



## Scope of Supply

### Grady Hospital in Atlanta – BUDGET (SwitchFire Boilers and Hydronic Skid)

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**Attention:** Jack Nelson, P.E.  
**Company:** Oakwell  
**Project:** Grady Hospital in Atlanta – BUDGET  
**From:** Kevin Schmidt (Applications Engineer)  
**Date:** June 30, 2025

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We appreciate the opportunity to bid on your project and hopefully our dedicated team has gone the extra mile in assisting in this bid. We look forward to working on this project together and are here to support you through this project the entire way.

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### TOTAL BOILER SOLUTIONS





# System Requirements

Scope of Supply: 39880073 / Scope Date: 06/30/25

Job Name: Grady Hospital in Atlanta - BUDGET / Project Name: SwitchFire Boilers and Hydronic Skid

## First System Requirements: Packaged Hydronic Solution

Application:	Packaged Hydronic Boiler System ()
Fuel Series:	Natural Gas at
Total Input Boiler Capacity:	12000 MBTU/hr Input
Boiler Design Pressure:	140HW psig
Boiler Operating Pressure:	50 psig
Boiler Safety Valve Setpoint:	140 psig
System Flow Rate:	1,130 gpm
Boiler Supply Water Temperature:	140°F
Boiler Return Water Temperature:	120°F
Glycol Mixture:	0%
Available Site Voltage:	480 V

Proposed System Solution: SKID/PAS/HW/(1)-/VPS(2P)/AS-8/ETB-53-STD/CFG (Qty: 1)

## Second System Requirements: Modular Boiler

Application:	Hot Water
Fuel Series:	Natural Gas and #2 Oil
Boiler Capacity:	12,000 MBTU/hr Input
Design Pressure:	160HW psig
Operating Pressure:	50 psig
Safety Valve Setpoint:	150 psig
Supply Water Temperature:	140°F
Return Water Temperature:	120°F
Gas NOx Emissions Level:	30 ppm
Available Site Voltage:	460 V
Available Site Gas Pressure:	50 in. w.c.
Approximate Site Altitude:	700 ft. ASL
Insurance Requirements:	ASME CSD-1

Proposed System Solution: SwitchFire-200-12000-160HW () -STD/CFG (Qty: 4)



## **System Features and Benefits**

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# **Packaged System**

## **Features and Benefits of Equipment, Skid Assembly, and Support**

## **ClearFire® Boiler**

### ● **Packaged Boiler & Burner System**

- ▶ Completely integrated boiler, burner, and control systems offer high efficiency, flexibility, reliability, safety, and ease of maintenance.
- ▶ Single-source boiler and burner manufacturer providing excellent service and support for all products, components, and accessories throughout the lifetime of the system.
- ▶ Designed, constructed, and hydrostatically tested in accordance with the ASME BPVC.
- ▶ UL/cUL tested, approved, listed, and labeled.

### ● **One-Pass Firetube Boiler Design**

- ▶ Maximum heat transfer from AluFer® extended surface firetubes.

### ● **Integral Premix Mesh Burner Design**

- ▶ <20 ppm (standard) natural gas NOx emissions.
- ▶ Fully modulating, linkageless mesh burner automatically optimizes fuel-to-air ratio.
- ▶ Symmetrical, 360-degree, even-temperature output increases heat transfer efficiency.

### ● **FALCON – Integrated Burner Management System**

- ▶ Burner sequencing, electronic ignition, flame supervision, safety shutdown with time-stamped lockout condition, combustion fan control, switch supervision, first-out annunciator, real-time data trending, outdoor temperature reset, setback setpoint, remote setpoint control, and a colored graphical human-machine interface (HMI).
- ▶ Boiler life extended by minimizing short-cycling, purge, and standby losses.
- ▶ Boiler feedwater pump and combustion air damper interlock capabilities.
- ▶ Lead-lag configuration available for a maximum of eight boilers.

### ● **Standard Boiler Trim and Valves**

- ▶ Boiler trim provided in accordance with UL Listing and ASME CSD-1 standards including high-limit temperature control switch (manual reset), operating limit temperature control switch, combustion air proving switch, and primary low water cutoff (LWCO) device, and ASME safety relief valve.

### ● **Standard Gas Train Configuration**

- ▶ Assembled in accordance with UL Listing, ASME CSD-1, GE-GAP (IRI), and FM standards including low and high gas pressure switches (manual reset), test downstream manual ball-type shutoff cock, single-body dual-safety shutoff gas valve, and main gas regulator.

## Packaged System Skid Assembly

### ● Pre-Engineered Design

- ▶ Turnkey solution due to integrated equipment, components, accessories, and controls.
- ▶ Water, gas, steam, and drainage connections available with a single connection point.

### ● Pre-Assembled System

- ▶ Reduces overall time and labor costs for installation.
- ▶ Eliminates costly wiring and piping mistakes.

### ● Portable and Compact Skid Design

- ▶ Facilitates easy shipping, installation, and relocation.
- ▶ Occupies a smaller footprint than traditional boiler room solutions.

## Packaged System Support

### ● Local Servicing by Authorized Service Professionals

- ▶ Service provided by a Cleaver-Brooks Representative Association (CBRA) member.

### ● Standard Submittal Package

- ▶ Boiler Dimensional Drawing
- ▶ Boiler Wiring Diagram
- ▶ Skid Dimensional Layout
- ▶ Skid Wiring Diagram
- ▶ System Piping & Instrumentation Diagram
- ▶ Accessory Information

### ● Standard Warranty

- ▶ Standard packaged boiler system warranty.
- ▶ One-year standard factory parts warranty.

