
- ❑ Annunciator and Status Lights
- ❑ Instrumentation
- ❑ General Panel Appearance

REVIEW THE FOLLOWING (✓):

- ❑ Control Room Log
- ❑ Blocked Alarm Log
- ❑ Abnormal Position Log
- ❑ Open Items Log
- ❑ Temp Mod Log
- ❑ Unit Supervisor Turnover Status
- ❑ Cook Plant Daily Status Reports
- ❑ Plan of the Day
- ❑ Shiftly Risk Assessment/Governing Procedure

NOTES:

_____
_____
_____
_____
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_____
_____

UNIT: 1 2 SHIFT: A B C D E TIME: 0630-1830 1830-0630 DATE: _____

ON-COMING RO/BOP (circle one): _____

ON-COMING OPERATOR REVIEW THE FOLLOWING (✓):

- ❑ Control Room Log
- ❑ Blocked Alarm Log
- ❑ Open Items Log
- ❑ Temp Mod Log
- ❑ Unit Supervisor Turnover Checklist
- ❑ Incomplete Status Reports
- ❑ Plan of the Day

Briefed by off-going RO/BOP (circle one): ❑

CONTROL ROOM PANEL REVIEW (✓):

- ❑ Control Room Switches
- ❑ Annunciator and Status Lights
- ❑ Instrumentation
- ❑ General Panel Appearance

NOTES:

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

Facility: D.C. Cook Task No: _____

Task Title: Surveillance Checks Job Performance Measure No: SRO/RO–A.2

K/A Reference: G.2.1.31 4.2/3.9

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance X

Classroom _____ Simulator X Plant _____

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 AT 100% POWER ALL EQUIPMENT IS FUNCTIONING PROPERLY ON MID-SHIFT

Task Standard: 100% OF THE READING CORRECT AND RECORD THE INFORMATION IN THE CORRECT COLUMN.

Required Materials: 02-OHP.4030.STP.030 DATA SHEET 1 PAGES 11 - 16

General References: 02-OHP.4030.STP.030

Initiating Cue: YOU ARE TO COMPLETE STEPS 28 – ~~36~~ 58 ON DATA SHEET 1 OF THE SHIFT SURVEILLANCE CHECK AND REPORT ANY DISCREPANCIES.

Time Critical Task: YES (NO)

Validation Time: 20 MINUTES

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

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

OBTAIN A COPY OF 02-OHP.4030.STP.030

Standard:

OBTAIN A COPY OF 02-OHP.4030.030 AND FIND DATA SHEET 1

CUE: PROVIDE A COPY OF DATA SHEET 1 WHEN THE CANDIDATE GETS THE PROPER PROCEDURE

Comment:

Performance step 2 SAT/UNSAT

VERIFY THAT THE DATA SHEET IS THE LATEST REVISION

Standard:

CHECK CONTROL COPY TO VERIFY REVISION IS THE LATEST

Comment:

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

RECORD THE INFORMATION

Standard:

RECORD THE CORRECT INFORMATION IN THE PROPER COLUMN ON THE DATA SHEET
NOTE THE FOLLOWING READINGSOUT OF ACCEPTANCE CRITERION:
31.1 CST LEVEL 2-CLI-113 39% > US & ANOTHER OPERATOR WILL INVESTIGATE —
31.2 CST LEVEL 2-CLR-111 39%
33.0 4kV VITAL BUS T-21C ~~26~~ 0 VOLTS — US CALL MAINTENANCE - WILL BE OUT FOR SEVERAL HOURS —
~~**37.0 CONTAINMENT AIR TEMP 2-ETR-16 Pt. 6 FAILED LOW**~~
38.0 RAD MONITOR CHANNEL CONTAINMENT AREA LOW RANGE 2-VRS-1201 FAILED LOW
RAD MONITOR CHANNEL ~~CONTAINMENT~~

Comment: STEAM GENERATOR PORV 2-MRA-2702 FAILED LOW

Performance step: 4 SAT/UNSAT

REPORT COMPLETION OF TASK

Standard:

REPORT COMPLETION OF TASK AND ANY INFORMATION THAT IS NOT WITHIN THE ACCEPTANCE CRITERIA TO THE SHIFT MANAGER

Comment:

Terminating cue:

VERIFICATION OF COMPLETION

Job Performance Measure No. SRO/RO – A.2

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: _____ _____

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

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

Task Title: Review RWP Job Performance Measure No: RO – A.3

K/A Reference: G.2.3.10 2.9/3.3

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance X

Classroom _____ Simulator Anti-C Training Room Plant _____

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 AT 100% POWER.

Task Standard: CORRECTLY PREPARE TO ~~THE~~ GATHER DAMP WASTE MATERIAL FROM THE CONTAMINATED AREA

Required Materials: RWP 000509-01

General References: PMP-6010.RPP.066

Initiating Cue: YOU ARE DIRECTED TO GATHER DAMP WASTE FOR PROCESSING FROM THE CONTAMINATED AREA. USING RWP 000509-02

Note: THE JPM WILL BE SETUP WITH THE ASSOCIATED RWP AND MATERIAL IN THE RP TRAINING AREA

Time Critical Task: YES/(NO)

Validation Time: 20 min

NOTE: IF THE DOSEMETERY IS NOT AUTOMATED MAKE SURE THAT THERE ARE DIFFERENT DOSEMETERS AVAILABLE.

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

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

OK ~~**DETERMINE WHICH RWP IS REQUIRED TO PERFORM THE JOB AND WHICH PATH IS ALARA TO RETRIEVE THE MATERIAL**~~

Standard: 010509-02 from RWP 010509

~~**GETS RWP 000509-02 FROM RWP 000509 AND THE SURVEY MAP**~~

~~CUE: HAND THE OPERATOR THE RWP AND SURVEY MAP WHEN THE CORRECT ONE IS LOCATED~~

Comment:

Performance step: 2 SAT/UNSAT

DETERMINE THAT THE AREA TO BE ENTERED IS A CONTAMINATED AREA

Standard:

AFTER REVIEW OF THE RWP AND THE SURVEY MAP THE OPERATOR DETERMINES THAT THE AREA IS A SURFACE CONTAMINATED AREA

Comment:

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

BEGIN GATHERING ANTI-C

Standard:

BEGIN GATHERING ANTI-C FOR DRESS CODE 'M' AND SPECIAL INSTRUCTIONS 2 'W/DOUBLE GLOVES'

Comment:

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

GATHER WASTE COLLECTION BAGS

Standard:

GATHER WASTE COLLECTION BAGS THAT WILL CONTAIN THE DAMP MATERIAL

CUE: DETERMINE WHAT EQUIPMENT IS REQUIRED TO PERFORM THE JOB

Comment:

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

GATHER DOSIMETRY AND THE SETPOINTS

Standard:

OPERATOR DETERMINES THAT AN ALARMING DOSIMETER AND TLD ARE REQUIRED AND THAT THE DOSE ALARM IS SET AT 10 MREM AND DOSE RATE IS SET AT 50 MREM/HR

CUE: DETERMINE WHAT DOSIMETRY IS REQUIRED TO PERFORM THE JOB AND THE SETPOINTS

Comment:

Terminating cue:

VERIFICATION OF COMPLETION

Job Performance Measure No. RO – A.3

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: _____ _____

Cook Nuclear Plant
Radiation Work Permit

000509

RWP Number	Rev. Number	Activation Date	Expiration Date
000509	02	~~06-01-2000~~	~~01-01-2001~~

Type / Catagory	Status	Termination Date
ROUTINE	ACTIVE	

Title	Equipment Number
UNIT 1 AND UNIT 2 ENVIRONMENTAL ROUTINE ACTIVITIES	RADIOACTIVE WASTE

Job Description
ENVIRONMENTAL ROUTINE ACTIVITIES IN THE AUX BLDG, AND COMMON AREA PLANT REASTRICTED AREAS.

Building	Elevation	Area
MULTI	MULTI	MULTI

Sectors
100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 117 118 119 121 122 123 124 127 128 131 132 133 134 139 140 142 144 146 147 149 152 153 155 157 158 159 161 162 167 169 170 171 172 173 174 175 176 177 180 182 187 189 190 191 192 194 198

Briefing
☐ Pre-Job ☐ Shift ☐ Check In
☐ Access List ☐ Continuous Coverage ☐ PSE

Dose Budget Type
Routine

Number of Tasks	Estimated Totals	Alarm Settings (in mrem)
3	REM : 2.000 Hours : 13700	Dose : ~~10~~ 25 Dose Rate : ~~50~~ 100

RP Technician Approval / Date	ALARA Reviewed By / Date
JUZA, OLGA 06-01-2000	GRIFFIN, SCOTT 06-01-2000

RP Supervisor Approval / Date
GRIFFIN, SCOTT 06-01-2000

Special Requirements
1. ENTRIES INTO A LOCKED HIGH RADIATION AREA OR ACTIVITIES WHICH REQUIRES GREATER THAN ONE PERSON-HOUR IN A HIGH CONTAMINATION AREA ARE PROHIBETED ON THIS RWP.
RWP.

FOR INFORMATION ONLY

Printed 06-27-2000 8:01:57

Cook Nuclear Plant
Radiation Work Permit 000509-01

RWP Number	Task Number	Task Description
000509	01	TRASH/LAUNDRY SEGREGATION AND SHIPMENTS

Job Description

ENVIRONMENTAL ROUTINE ACTIVITIES IN THE AUX BLDG. AND COMMON AREA PLANT REASTRICTED AREAS.

Estimated Task Totals

REM : 0.900

Hours: 8500

RADIOLOGICAL REQUIREMENTS

Anti-C Requirements

-- DRESS CODE 'R' FOR REACHING INTO A CONTAMINATION AREA
-- DRESS CODE 'L' FOR ENTERING INTO A CONTAMINATION AREA
-- DRESS CODE 'M' FOR ENTERING INTO A CONGESTED CONTAMINATION AREA
-- DRESS CODE 'M2' FOR ENTRY INTO A HIGH CONTAMINATION AREA
-- SEE 'SPECIAL REQUIREMENTS'

Special Dosimetry Requirements

-- NONE REQUIRED

Miscellaneous Requirements

-- * SEE SPECIAL INSTRUCTIONS

Special Instructions

1. MODESTY GARMENTS & LEATHER WORK GLOVES ARE REQUIRED FOR GREEN TRASH SEGREGATION.

* FOR INFORMATION ONLY

Cook Nuclear Plant
Radiation Work Permit 000509-02

RWP Number	Task Number	Task Description
000509	02	WASTE HANDLING & PROCESSING

Job Description

ENVIRONMENTAL ROUTINE ACTIVITIES IN THE AUX BLDG, AND COMMON AREA PLANT REASTRICTED AREAS.

Estimated Task Totals

REM : 1.000
Hours: 5000

RADIOLOGICAL REQUIREMENTS

Anti-C Requirements

-- DRESS CODE 'R' FOR REACHING INTO A CONTAMINATION AREA
-- DRESS CODE 'L' FOR ENTERING INTO A CONTAMINATION AREA
-- DRESS CODE 'M' FOR ENTERING INTO A CONGESTED CONTAMINATION AREA
-- DRESS CODE 'M2' FOR ENTRY INTO A HIGH CONTAMINATION AREA
-- SEE 'SPECIAL REQUIREMENTS'

Special Dosimetry Requirements

-- NONE REQUIRED

Miscellaneous Requirements

-- * SEE SPECIAL INSTRUCTIONS

Special Instructions

1. COORDINATE WITH RP PRIOR TO UTILIZING HEPA VENTILATION DURING WASTE PROCESSING.

2. ~~LOW LEVEL WASTE PROCESSING IN HIGH CONTAMINATION AREA~~ WORKING DRESS CODE "W" REQUIRED WHEN ~~PROCESSING~~ IN STANDING WATER. DRESS CODE "M" W/DOUBLE GLOVES MAY BE USED IF MERELY HANDLING DAMP ITEMS THAT ARE NOT IN STANDING WATER.

3. ~~HIGH LEVEL WASTE PROCESSING IN CONTAMINATION AREA~~ PREJOB BRIEF REQUIRED. DRESS CODE "W2" FOR PROCESSING IN STANDING WATER. DRESS CODE "M" W/DOUBLE GLOVES MAY BE USED IF MERELY HANDLING DAMP ITEMS THAT ARE NOT IN STANDING WATER.

FOR INFORMATION ONLY

Cook Nuclear Plant
Radiation Work Permit 000509-03

RWP Number	Task Number	Task Description
000509	03	RADWASTE DEMINERALIZER OPERATION & MINOR MAINTENANCE.

Job Description

ENVIRONMENTAL ROUTINE ACTIVITIES IN THE AUX BLDG. AND COMMON AREA PLANT REASTRICTED AREAS.

Estimated Task Totals

REM : 0.100

Hours: 200

RADIOLOGICAL REQUIREMENTS

Anti-C Requirements

-- DRESS CODE 'R' FOR REACHING INTO A CONTAMINATION AREA
-- DRESS CODE 'L' FOR ENTERING INTO A CONTAMINATION AREA
-- DRESS CODE 'M' FOR ENTERING INTO A CONGESTED CONTAMINATION AREA
-- DRESS CODE 'M2' FOR ENTRY INTO A HIGH CONTAMINATION AREA
-- SEE 'SPECIAL REQUIREMENTS'

Special Dosimetry Requirements

-- NONE REQUIRED

Miscellaneous Requirements

-- * SEE SPECIAL INSTRUCTIONS

Special Instructions

1. RP COVERAGE & HOT PARTICLE SURVEILLANCE ARE REQUIRED FOR CONTAMINATED SYSTEM BREACHES. FOR SAMPLING IN CSCA'S, DRESS CODE "T2" IS REQUIRED.

2. CONTACT RP BEFORE & AFTER PROCESSING FROM THE CLEAN OR DIRTY HOLD-UP TANKS TO THE RWDS ROOM.

FOR INFORMATION ONLY

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

Facility: D.C. Cook Task No: _____

Task Title: Containment Purge Review Job Performance Measure No: SRO – A.3

K/A Reference: G.2.3.8 2.5/3.4

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance X

Classroom X Simulator _____ Plant _____

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: Both units are at 100% power. RP has requested that a containment purge in the cleanup mode be performed. Today's date is ??? , the time is ???

Task Standard: Review all paperwork prior to the purge commencing. Then disapprove the purge request.

Required Materials: 02-OHP.4021.028.005 ATTACHMENT 1, DATA SHEET 1-4, AND FIGURE 1 & 2.

General References: 02-OHP.4021.028.005

Initiating Cue: YOU ARE THE SHIFT MANAGER. RAD PROTECTION HANDED YOU A CONTAINMENT PURGE RELEASE PERMIT FOR APPROVAL. YOU ARE TO REVIEW THE PAPERWORK FOR CONTAINMENT PURGE OPERATIONS IN THE CLEANUP MODE AND AUTHORIZE THE EVOLUTION.
NOTE: Assume RP sample measurements and calculations are correct.

Time Critical Task: YES (NO)
Validation Time:

unable to perform with current revised procedure - Wrote new JPM for SRO-A.3 NB

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

Performance step: 1 SAT/UNSAT

ENTER 02-OHP.4021.028.005

Standard:

GET A COPY OF 02-OHP.4021.028.005, "OPERATION OF THE CONTAINMENT PURGE SYSTEM" AND ATTACHMENT 1, "OPERATING CONTAINMENT PURGE SYSTEM IN THE CLEANUP MODE."

CUE: HAND THE CANDIDATE A COPY OF ATTACHMENT 1.

Comment: All prerequisites are satisfied.

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

REVIEW STEP 4.1
CHECK THE FOLLOWING CONDITIONS:

- Purge System has been off for less than 24 hours.
- Containment Cleanup is complete per Radiation Protection.
- RMS Channels 2-VRA-2501, 2-VRS-2505 are Operable.

Standard:

DETERMINE THAT DATA SHEET 1 MUST BE COMPLETED BECAUSE IT HAS BEEN GREATER THAN 24 HOURS SINCE THE LAST PURGE WAS PERFORMED.

CUE: HAND THE CANDIDATE A COPY OF DATA SHEET 1, INCLUDING THE MIDAS GASEOUS RELEASE COMPUTER PRINTOUT DATA.

Comment:

Performance step: 3 SAT/UNSAT

VERIFY STEPS 4.2.1 and 4.2.2

Standard:

Sections 1.0, 2.0, and part of Section 3.0 of Data Sheet No.1 are completed as noted in the given Data Sheet No. 1.

Comment:

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

PERFORM THE SM/ASS REVIEW AND AUTHORIZATION PORTION OF SECTION 3 IN DATA SHEET NO.1. USING MIDAS COMPUTER DATA, REVIEW AND VERIFY THE RELEASE DOSE RATE VALUES ARE WITHIN ODCM LIMITS.

IDENTIFY THAT THE LIMITS ARE EXCEEDED. DISAPPROVE EVOLUTION

Standard:

CANDIDATE DETERMINES THAT ODCM LIMITS ARE EXCEEDED AND DISAPPROVES THE EVOLUTION.

CUE: ACKNOWLEDGE THE ODCM LIMIT PROBLEM.
INFORM THE APPLICANT, AS THE RADIATION PROTECTION PERSONNEL WHO SIGNED SECTION 3, THAT SIX (6) HOURS HAVE ELAPSED AND CORRECTIONS HAVE BEEN MADE TO THE MIDAS DATA. ASSURE HIM/HER THAT AN ERROR OCCURRED IN THE MIDAS DATA INPUT, AND BASED ON THE ORIGINAL RAD SAMPLE DATA FOR RAD RELEASE THE PURGE IS IN COMPLIANCE WITH THE ODCM AND IS APPROVED BY RAD PROTECTION. ORIGINAL TIME AND DATE OF THE RP APPROVAL IS STILL IN EFFECT.

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

COMPLETE THE REVIEW FOR SECTION 3, NOTING THAT RAD PROTECTION APPROVAL TIME AND DATE WITH THE ADDITIONAL SIX (6) HOURS IS IN EXCESS OF 24 HOURS SINCE RP APPROVAL.

Standard:

IDENTIFY THAT MORE THAN 24 HOURS HAVE ELAPSED SINCE RAD PROTECTION APPROVAL TO COMMENCE CONTAINMNET PURGE.

DISAPPROVE EVOLUTION

Comment:

Terminating cue:

VERIFICATION OF COMPLETION

Job Performance Measure No. SRO – A.3

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: _____ _____

I will make copies

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

Facility: D.C. Cook

Task No: _____

Task Title: EPlan Communications

Job Performance Measure No: RO - A.4

K/A Reference: G.2.4.43 2.8/3.5

Examinee: _____

NRC Examiner: _____

Facility Evaluator: _____

Date: _____

Method of testing:

Simulated Performance _____ Actual Performance ____X____

Classroom _____ Simulator _____X_____ Plant _____

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 GENERAL EMERGENCY HAS BEEN DECLARED FOR UNIT 2. YOU HAVE BEEN DIRECTED BY THE SHIFT MANAGER/SEC. TO MAKE ALL APPROPRIATE INITIAL OFFSITE NOTIFICATIONS

Task Standard: CORRECTLY COMMUNICATE NOTIFICATIONS WITHIN THE REQUIRED TIME

Required Materials: PMP 2080.EPP.107; DATA SHEET 1, ~~EXHIBIT A~~; DATA SHEET 2, ~~EXHIBIT B~~; DATA SHEET ~~4~~ 3, ~~EXHIBIT D~~

General References: PMP 2080.EPP.107

Initiating Cue: YOU ARE TO PERFORM THE INITIAL OFFSITE NOTIFICATION PER PMP 2080.EPP.107 PER STEP 3.2.3 AND 3.2.6 TO THE LOCAL, STATE AND NRC.

Time Critical Task: (YES)/NO

15 MINUTES TO COMPLETE NOTIFICATIONS TO BERRIEN COUNTY SHERIFF'S DEPARTMENT AND MICHIGAN STATE POLICE, 1 HOUR FOR THE NRC

Validation Time: 8 minutes

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

Performance step: 1 SAT/UNSAT

Enter PMP-2080.EPP.106

Standard: LOCATE AND OPEN PMP 2080.EPP.106

CUE: GIVE THE APPLICANT THE EPP.106 DATA SHEETS WITH SHEET 1 AND THE TOP SECTION OF SHEET 2 COMPLETED.

Comment:

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

CONTACT THE AGENCIES IAW STEP 3.4.1 (STATE AND LOCAL NOTIFICATION) & 3.4.2 (NRC NOTIFICATION)

Standard:

THE COUNTY AND STATE ARE CONTACTED WITHIN 15 MINUTES OF THE START OF THE JPM AND THE NRC IS NOTIFIED IMMEDIATELY AFTER THE LOCAL AGENCIES AND NOT LATER THAN 1 HOUR AFTER THE START OF THE JPM

CUE: ANSWER AS:
DAVE MARS FOR THE BERRIEN COUNTY SHERIFF
JOHN SMITH FOR THE MICHIGAN STATE POLICE
JOHN MacKINNON FOR THE NRC OPERATIONS CENTER

NOTE: IF THE CANDIDATE IS NOT MAKING PROGRESS WITH THE NRC NOTIFICATIONS TIME COMPRESS TO STATE THAT IT HAS BEEN 50 MINUTES.
Comment:

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

COMMUNICATE INFORMATION TO THE LOCAL AGENCIES AND THE NRC

Standard:

MESSAGE IS COMMUNICATED USING DATA SHEET 1, EXHIBIT A TO THE LOCAL AGENCIES AND DATA SHEET 4, EXHIBIT D TO THE NRC

Comment:

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

COMPLETE APPLICABLE SECTIONS OF DATA SHEET 2, EXHIBIT B

Standard:

COMPLETE THE 'CONTACT ESTABLISHED' COLUMN OF DATA SHEET 2, EXHIBIT B WITH INITIALS AND TIME AND THE PERSON CONTACTED AT EACH AGENCY

Comment:

Terminating cue:

VERIFICATION OF COMPLETION

Job Performance Measure No. RO – A.4

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: _____ _____

I WILL MAKE COPIES OF DATA SHEET

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

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

Task Title: Make Classification and PAR | Job Performance Measure No: SRO A.4

K/A Reference: G.2.4.44 2.1/4.0

Examinee: _____ | NRC Examiner: _____

Facility Evaluator: _____ | Date: _____

Method of testing:

Simulated Performance _____ Actual Performance _____

Classroom _____ Simulator _____ Plant _____

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 LARGE BREAK LOCA HAS OCCURRED ~~15 MINUTES AGO~~ ON UNIT 2. THE FOLLOWING CONDITIONS EXIST:

- CONTAINMENT PRESSURE IS 4.2 PSI
- CONTAINMENT AREA HIGH RAD MONITOR S ARE READING 6.4E4 R.HR
- CORE EXIT THERMOCOUPLES ARE READING 725 DEGREES AND INCREASING
- WINDS ARE STEADY AT 15 MPH AT 300 DEGREES
- A REPORT WAS RECEIVED AND CONFIRMED THAT CONTAINMENT PENETRATION NODE CPN-71 IS LEAKING
- SITE BOUNDARY DOSE IS 2.6 REM TEDE AND 4.8 REM THYDOID CDE
- 10 MILE DOSE IS 0.78 REM TEDE AND 2.7 REM THYROID
- ~~STABILITY CLASS~~

Task Standard: CLASSIFY THE EVENT AS A GENERAL EMERGENCY AND PROVIDE THE CORRECT PROTECTIVE ACTION RECOMMENDATION DOCUMENT CLASSIFICATION & PAR ON 'REQUIRED INFORMATION' SECTION OF ACCIDENT NOTIFICATION FORM

Required Materials: PMP.2080.EPP.101, EPP.105, and EPP.108

General References: PMP.2080

Initiating Cue: USING THE PLANT CONDITIONS, MAKE ANY NECESSARY E-PLAN RECOMMENDATIONS

Time Critical Task: (YES)/NO 15 MINUTES TO COMPLETE CLASSIFICATION ~~NOTIFICATIONS~~ FOR THE EMERGENCY

Validation Time: CLASSIFICATION AFTER ONSET OF THE EVENT. 15 MINUTES

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

SAT/UNSAT

Performance step: 1 **CRITICAL STEP**

OBTAIN PMP 2080.EPP.101 AND REFER TO ATTACHMENT 1, EMERGENCY CONDITION CATEGORIES

Standard:
CANDIDATE GETS A COPY OF THE PROCEDURE AND REFERS TO THE ATTACHMENT

CUE: GIVE A COPY OF THE ATTACHMENT TO THE CANDIDATE

Comment:

SAT/UNSAT

Performance step 2 **CRITICAL STEP**

COMPARE THE INITIAL CONDITIONS TO THE CATEGORIES

Standard:

DECLARE A GENERAL EMERGENCY BASED ON CATEGORIES ~~1.2L~~, 1.2L, 2.3L, AND 3.2P. or 3. 2, 1 L ~~or a 3~~

NOTE: THE DECLARATION IS BASED ON 2 L's AND 1 P. OR ON 3 L's IN COMBINATION ACCORDING TO EPP.101.

Comment:

SAT/UNSAT

Performance step: 3 **CRITICAL STEP**

OBTAIN A COPY OF PMP.2080.EPP.105, GENERAL EMERGENCY

Standard:

OBTAINS A COPY OF PMP.2080.EPP.105

CUE: HAND THE CANDIDATE A COPY OF EPP.105

Comment:

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

DETERMINE THE NEED TO PERFORM A DOSE ASSESSMENT USING EPP.108, INITIAL DOSE ASSESSMENT

Standard:

GET A COPY OF EPP.108 TO PERFORM A DOSE ASSESSMENT

CUE: HAND THE CANDIDATE A COPY OF THE DOSE ASSESSMENT PRINTOUT

Comment:

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

USE THE PRINTOUT AND EPP.105 EXHIBIT B

Standard:

RECOMMEND THE EVACUATION OF SECTIONS E, F, AND G (OR AREAS 1, 2, AND 3) TO 5 MILES ~~AND SHELTER FROM 5 TO 10 MILES FOR SECTOR E, F, AND G (OR AREAS 1, 2, AND 3).~~

Comment:

Terminating cue: JPM IS TERMINATED WHEN THE CANDIDATE HAND IN THE RECOMMENDATION

VERIFICATION OF COMPLETION

Job Performance Measure No. SRO A.4

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: _____ _____

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 _____

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 4%.

Task Standard: HYDROGEN RECOMBINER IS PLACED IN SERVICE PER PROCEDURE

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

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

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

Comment: IR checks lights + panel indication

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

verify

~~MANUAL~~ START CONTAINMENT RECIRCULATION FANS – CEQ FANS

Standard:

~~MANUAL~~ START CONTAINMENT RECIRCULATION FANS – 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 CRITICAL STEP SAT/UNSAT

Verify
MANUALLY OPEN DAMPERS

Standard:

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

Comment:

Performance step: 5 CRITICAL STEP SAT/UNSAT

Verify
MANUALLY OPEN CEQ FAN CCW VALVES

Standard:

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

Comment:

Separate into 4 steps

Performance step: 6 CRITICAL STEP SAT/UNSAT

START BOTH HYDROGEN RECOMBINERS

Standard:

START BOTH HYDROGEN RECOMBINERS BY PERFORMING THE FOLLOWING STEPS:
- step → VERIFY POWER ADJUSTER SET AT 000
- critical step → PLACE CONTROL SWITCH IN RUN (2-HR1 and 2-HR2)
- critical step → RAISE POWER ADJUSTER TO OBTAIN 5 kW
- Maintain power at 5 kW FOR 10 MINUTES (TIME COMPRESSION)
- critical step → RAISE POWER ADJUSTER TO OBTAIN 10 kW

Comment:

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

PLACE THE FIRST HYDROGEN RECOMBINER IN OPERATION

Standard:

PLACE THE FIRST HYDROGEN RECOMBINER IN OPERATION
- **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: 8 **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

Comment: HR1 ≈ 64 Kw for cont. pres of 1.25 psig

Performance step: 9 SAT/UNSAT

RAISE POWER ADJUSTER TO OBTAIN THE REQUIRED POWER DETERMINED IN STEP 8 ABOVE

Standard:

Cue:

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

Comment: Examiner must give cue to applicant (Simulator unable to set malfunction).

NOTE TO EXAMINER: IF APPLICANT INFORMS YOU THAT HE CANNOT raise kw to desired value, ASK him what he recommends. IF he still appears not to have diagnosed to start the second H2 recombiner, cue him that a H2 recombiner must be placed into service.

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

PERFORM ACTIONS TO START THE SECOND HYDROGEN RECOMBINER

Standard:

PERFORM ACTIONS TO START THE SECOND HYDROGEN RECOMBINER BY PERFORMING THE ABOVE STEPS 7, 8, AND 9

Comment:

Performance step: 11 **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: 12 **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: 13 **CRITICAL STEP** SAT/UNSAT

RAISE POWER ADJUSTER TO OBTAIN THE REQUIRED POWER

Standard:

RAISE POWER ADJUSTER TO OBTAIN THE REQUIRED POWER DETERMINED IN STEP 11 ABOVE, THE POWER WILL BE DEPENDENT ON CONTAINMENT PRESSURE

Comment:

Performance step: 14 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

Comment: Terminate JPM - waiting 2 hrs for H_2 recombiner in ops.

Performance step: 15 SAT/UNSAT

CHECKS CONTAINMENT HYDROGEN CONCENTRATION

Standard:

CHECKS CONTAINMENT HYDROGEN CONCENTRATION APPROXIMATELY 2.5%

CUE: CONTAINMENT HYDROGEN CONCENTRATION READS 2.5% AND CONTAINMENT PRESSURE IS ___ LOWER.

Comment:

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

DETERMINES THAT HYDROGEN CONCENTRATION IS GREATER THAN 0.5%

Standard:

DETERMINES THAT HYDROGEN CONCENTRATION IS GREATER THAN 0.5%, AND MUST AGAIN DETERMINE THE REQUIRED HYDROGEN RECOMBINER OUTPUT POWER BASED ON CONTAINMENT PRESSURE AND FIGURE 1

NOTE THE REQUIRED OUTPUT WILL DECREASE WITH CONTAINMENT PRESSURE DEPENDING ON THE TIME IN THE SCENARIO

Comment:

Performance step: 17 SAT/UNSAT

LOG HYDROGEN CONCENTRATION AND HYDROGEN RECOMBINER POWER USING ATTACHMENT A OF SUP.005.

Standard:

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: _____ _____

A. PURPOSE

This supplement provides actions to place the hydrogen recombiners in service following a loss of coolant accident.

B. SYMPTOMS AND ENTRY CONDITIONS

This supplement is entered from the following when operation of the hydrogen recombiners is desired:

1. E-1, Loss Of Reactor Or Secondary Coolant, Step 17.
2. ES-1.2, Post LOCA Cooldown And Depressurization, Step 34.
3. ECA-1.1, Loss Of Emergency Coolant Recirculation, Step 34.
4. ECA-3.1, SGTR With Loss Of Reactor Coolant - Subcooled Recovery Desired, Step 39.
5. ECA-3.2, SGTR With Loss Of Reactor Coolant - Saturated Recovery Desired, Step 34.
6. FR-C.1, Response To Inadequate Core Cooling, Step 11.
7. FR-I.3, Response To Voids In Reactor Vessel, Step 17.
8. OHP 4022.002.015, Mode 4 LOCA.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
1.	**Check Time Since Trip - GREATER THAN 6 HOURS**	Continue with procedure and step in effect.
2.	**Check Hydrogen Recombiner Power - AVAILABLE TO BOTH** • Hydrogen Recombiner 1 • Hydrogen Recombiner 2	Perform the following: a. Check 600V buses are energized: • Bus 21B • Bus 21C b. **IF NEITHER** 600V bus is energized, **THEN** perform the following: 1) Inform the Unit Supervisor that power is **NOT** available to the hydrogen recombiners. 2) **WHEN** power is available to at least one hydrogen recombiner, **THEN** return to Step 2. Continue with procedure and step in effect.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

3. Check Containment Recirculation Fans - OPERATING

a. CEQ fans - BOTH RUNNING

- 2-HV-CEQ-1
- 2-HV-CEQ-2

a. Manually start fan(s).

b. CEQ fan suction dampers for running fans - OPEN

- 2-VMO-101
- 2-VMO-102

b. Manually open damper(s).

c. CEQ fan CCW valves - OPEN

- 2-CCM-430
- 2-CCM-431
- 2-CCM-432
- 2-CCM-433

c. Manually open valve(s).

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

NOTE

A time delay exist between adjustment of hydrogen recombiner power and indicated power. Power should be adjusted slowly to prevent overshooting desired value.

4. Start Hydrogen Recombiners By Performing The Following:

a. Warm-up available hydrogen recombiners:

1) Verify power adjustor set at 000

2) Place control switch in RUN

3) Raise power adjustor to obtain 5 kw

4) Maintain power at 5 kw for 10 minutes

5) Raise power adjustor to obtain 10 kw

(Step 4 Continued On Next Page)

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

(Step 4 Continued From Previous Page)

b. Place **FIRST** hydrogen recombiner in operation:

1) Maintain power at 10 kw for 10 minutes

2) Raise power adjustor to obtain 20 kw

3) Maintain power at 20 kw for 5 minutes

4) Determine required hydrogen recombiner output power using Figure 1, Hydrogen Recombiner Power Setting (Page 9)

5) Raise power adjustor to obtain required power

c. Maintain **SECOND** hydrogen recombiner (if available) in standby with power at 10 kw

5. Log Hydrogen Concentration And Hydrogen Recombiner Power Using Attachment A, Hydrogen Recombiner Long-Term Monitoring (Page 10)

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
6.	**Check Time Since Last Adjustment - 2 hours**	**WHEN** 2 hours have elapsed, **THEN** go to Step 7. Continue with procedure and step in effect.
7.	**Check Containment Hydrogen Concentration - LESS THAN 3.5%**	**IF** hydrogen concentration is less than 4.0%, **THEN** place second hydrogen recombiner in service: a. **IF** second hydrogen recombiner is **NOT** in standby, **THEN** perform the following: 1) Verify power adjustor set at 000. 2) Place control switch in RUN 3) Raise power adjustor to obtain 5 kw. 4) Maintain power at 5 kw for 10 minutes. 5) Raise power adjustor to obtain 10 kw. 6) Maintain power at 10 kw for 10 minutes. b. Raise power adjustor to obtain 20 kw. c. Determine required hydrogen recombiner output power using Figure 1, Hydrogen Recombiner Power Setting (Page 9).

(Step 7 Continued On Next Page)

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

(Step 7 Continued From Previous Page)

d. **WHEN** 5 minutes have elapsed, **THEN** raise power adjustors to obtain required power.

IF hydrogen concentration is greater than 4.0%, **THEN** consult Plant Evaluation Team for additional recovery actions.

---

8. Check Containment Hydrogen Concentration - LESS THAN 0.5%

Perform the following:

a. Determine required hydrogen recombiner output power using Figure 1, Hydrogen Recombiner Power Setting (Page 9).

b. Adjust power for operating hydrogen recombiners to obtain required power.

c. Return to Step 5 (Page 5).

---

9. Stop Hydrogen Recombiners:

a. Set hydrogen recombiner power adjustors to 000

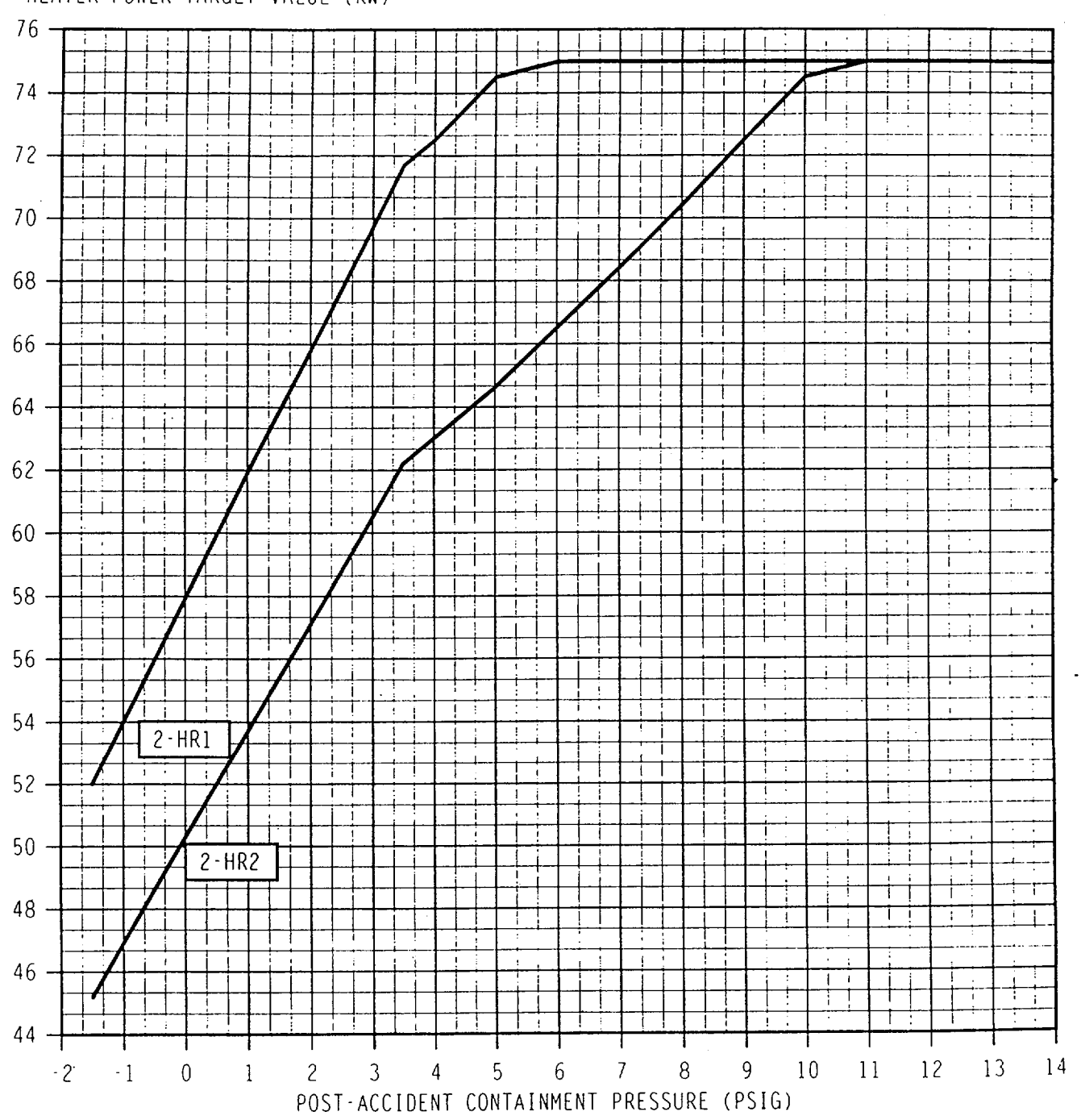
b. Place hydrogen recombiner control switches in STOP

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

10. Return To Procedure And Step In Effect

-END-

Figure 1
Hydrogen Recombiner Power Setting



-END OF FIGURE-

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 _____

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.

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

Initiating Cue: PER STEP ~~20~~ 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 min

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

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: _____ _____

A. PURPOSE

This procedure provides instructions for transferring the ECCS to hot leg recirculation.

B. SYMPTOMS AND ENTRY CONDITIONS

This procedure is entered from E-1, Loss Of Reactor Or Secondary Coolant, Step 19, when the specified time interval has elapsed.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
1.	**Align East RHR And North SI Flow Path For Hot Leg Recirculation:**	
	a. Verify at least one SI pump discharge crosstie valves closed: • 2-IMO-270 • 2-IMO-275	
	b. Stop north SI pump	
	c. Close 2-IMO-316, RHR and SI to RCS cold legs valve	
	d. Check 2-IMO-316 - FULL CLOSED	d. Do **NOT** continue with Step 1.e until 2-IMO-316 is full closed.
	e. Restore control power to 2-IMO-315, east RHR injection to hot legs valve	
	f. Open 2-IMO-315	f. **IF** 2-IMO-315 can **NOT** be opened, **THEN** open 2-IMO-316, RHR and SI to RCS cold legs valve.
	g. Remove control power from 2-IMO-315	
	h. Start north SI pump	

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
2.	**Align West RHR And South SI Flow Path For Hot Leg Recirculation:**	
	a. Verify at least one SI pump discharge crosstie valves closed: • 2-IMO-270 • 2-IMO-275	
	b. Stop south SI pump	
	c. Close 2-IMO-326, RHR and SI to RCS cold legs valve	
	d. Check 2-IMO-326 - FULL CLOSED	d. Do **NOT** continue with Step 2.e until 2-IMO-326 is full closed.
	e. Restore control power to 2-IMO-325, west RHR injection to hot legs valve	
	f. Open, 2-IMO-325	f. **IF** 2-IMO-325 can **NOT** be opened, **THEN** open 2-IMO-326, RHR and SI to RCS cold legs valve.
	g. Remove control power from 2-IMO-325	
	h. Start south SI pump	
3.	**Return To Procedure And Step In Effect**	

-END-

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 _____

Classroom _____ Simulator _____ _____ Plant _____

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.

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

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 min

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 SAT/UNSAT

Critical Step

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 SAT/UNSAT

Critical

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 SAT/UNSAT

(critical step)

NULL THE VOLTAGE SIGNAL

Standard:

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

Comment:

Performance step: 14 SAT/UNSAT

Critical Step

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 SAT/UNSAT

critical

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 SAT/UNSAT

critical

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 * may be an action req'd

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

Comment: (NOTE: 5 min timer to close in)

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:
step ADD - crew adjust load up to 5 to 25 MW

Performance step: 27 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:
adjust load ⇒ 5 to 25 MW

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: _____ _____

NOTE:	Precaution and Limitation 3.9 should be reviewed prior to synchronizing the Generator to the grid.

4.4 Synchronize the Generator to the Grid:

4.4.1 Verify with switchyard operator the following conditions have been met before starting synchronization:

- The A2 breaker Control Switch at switchyard has a RED target _____

-AND/OR-

- The A1 Control Switch at switchyard has a RED target, with the A1 breaker recloser in AUTO _____

4.4.2 Verify turbine speed at 1800 rpm. _____

4.4.3 Verify the following knife switches CLOSED and covers INSTALLED:

- Main Turbine Test Switch Group, Test Switches 1-8 _____

4.4.4 Place Gen Volt Reg Man/Auto Transfer switch in MAN. _____

4.4.5 Verify Gen Voltage Reg Manual Adjust MINIMUM POSITION white lamp LIT. _____

4.4.6 Verify Gen Voltage Reg Auto Adjust is set to minimum position. _____

4.4.7 Locally verify (at divider strip panel VRC-3) pilot exciter voltage AVAILABLE:

a. Voltage available at VRC-3. _____

b. **IF** voltage is NOT available at VRC-3, **THEN** perform Attachment No. 3, Pilot Excitation via Alternate Supply. _____

NOTE:	If Exciter Breaker reset is necessary, Maintenance Department should be contacted. The Exciter Field Breaker is located in Main Generator Voltage Regulation Cabinet #5. The reset is located on the south side of the breaker, under the closing solenoid. The reset is complete when the toggle lever engages the notch in the pawl (see drawing below).

4.4.8 Verify Exciter Field Breaker RESET. _____

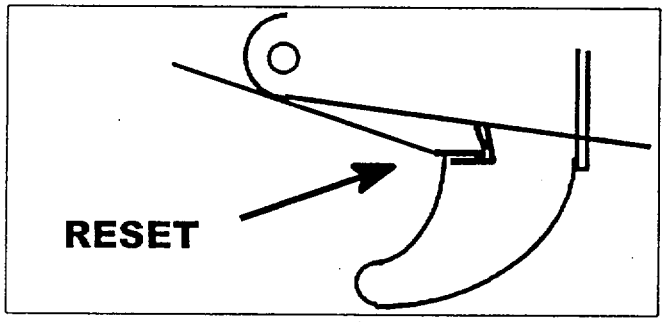


Figure 1: Exciter Field Breaker Reset

CAUTION:	If Generator Output Voltage is greater than 121 Volts as indicated on the Generator & Start Voltage Meter, the Generator Exciter Field control breaker shall be opened immediately.

NOTE:	Steps 4.4.9 through 4.4.13 require an operator to read the procedure and an operator with both hands empty to manipulate the controls.

4.4.9 Verify the following parameters:

- Main Turbine is at 1800 rpm _____
- Stator Cooling Water conductivity is less than or equal to 0.5 μmhos _____

4.4.10 Place Generator and Start Voltmeter in position other than OFF. _____

4.4.11 Place **AND** hold the Exciter Field Breaker Control Switch in CLOSE. _____

4.4.12 **IF** the Exciter Field Breaker closes, **THEN** perform the following:

a. Observe a voltage build-up to between 90 and 121 volts, as indicated on the START/GEN voltage meter. _____ C1, 3

b. Release the Exciter Field Breaker Control Switch. _____

c. Go To Step 4.4.14. _____

4.4.13 **IF** Exciter Field Breaker does NOT close, **THEN** perform the following:

a. Verify Power below P-7 setpoint:

- Power Range NIs $< 10\%$
- Turbine Impulse $< 10\%$
- P-7 active status light LIT

_____

CAUTION: If the Exciter Field Breaker is paused for too long a period in the NEUTRAL position while shifting to the TRIP position, a turbine trip will occur.

b. Return the Exciter Field Breaker Control Switch to TRIP. _____

c. **IF** a turbine trip occurs, **THEN** this procedure may be reinitiated when desired to reset the main turbine. _____

d. **IF** a reactor trip occurs, **THEN** refer to 02-OHP 4023.E-0, Reactor Trip or Safety Injection. _____

e. **WHEN** Exciter Field Breaker failure has been corrected, **THEN** return to Step 4.4. _____

4.4.14 Verify all three generator phases on the START/GEN voltage meter:

- Are energized _____
- Indicate ≤ 121 volts _____

NOTE: The scales on the Generator Start and Run (765 kV Bus) meters are not the same.

The potential transformer ratios for 765 kV Bus 1 are not the same as those for START/GEN and Bus 2. 765 kV Bus 1 will normally read 4% higher than Bus 2 or START/GEN.

4.4.15 Place Auto Voltage Regulator in service as follows:

a. Place Run/765 kV Bus Selector Switch to a Bus 2 position. _____

b. Check the voltages on all three phases to be approximately equal. _____

c. Raise generator voltage on the Generator Start Voltmeter using the Gen Voltage Reg Manual Adjust switch until Generator voltage is approximately equal to the system voltage indicated on the run (765 KV Bus) voltmeter. _____

d. Raise and lower the Manual Adjust switch to cycle generator voltage between 114 and 121 volts, as indicated on the START/GEN voltage meter. This checks positive voltage control by the manual voltage regulator. _____ C2

e. 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. _____

f. Place Gen Volt Reg Man/Auto Transfer switch in TEST. _____

- Check white MANUAL REGULATOR lamp remains LIT. _____

g. While observing the null meters, cycle the Gen Voltage Reg Auto (setpoint), to verify setpoint control of the automatic voltage regulator. _____

h. Null the voltage signal using the Gen Voltage Reg Auto (setpoint) Adjust Rheostat. _____

i. **WHEN** null meters are reading the same voltage, **THEN** place the Gen Volt Reg Man/Auto Transfer Switch in AUTO. _____

- Check white AUTO REGULATOR lamp LIT. _____
- Check white MANUAL REGULATOR lamp NOT LIT. _____
- Check that Generator voltage changes ≤ 3 volts in either direction, as indicated on the START/GEN voltage meter. _____

j. Place Gen Volt Reg Man/Auto Transfer Switch in TEST. _____

- Check white AUTO REGULATOR lamp remains LIT. _____

k. **IF** necessary, **THEN** null the voltage signal using the Gen Voltage Reg Manual Adjust switch. _____

4.4.16 **IF** synchronizing Bus 2 using the A2 breaker (preferred method), **THEN** perform the following:

a. Verify Megawatt Output Recorder 2-MW-1 ON. _____

b. Place Generator CB A2 Synch Selector Switch in MANUAL. _____

c. Adjust turbine speed using the speed and load adjuster until synchroscope is rotating slowly in the FAST direction. _____

d. Verify Bus Gen Line frequency recorder selector switch is set to GEN. _____

e. Verify Bus Gen Line frequency recorder indicates between 59.5 and 60.5 Hz. _____

f. 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) _____

g. Place the following Voltage Selector Switches in OFF:

- Generator & Start _____
- Run & 765 kV Bus _____

h. Adjust Generator Start Voltage 2-3 volts greater than Run (765 kV Bus) Voltage using Auto Voltage Regulator Adjust Rheostat. _____

NOTE: Steps 4.4.16.j, k and n may occur virtually simultaneously; three operators will be used.

Placing a Generator Output Breaker Sync Selector Switch in AUTO energizes a 5-minute timer that will lock out the breaker if parallel is not completed prior to timing out.

Synchronizing the main generator to the grid actuates Annunciator Panel #212, Drop #9 MAIN GENERATOR MOTORING. The alarm will clear as load is raised.

i. Place the Generator CB A2 Synch Selector switch in AUTO. _____

j. **WHEN** the synchroscope is at the 5 MINUTES TO 12 O'CLOCK position, **THEN** give Generator CB A2 Control Switch a RED target. _____

k. Verify white SYNCH PERMISSIVES MET lamp LIT. _____

l. **IF** A2 Breaker trips immediately after closing, **THEN** perform Attachment No. 5, Troubleshooting A1 or A2 Breaker. _____

m. **WHEN** A2 Breaker CLOSES, **THEN** place Generator CB A2 Synch Selector switch to OFF. _____

n. Raise generator load to 5-25 MW using the operating device at either the Turbine Panel or Generator Panel. _____

o. Give Generator CB A1 Control Switch a RED target (Breaker should close within approximately 30 seconds). _____

p. **IF** A1 Breaker trips immediately after closing, **THEN** perform Attachment No. 5, Troubleshooting A1 or A2 Breaker. _____

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 _____

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 ~~12%~~ 100% POWER AND THE MAIN GENERATOR IS BEING SYNCHRONIZED TO THE GRID. SI ACCUMULATOR 3 LEVEL IS 940 FT^3.

Task Standard: ACCUMULATOR HAS BEEN ADJUSTED TO 950 $FT^3 \pm 2$ 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

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 min

add info that all prerequisites and all required personnel are standing by & ready to start the SI pumps.

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:

procedure completed up to step 4.4.

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

add'l

Comment: NOTE: If applicant starts to reverse steps for starting pump - remind him that all prereqs, etc. are completed & SI is ready to be started.

