Functional Test

Project:_____

FT-_____   CABINET UNIT HEATER CUH-1; 2

Related Tests: Boilers

1.   Participants

<u>Party</u>   <u>Participation</u>

Party filling out this form and witnessing testing _____

Date of test _____

2.   Prerequisite Checklist

a.   The following have been started up and startup reports and prefunctional checklists submitted and approved ready for functional testing: __ CHU-1; 2

b.   __ Boilers 1; 2 have successfully completed functional testing.

c.   __ All control system functions for this and all interlocking systems are programmed and operable per contract documents, including final setpoints, schedules, debugging, loop tuning and sensor calibrations complete.

_____   _____
Controls Contractor Signature or Verbal   Date

d.   __ All A/E punchlist items for this equipment corrected.

e.   __ Safeties and operating ranges reviewed.

f.   __ Test requirements and sequences of operation attached.

g.   __ Schedules and setpoints attached.

h.   __ Have all energy savings control strategies, setpoints and schedules been incorporated that this equipment and control system are capable of? If not, list recommendations below.

i.   __ **BAS Program Review.** Review the BAS software control program(s) for this equipment.   Parameters, setpoints and logic sequences appear to follow the specified written sequences.

j.   __ **Packaged Control Program Review.** Review the packaged control program(s) for this equipment. Parameters, setpoints and logic sequences appear to follow the specified written sequences.

k.   __ Record of All Values for Current Setpoints (SP), Control Parameters, Limits, Delays, Lockouts, Schedules, Etc. Changed to Accommodate Testing:

Parameter	Pre-Test Values	Returned to Pre-Test Values √	Parameter	Pre-Test Values	Returned to Pre-Test Values √
CUH-1 ON setpoint			CUH-2 ON setpoint		
CUH-1 OFF setpoint			CUH-2 OFF setpoint		

<u>Notes:</u>

3.   Sensor Calibration Checks. Check the sensors listed below for calibration and adequate location. This is a sampling check of calibrations done during prefunctional checklisting. Test the packaged controls and BAS readings.

"In calibration" means making a reading with a calibrated test instrument within 6 inches of the site sensor. Verify that the sensor reading (via the permanent thermostat, gage, packaged control panel or building automation system (BAS)) compared to the test instrument-measured value is within the tolerances specified in the prefunctional checklist requirements (_____).

Sensor & Location	Loc-ation OK[1]	**1st** Gage or Pkg & BAS Values	Instru. Meas'd Value	**Final** Gage or Pkg & BAS Values	Pass Y/N?
CUH-1;2 stat temp.		Stat:		Stat:	

[1]Sensor location is appropriate and away from causes of erratic operation.

4. Device Calibration Checks.
---NONE---

5. Verification of Misc. Prefunctional Checks.

Misc. site checks of the prefunctional checklist and startup reports completed successfully.   Pass? Y / N _____
__ Unit mounted securely.   __ Unit accessible for servicing.   __ No unusual noise or vibration in fan.

6.   Functional Testing Record

Proced. No. & Spec. Seq. ID[1]	Req ID No.[2]	**Test Procedure**[3] (including special conditions)	**Expected and Actual Response**[4] [Write ACTUAL response in brackets or circle]	Pass Y/N & Note #
1 Seq. 1		Adjust CUH-1 ON setpoint until it is 1F above the space temp.	CUH-1 __Fan starts. __ Htg valve opens; __warm air delivered.	
		Adjust CUH-2 ON setpoint until it is 1F above the space temp.	CUH-2 __Fan starts. __ Htg valve opens; __warm air delivered.	
		Adjust CUH-2 OFF setpoint until it is 1F below the space temp.	CUH-2 __Fan stops. __ Htg valve closes.	
2 Seq. 1		Adjust CUH-1 OFF setpoint until it is 1F below the space temp.	CUH-1 __Fan stops. __ Htg valve closes.	
3	**--**	**Return all changed control parameters and conditions to their pre-test values**[5]	**Check off in Section 2 above when completed**	

Record Foot Notes
[1]Sequences of operation specified in Contract Documents (attached).
[2]Mode or function ID being tested, per testing requirements section of the project Specifications.
[3]Step-by-step procedures for manual testing, trend logging or data-logger monitoring.
[4]Include tolerances for a passing condition.
[5]Record any permanently changed parameter values and submit to Owner.

-- END OF TEST --

Notes: