OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE

STATION:	SALEM
SYSTEM:	Containment Integrity (SF 5) - Containment Cooling System
TASK:	Perform 22 CFCU Surveillance Test IAW S2.OP-ST.CBV-0003
TASK NUMBER:	N0220130201
JPM NUMBER:	17-01 NRC Sim-f
ALTERNATE PATH:	[ ]
K/A NUMBER:	022 A1.04
IMPORTANCE FACTOR:	3.2 (RO) / 3.3 (SRO)
APPLICABILITY:	EO [ ] RO [X] STA [ ] SRO [X]
EVALUATION SETTING/METHOD:	Simulator / Perform
REFERENCES:	S2.OP-ST.CBV-0003, Rev 20 (checked 6-6-18)
TOOLS AND EQUIPMENT:	None
VALIDATED JPM COMPLETION TIME:	8 min
TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS:	N/A
Developed By:	R. Chan Rudolph Chan Instructor — **Date: 6-6-18**
Validated By:	Pierce / Bates See Rev History SME or Instructor — **Date: 4-10-18**
Approved By:	Mc Hugh Training Department — **Date: ~~8-8-18~~ 10/30/18** D.10/30/18
Approved By:	MYERS Operations Department — **Date: 10·23·18**

ACTUAL JPM COMPLETION TIME:	
ACTUAL TIME CRITICAL COMPLETION TIME:	
PERFORMED BY:	
GRADE:	[ ] SAT [ ] UNSAT
REASON, IF UNSATISFACTORY:	
EVALUATOR'S SIGNATURE:	**DATE:**

OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE

REVISION HISTORY

JPM NUMBER: 17-01 NRC Sim-f

Rev #	Date	Description	Validation Required
00	9-18-17	Added revision history and simulator setup pages. Editorial comments from IP 71111.11 FASA.	Yes
NA	6-6-18	JPM previously validated during LOR annual exam development (see 2018 Annual S-5 for signatures).	No

OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE

SIMULATOR SETUP INSTRUCTIONS

SYSTEM: Containment Integrity (SF 5) - Containment Cooling System

TASK: Perform 22 CFCU Surveillance Test IAW S2.OP-ST.CBV-0003

TASK NUMBER: N0220130201

SIMULATOR IC: **IC-235 [6-4-18, 08:49:25]**

MALFUNCTIONS:

1. Reset the simulator to the above IC #.
2. Verify the following events on the Summary/ET Trigger Lists:

MALF ID #	Description	Delay Time	Initial Value	Ramp Time	Trigger	Severity
01	VL0570, 22SW223 fails to position	00:00:15	N/A	N/A	ET-1	89

3. These malfunctions will simulate malfunction of 22SW223 valve when the CFCU is placed in LOW SPEED. The malfunction attempts to have SW flow below 1811 gpm (110 psid) for Unsat test. This was chosen in case the operator chooses the incorrect Min Flow Rate of 1769 gpm for a SW DP at 105 psid..

OVERRIDES / REMOTES:

ID #	Description	Delay Time	Initial Value	Ramp Time	Trigger	Condition/ Severity

EVENT TRIGGERS:

ET#	Description	Command
1	KAD06PBR, 22 CFCU low speed PB	

SPECIAL INSTRUCTIONS:

- Provide operator marked up copy of S2.OP-ST.CBV-0003 for 22 CFCU.

OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Containment Integrity (SF 5) - Containment Cooling System

TASK: Perform 22 CFCU Surveillance Test IAW S2.OP-ST.CBV-0003

TASK NUMBER: N0220130201

INITIAL CONDITIONS:

- Unit 2 is at 100% power.
- No major equipment out of service and no active Tech Specs are in effect.

INITIATING CUE:

- You are the Reactor Operator.
- The CRS has directed you to **PERFORM** a scheduled surveillance test on 22 CFCU IAW S2.OP-ST.CBV-0003, Containment Systems – Cooling Systems.
- All Prerequisites are completed SAT and all required M&TE are installed in the field.
- A field NEO is standing by to provide SW header differential pressure when directed.
- Notify CRS of test results.

Successful Completion Criteria:

1. All critical steps completed.
2. All sequential steps completed in order.
3. All time-critical steps completed within allotted time.
4. JPM completed within validated time. Completion time may exceed the validated time if satisfactory progress is being made (and NRC concurrence is obtained).

Task Standard for Successful Completion:

1. **PERFORMS surveillance test IAW S2.OP-ST.CBV-0003 and determines 22 CFCU Test Results is UNSAT.**

OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE

SYSTEM: Containment Integrity (SF 5) - Containment Cooling System

TASK: **Perform 22 CFCU Surveillance Test IAW S2.OP-ST.CBV-0003**

* #	STEP NO.	STEP (Shaded area denotes Critical Step) (* Critical Step)	STANDARD (Bolded area identifies Task Standard)	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	CUE	Fill in the JPM Start Time when the student acknowledges the Initiating Cue. **START TIME:**_____			
	3.0	**PRECAUTIONS AND LIMITATIONS** 3.4 After recording Differential Pressure (DP) reading, select corresponding minimum flow value specified in Exhibit 1. • IF measured DP value is between DP values specified in Exhibit 1, THEN select minimum flow value for next higher DP value listed (e.g., if measured DP is 101 psid, use minimum flow required at 105 psid).	Operator reads and initials all P&Ls. **Evaluator's Note:** Understanding P&L 3.4 is important to properly determining which DP value to choose from Exhibit 1.		
	4.0	**EQUIPMENT/MATERIAL REQUIRED**	**CUE**: Completed SAT by I&C Technicians.		
	5.1	CFCU Operability and Service Water Flow Verification			
	5.1.1	PERFORM test on each Containment Fan Coil Unit required to be tested IAW the following instructions:			
*	5.1.1.A	**ENSURE** CFCU being tested is in LOW SPEED IAW S2.OP-SO.CBV-0001(Q), Containment Ventilation Operation.	**Operator places CFCU in LOW SPEED IAW S2.OP-SO.CBV-0001.** Operator **GOES TO** S2.OP-SO.CBV-0001		
		These next steps are from S2.OP-SO.CBV-0001, Containment Ventilation Operation.			

OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE

SYSTEM: Containment Integrity (SF 5) - Containment Cooling System

TASK: **Perform 22 CFCU Surveillance Test IAW S2.OP-ST.CBV-0003**

* #	STEP NO.	STEP (Shaded area denotes Critical Step) (* Critical Step)	STANDARD (Bolded area identifies Task Standard)	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	5.1.2	IF shifting CFCU(s) from High Speed to Low Speed, THEN for each CFCU to be shifted:			
*	5.1.2.A	**PRESS** FAN HIGH SPEED STOP bezel.	**Operator depresses HIGH SPEED STOP bezel for 22 CFCU and verifies STOP bezel illuminates.**		
	NOTE	Steps 5.1.2B and 5.1.2C should be coordinated for 25 second delay prior to energizing slow speed windings.	Operator reads the Note and continues on.		
	5.1.2.B	**ENSURE** FAN STOP bezel is illuminated.	Operator verifies HIGH SPEED STOP bezel is illuminated.		
*	5.1.2.C	When 25 seconds have elapsed from pressing HIGH SPEED STOP bezel, **PRESS** FAN LOW SPEED START bezel.	**Operator waits 25 seconds from when HIGH SPEED STOP bezel was depressed.** **Operator depresses LOW SPEED START bezel for 22 CFCU and verifies START bezel illuminates.**		
	5.1.2.D	**ENSURE** following dampers are in indicated positions: ▪ ROUGH FLTR DAMPER CLOSED ▪ HEPA INLET DAMPER OPEN ▪ HEPA OUTLET DAMPER OPEN	Operator verifies the following for 22 CFCU: ▪ ROUGH FLT DAMPER CLOSED bezel extinguished. ▪ HEPA INLET DAMPER OPEN bezel illuminated. ▪ HEPA OUTLET DAMPER OPEN bezel illuminated.		

OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE

SYSTEM: Containment Integrity (SF 5) - Containment Cooling System

TASK: **Perform 22 CFCU Surveillance Test IAW S2.OP-ST.CBV-0003**

* #	STEP NO.	STEP (Shaded area denotes Critical Step) (* Critical Step)	STANDARD (Bolded area identifies Task Standard)	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	5.1.2.E	IF Service Water flow is less than 1465 gm, THEN: 1. STOP the CFCU 2. REFER to S2.OP-SO.SW-0005, SW System Operability Guidelines	Operator determines that SW flow is > 1465 gpm and marks step **N/A** and continues on.		
	5.1.2.F	**ENSURE** Service Water flow greater than or equal to 1465 gpm.	Operator verifies that SW flow is > 1465 gpm.		
		Operator returns to S2.OP-ST.CBV-0003:	Operator **GOES TO** S2.OP-ST.CBV-0003		
	5.1.1.B	**RECORD** Start Time in applicable Attachment(s), Section 3.0, for CFCU being tested.	Operator records START time.		

OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE

SYSTEM: Containment Integrity (SF 5) - Containment Cooling System

TASK: **Perform 22 CFCU Surveillance Test IAW S2.OP-ST.CBV-0003**

* #	STEP NO.	STEP (Shaded area denotes Critical Step) (* Critical Step)	STANDARD (Bolded area identifies Task Standard)	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
*	5.1.1.C	WHEN at least 15 minutes has elapsed, THEN **RECORD** the following in applicable Attachment, Section 3.0, for CFCU being tested:	**CUE**: Inform operator that 15 minutes have elapsed.		
		• Stop Time	Operator records STOP time.		
*		• Cooling Water Flow Rate (gpm)	**Operator records SW flow on 22 CFCU (1787 +/- 5 gpm)**		
*		• IF testing 21 OR 22 CFCU, THEN **RECORD** 21 SW HDR DP.	**Operator contacts field NEO and Records SW header DP of 106 psi**		
		• IF testing 23 CFCU, THEN **RECORD** both 21 SW HDR DP AND 22 SW HDR DP (Refer to Step 3.5).	**CUE:** When field operator is contacted; report 21 SW Header DP is reading 106 psi.		
		• IF testing 24 OR 25 CFCU, THEN **RECORD** 22 SW HDR DP.	Operator determines that 23, 24, and 25 CFCUs are not being tested.		
*		• **RECORD** Test Results by initialing the SAT OR UNSAT column IAW Acceptance Criteria stated in the attachment.	**Operator records Test Results as UNSAT.** 22 CFCU is Inoperable based on Cooling Water Flow Rate is less than the Minimum Flow Rate (1811 gpm) required in Exhibit 1 selecting a SW DP of 110 psi (refer to P&L 3.4).		
			P&L 3.3 requires CFCU SW flow rate ≥ 1465 gpm AND ≥ Min Flow Rate specified in Exhibit 1 to be Operable.		
			See Answer Key for completed Attachment 2, Section 3.0		

OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE

SYSTEM: Containment Integrity (SF 5) - Containment Cooling System

TASK: **Perform 22 CFCU Surveillance Test IAW S2.OP-ST.CBV-0003**

* #	STEP NO.	STEP (Shaded area denotes Critical Step) (* Critical Step)	STANDARD (Bolded area identifies Task Standard)	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	CUE:	**JPM is Complete.** **RECORD** the STOP TIME. **STOP TIME:**_____	**Terminate the JPM when the operator Records Test Results as SAT or UNSAT.**		

OPERATIONS DEPARTMENT
JOB PERFORMANCE MEASURE

TQ-AA-106-0303

JPM: 17-01 NRC Sim-f

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE: All steps of this checklist should be performed upon initial validation. Prior to JPM usage, revalidate JPM using steps 8 and 11 below.

R 1. Task description and number, JPM description and number are identified.

R 2. Knowledge and Abilities (K/A) references are included.

R 3. Performance location specified. (in-plant, control room, or simulator)

R 4. Initial setup conditions are identified.

R 5. Initiating and terminating Cues are properly identified.

R 6. Task standards identified and verified by SME review.

R 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).

R 8. Verify the procedure referenced by this JPM matches the most current revision of that procedure: Procedure Rev. 20 Date 6-6-18

NA 9. Pilot test the JPM:
a. verify Cues both verbal and visual are free of conflict, and
b. ensure performance time is accurate.

NA 10. If the JPM cannot be performed as written with proper responses, then revise the JPM.

NA 11. When JPM is revalidated, SME or Instructor sign and date JPM cover page.

SME/Instructor: R. Chan Rudolph Chan Date: 6-6-18

SME/Instructor: _____ Date: _____

SME/Instructor: _____ Date: _____

OPERATIONS DEPARTMENT
JOB PERFORMANCE MEASURE

INITIAL CONDITIONS:

- Unit 2 is at 100% power.
- No major equipment out of service and no active Tech Specs are in effect.

INITIATING CUE:

- You are the Reactor Operator.
- The CRS has directed you to **PERFORM** a scheduled surveillance test on 22 CFCU IAW S2.OP-ST.CBV-0003, Containment Systems – Cooling Systems.
- All Prerequisites are completed SAT and all required M&TE are installed in the field.
- A field NEO is standing by to provide SW header differential pressure when directed.
- Notify CRS of test results.

ATTACHMENT 2

22 CFCU DATA SHEET

1.0 Reason For Test

Date: Today	Post-Maintenance Operability Retest?	Yes	No X
	SAP Order Number(s): 50206325		

2.0 Calibration Data

Instrument/Test Equipment Description	Calibration Due Date	ID Number	Initials
2FA5495 22 CFCU Outlet Water Flow Indicator	4-15-19	205216	R
Model HQS-2 Sensor Module 0-250 psi	5-7-19	205152	R
Model HQS-2 Sensor Module 0-250 psi	5-21-19	206116	R
Model PTE-1 Hand Held Heise Pressure Calibrator Gauge	9-2-19	206025	R

3.0 22 CFCU Performance Data

Component	Test Data		Acceptance Criteria	Test Results SAT	Test Results UNSAT
22 CFCU	Start Time		22 CFCU operated for at least 15 minutes in LOW SPEED at ≥1465 gpm. (+/- 5 spm)	✓	
	Stop Time	> 15 mins			
22SW58	Cooling Water Flow Rate	1787			
22SW72					
22SW223					
21 SW HDR ΔP (78' IPA - 21 SW Piping Room)		106	Cooling Water Flow Rate is ≥ the Minimum Flow Rate obtained in Exhibit 1 for ΔP specified.		✓
Minimum Flow Rate (Exhibit 1)		1811			

ANSWER KEY