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 SAT/UNSAT

Critical Step

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

Comment: (note - ensure 2-IEV60 closed)

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: _____ _____

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 _____

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 ~~12%~~ 100% POWER

Task Standard: MAINTAIN RCS PRESSURE ABOVE THE REACTOR TRIP SETPOINT

Required Materials: 02-OHP.4030.STP.040 STEP ~~4.1~~ 4.2 & PHC HTRS

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

Initiating Cue: YOU ARE TO PERFORM A PRESSURIZER HEATER CAPACITY TEST PER 02-OHP.4030.STP.040 ~~4.1~~ 4.2 PHC. THE PREVIOUS SHIFT HAD PROBLEMS WITH THE HEATERS ON 21PHC CURRENT METER AND MAINTENANCE HAS BEEN COMPLETED.

Time Critical Task: YES (NO)

Validation Time: 10 min

perform testing of PHC HTRS.

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

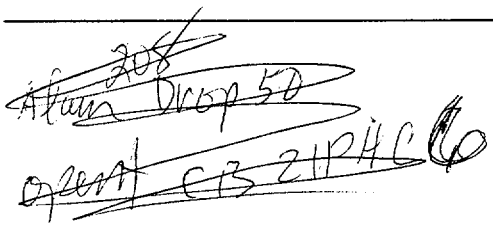
VERIFY THE SCR POWER CONTROL CB 21PHC6 CONDITION

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:
→ Step - verify BKR T21D9 closed

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

Verify 0.0 amps on 21PHC
RECORD 21PHC CURRENT

Standard:

RECORD 21PHC CURRENT WITH THE HEATERS OFF

Comment: records 0.0 amps

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

CLOSE THE PZR HEATERS

Standard:

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

Comment: 3

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

RECORD 21PHC CURRENT

Standard:

RECORD 21PHC CURRENT WITH THE HEATERS ON

Comment:

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

PLACE HEATERS IN TRIP

Standard:

PLACE THE FOLLOWING HEATERS IN TRIP:
- **HEATER GRC2 CB 21PHC3**
- **HEATER GRC2 CB 21PHC5**

Comment:

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

RECORD THE DIFFERENCE IN CURRENTS

Standard:

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

Comment: Terminate JPM

Performance step: 8 SAT/UNSAT

RETURN THE PZR HEATERS TO DESIRED POSITION

Standard:

RETURN THE PZR HEATERS TO DESIRED POSITION

Comment: Open BKRS 21PHC2

Terminating cue: 21PHC3 21PHC5

JOB 21PHC6

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: _____ _____

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 _____

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.

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 the 10 fail malfunction on 2-VRS-2201)

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 min

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 SAT/UNSAT

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

Standard: (Critical step)

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 (??? value) (checking monitor)
- Unit Vent Flow - (??? value) 2MR-54 or Rpmeter 83000 CFM
- Highest reading on 2-MR-37, Containment Low Range Pressure Recorder (??? value) (0.25 psig as indicated on)
- ~~Radiation monitor readings (??? value)~~

Comment:

Performance step: 3 SAT/UNSAT

Critical Step

~~Verify proper~~ TRIP/BLOCK switch positions per step 4.2.

Standard: No inoperable channels, all TRIP/BLOCK switches ~~are in~~ placed in NORMAL.

Comment:

Performance step: 4 SAT/UNSAT

Determine proper step to initiate containment pressure relief, proceeds to step 4.4.

Standard:

Attempts to Open containment isolation valves:
- 2-VCR-107, Cntmt Press Relief Valve IC
- 2-VCR-207, Cntmt Press Relief Valve OC

CUE: ~~2-VCR-107 AND 207 DO NOT OPEN~~ Both

Comment:

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

Determine that contingency step per step 4.3.2 must be performed.

Standard:

Contingency Step 4.3.2:
Reset Containment Ventilation Isolation with Unit Supervisor approval as follows:
- **verify NO valid signals for Containment Ventilation Isolation from the following (SI; Lower Containment Pressure High; RMS Channels 2101, 2201, 2301, 2401, 2305, 2405)**
- **reset Containment Ventilation Isolation (push reset buttons for Trains A and B)**

CUE: AS UNIT SUPERVISOR APPROVES THE ABOVE ACTIONS

Comment:

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

OPEN 2-VCR-107 AND 207

Standard:

Both valves open.

Comment:

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

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

Standard:

~~CUE: Use pressure Relief Fan~~

Fan starts.

Comment:

(Trigger for 2 VRS 2505 fails upscale) ORP ZDL101 CPR1

Performance step: 8 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: 9 **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 (??? value)**
- **Check annunciator response procedure - if any**
- **Call RP to recalculate and change the high alarm setpoint.**

downset point

Standard:

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

Comment:

CUE: → CONTINUE PURGE

~~SRO will Acknowledge~~

AD Plant...

Performance step: 10 **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: 11 **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: 12 **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: 13 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: 14 **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: 15 **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:

Left place RMS block switches to block

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: _____ _____

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 _____

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.

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

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

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

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: _____ _____

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

Facility: D.C. Cook Task No: _____

Task Title: ALIGN AFW TO ESW 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

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. ~~THE WMDAFW PUMP SWITCH IN THE CONTROL ROOM IS INOPERABLE. THE PUMP WILL HAVE TO BE STARTED LOCALLY.~~

Task Standard: ALIGN ESW TO AFW

Required Materials: 02-OHP.4022.055.003 STEP 13

General References: 02-OHP.4022.055.003

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

Time Critical Task: YES/(NO)

Validation Time: 20 min

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 **CRITICAL STEP** SAT/UNSAT

CALL CR TO OPEN VALVE

ALIGN THE WEST MDAFW PUMP

Standard:

OPEN 2-WMO-744, SUCTION FROM ESW POWER HAS BEEN REMOVED

CUE: 2WMO-744 SWITCH ~~DOES NOT OPERATE~~ THE VALVE FROM THE CR. OPEN IT LOCALLY THE VALVE

Comment:

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

~~**START THE PUMP**~~

Standard: HOLD LEVER COUNTERCLOCKWISE & TURN HAND WHEEL COUNTER CLOCKWISE

~~**THE WEST MDAFW PUMP IS STARTED LOCALLY**~~

Comment:

CALL

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: _____ _____

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__

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.

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

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.

CUE: HAND THE PROCEDURE TO THE CANDIDATE

Time Critical Task: YES (NO)

Validation Time: 20 min

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

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

THROTTLE 12-SF-129

Standard:
CUE: INITIAL FLOW INDICATION IS 110 GPM
THROTTLE 12-SFP-129 (SFP FILTER OUTLET TO SFP) TO LESS THAN 100 GPM

CUE: FLOW INDICATION IS 75 GPM decreasing

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 85 GPM

Comment:

35 and is decreasing
30 - 40 gpm what's inadequate flow
Value has to be 100

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. STEP 4.1 has been completed.

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:

12/125 in locked high rad area

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**

CUE: YOU ARE HP ~~Admin~~ HAVE THE CANDIDATE EXPLAIN THAT THE VALVES ARE 12-SF-127, 12-SF-128 ARE IN THE LOCKED HIGH RAD AREA.

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 THAT 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: _____ _____

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: _____

Method of testing:

Simulated Performance _____X_____ Actual Performance _____

Classroom _____ Simulator _____ _____ Plant __X__

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.

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

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

DO THIS JPM AS LAST JPM IN THE RCA

Time Critical Task: YES (NO)

Validation Time: 15 min

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

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Unit 1 ONLY – Next 2 pages

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-OHP 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-

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The Control Room is not accessible.

Simulates opening circuit breaker. ©

Reports completion of actions.

TERMINATE JPM – when report is made.

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: _____ _____