Combustion Controls Testing List- HTF Heater Gas & Oil Fired Initial Test

Facility Name:
Address:
Equipment Name/Type/Number:
Btu/hr. Input Rating:
Main Burner Fuel Type:
Type of Thermal Fluid Being Used:

	Item Tested	Tested Okay	Corrected
1a	Leak Test Upstream Main Gas Shutoff Valve: Bubbles/Min.	☐	Choose
1b	Leak Test Downstream Main Gas Shutoff Valve: Bubbles/Min.	☐	Choose
2a	Leak Test Burner 1 Gas Shutoff Valve: Bubbles/Min.	☐	Choose
2b	Leak Test Burner 2 Gas Shutoff Valve: Bubbles/Min.	☐	Choose
3a	Leak Test Upstream Pilot Gas Shutoff Valve: Bubbles/Min.	☐	Choose
3b	Leak Test Upstream Pilot Gas Shutoff Valve: Bubbles/Min.	☐	Choose
4	High Gas Pressure Switch: Design Setting: Actual Setting: Left Setting At:	☐	Choose
5	Low Gas Pressure Switch: Design Setting: Actual Setting: Left Setting At:	☐	Choose

	Item Tested	Tested Okay	Corrected
6	Low Fuel Oil Pressure Interlock: Design Setting: Actual Setting: Left Setting At:	☐	Choose
7	Low Fuel Oil Temperature Interlock (Heated Oil): Design Setting: Actual Setting: Left Setting At:	☐	Choose
8	High Fuel Oil Temperature Interlock (Heated Oil): Design Setting: Actual Setting: Left Setting At:	☐	Choose
9	Low Combustion Air Flow / Pressure Switch: Design Setting: Actual Setting: Left Setting At:	☐	Choose
10	Low Exhaust Air Flow/Pressure Switch: Design Setting: Actual Setting: Left Setting At:	☐	Choose
11	Stack Excess Temperature Interlock:	☐	Choose
12	Low Fuel Oil Burner Atomizing Air / Steam Interlock:	☐	Choose
13	Purge Timer: (At Least 4 Volume Changes) Design Setting: Actual Setting: Left Setting At:	☐	Choose
14	Proof Of Air Damper High Fire Position for Purge:	☐	Choose
15	Low Fire Position Proven Prior to Burner Startup:	☐	Choose
16	Pilot Burner Trial For Ignition Period (15 Seconds): Design Setting Seconds: Actual Setting Seconds:	☐	Choose
17	Main Burner Trial for Ignition Period (Max 10 Seconds for Gas Or No. 2 And 4 Oil; 15 Seconds for Nos. 5 And 6 Oil): Design Setting Seconds: Actual Setting Seconds:	☐	Choose

	Item Tested	Tested Okay	Corrected
18	Flame Failure Detection Pilot:	☐	Choose
19	Flame Failure Detection Main Burner:	☐	Choose
20	Low Thermal Fluid Flow Through the Heater: Design Setting: Actual Setting: Left Setting At:	☐	Choose
21	High Thermal Fluid Pressure: Design Setting: Actual Setting: Left Setting At:	☐	Choose
22	Low Thermal Fluid Pressure at Heater Outlet: Design Setting: Actual Setting: Left Setting At:	☐	Choose
23	Heater Low Thermal Fluid Differential Pressure: Design Setting: Actual Setting: Left Setting At:	☐	Choose
24	Heater High Thermal Fluid Outlet Temperature: Design Setting: Actual Setting: Left Setting At:	☐	Choose
25	Minimum Thermal Fluid Flow Limit: Design Setting: Actual Setting: Left Setting At:	☐	Choose
26	High Heat Exchanger Tube Temperature: Design Setting: Actual Setting: Left Setting At:	☐	Choose
27	Low Thermal Fluid Level In Expansion Tank:	☐	Choose
28	Low Liquid Level in the Vaporizer /Heater:	☐	Choose
29	High Temperature Thermal Fluid Entering the Heater: Design Setting: Actual Setting: Left Setting At:	☐	Choose

	Item Tested	Tested Okay	Corrected
30	Activation of an Emergency Stop:	☐	Choose
31	Steam Snuffing Valves Closed: (Should Trip Heater when Steam Snuffing Valves are Open)	☐	Choose
32	Activation Of The Heater's Fire Suppression System Interlock (Where Provided):	☐	Choose
33	Visually Inspect Explosion Relief Devices to Ensure they are Not Obstructed:	☐	Choose
34	All Safety Interlocks are Present and Have Not Been Bypassed or Rendered Ineffective:	☐	Choose
35	Calibration of Indicating and Recording Instruments:	☐	Choose
36a	Activation of 3-Way Primary Loop Divert Valve or Safety Shut Off Valves or Stopping of Positive Displace Pump due to Sprinkler Flow Alarm Activation or 36b.	☐	Choose
36b	Activation of 3-Way Primary Loop Divert Valve or Safety Shut Off Valves or Stopping of Positive Displace Pump due to Fire Heat Detection Alarm Activation or 36a.	☐	Choose
37a	Activation of 3-Way Secondary Loop Divert Valve or Safety Shut Off Valves due to Sprinkler Flow Alarm Activation in Secondary Loop Area or 37b.	☐	Choose
37b	Activation of Primary 3-Way Secondary Loop Divert Valve or Safety Shut Off Valves due to Fire Heat Detection Alarm Activation in the Secondary Loop Area or 37a.	☐	Choose
Any Additional Interlocks should be added to the form			
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Inspected and tested by: Date:

Witnessed by: Date:

Note: Testing should only simulate hazardous conditions and SHALL NOT create a hazardous condition due to testing.

References & Resources

NFPA 87 Recommended Practice for Fluid Heaters

For further information, contact your local AIG Property Risk Engineer