



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

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

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| | Item Tested | Tested Okay | Corrected |
|----|---|-------------|-----------|
| 6 | Low Fuel Oil Pressure Interlock: Design Setting: Actual Setting: Left Setting At: | | |
| 7 | Low Fuel Oil Temperature Interlock (Heated Oil): Design Setting: Actual Setting: Left Setting At: | | |
| 8 | High Fuel Oil Temperature Interlock (Heated Oil): Design Setting: Actual Setting: Left Setting At: | | |
| 9 | Low Combustion Air Flow / Pressure Switch: Design Setting: Actual Setting: Left Setting At: | | |
| 10 | Low Exhaust Air Flow/Pressure Switch: Design Setting: Actual Setting: Left Setting At: | | |
| 11 | Stack Excess Temperature Interlock: | | |
| 12 | Low Fuel Oil Burner Atomizing Air / Steam Interlock: | | |
| 13 | Purge Timer: (At Least 4 Volume Changes) Design Setting: Actual Setting: Left Setting At: | | |
| 14 | Proof Of Air Damper High Fire Position for Purge: | | |
| 15 | Low Fire Position Proven Prior to Burner Startup: | | |
| 16 | Pilot Burner Trial For Ignition Period (15 Seconds): Design Setting Seconds: Actual Setting Seconds: | | |
| 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: | | |

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

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

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