### ● Manufacturer-Provided Training

- ▶ Online learning, off-site seminars, and custom on-site operator training available.



## Product Features and Benefits

Scope of Supply: 39880073 / Scope Date: 06/30/25

Job Name: Grady Hospital in Atlanta - BUDGET / Project Name: SwitchFire Boilers and Hydronic Skid

### Model SwitchFire (High Mass Condensing Firetube)



#### PRODUCT CAPABILITIES

**BOILER TYPE:** LARGE CONDENSING FIRETUBE BOILER

**BOILER APPLICATIONS:** HOT WATER

**BURNER FUEL TYPES\*:** NATURAL GAS, #2 FUEL OIL, PROPANE, COMBINATION

**BOILER CAPACITIES\*:** 6.0 TO 12.0 MMBTU/H INPUT

**DESIGN PRESSURES\*:** 160 PSIG

**NOX EMISSIONS\*:** <30 PPM (NATURAL GAS) AND 60 PPM (#2 FUEL OIL)

\*Some combinations of burner fuel types, boiler capacities, design pressures, and NOx emissions may not be available.



# Product Features and Benefits

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## Model SwitchFire (High Mass Condensing Firetube)

### ● Packaged Boiler & Burner System

- ▶ Completely integrated boiler, burner, and control systems offer high efficiency, flexibility, reliability, safety, and ease of maintenance.
- ▶ Single-source boiler and burner manufacturer providing excellent service and support for all products, components, and accessories throughout the lifetime of the system.
- ▶ Designed, constructed, and hydrostatically tested in accordance with the ASME BPVC.
- ▶ cULus tested, approved, listed, and labeled.

### ● Two-Pass Horizontal Firetube Boiler Design

- ▶ Cleaver-Brooks “EX” rifle tubes constructed of 316L stainless steel.
- ▶ Large water volume and low pressure drop, ideal for variable primary flow applications.
- ▶ 6%+ energy savings from counterflow heat exchange and dual return connections.
- ▶ No requirements for minimum flow or minimum return water temperature.
- ▶ 5-year pressure vessel warranty, 10-year fireside condensation corrosion warranty.

### ● Dual Fuel Operation Burner to Meet Various Applications

- ▶ Industry leading Weishaupt burner for dual fuel operation with #2 fuel oil backup.
- ▶ <30 ppm (natural gas) and 60 ppm (#2 fuel oil) NOx emissions.
- ▶ Pressure atomization with burner mounted oil pump.

### ● Integrated Controls

- ▶ Burner sequencing, electronic ignition, flame supervision, safety shutdown with time-stamped lockout condition, combustion fan control, switch supervision, first-out annunciator, real-time data trending, outdoor temperature reset, setback setpoint, and remote setpoint control.
- ▶ Boiler life extended by minimizing short-cycling, purge, and standby losses.
- ▶ Lead-lag configuration available for a maximum of eight boilers.



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Product Model: SwitchFire-200-12000-160HW ( ) -STD/CFG		
Item	Qty.	Description
#1	4	<b>Modular Boiler Model:</b> SwitchFire-200-12000-160HW -STD/CFG  <b>Boiler Capacity:</b> 12000MBTU <b>Model Dimension:</b> 60in x 228.2in x 103.5in <b>Unit Weight:</b> 17614lbs <b>Fuel:</b> Natural Gas and #2 Oil <b>Primary Gas Train Required Gas Pressure:</b> 50 in. w.c. <b>Emissions Level (NG):</b> 30 ppm <b>Emissions Level (Oil):</b> 60 ppm <b>Fuel:</b> Natural Gas and #2 Oil <b>Burner Ignition Type:</b> Spark Ignited Gas <b>Flame Detection:</b> UV Scanner with Self Check <b>Water Mixture:</b> 100% Water <b>Boiler Supply Temperature:</b> 140 F <b>Boiler Return Temperature:</b> 120 F <b>Operating Pressure:</b> 50 psig <b>Safety Valve Setting:</b> 150lb <b>Stack Connection:</b> 20in Flange <b>Blower Motor Voltage:</b> <b>Customer Site Voltage:</b> 460 V  <b>Insurance Requirement:</b> CSD-1 <b>Configuration Check:</b> Standard Selections
#2	4	<b><u>Boiler Application Options</u></b>  Fuel Series - Natural Gas and #2 Oil Safety Relief Valve #1: 2in Outlet - 150lb Natural Gas (NG) NOx Emission Level Range: 30 ppm Oil (#2) NOx Emission Level Range: 60 ppm
#3	4	<b><u>Boiler Pressure Vessel Package</u></b>  <b><u>Pressure Vessel Connections:</u></b>  Stack Connection: 20in Flange Supply and Return Connection: 8 in. 150FL Air Vent Connection: in. NPT Waterside Drain Connection: 1.5 in. NPT Flue Gas Condensate Drain Connection: 1.25 in. NPT  <b><u>Pressure Vessel Accessories:</u></b> Seismic Design Anchor Bolt Provisions: Bracket Kit
#4	4	<b><u>Boiler Valves and Piping Arrangement:</u></b>  Drain Valve: 1.5 in. NPT (Ship Loose )
#5	4	<b><u>Level Control Package</u></b>  Main Low Water Cutoff (LWCO):Warrick 3E-1 Manual Reset
#6	4	<b><u>Miscellaneous Trim Options Package:</u></b>  Stack Thermometer: 3in Dial  Condensate Treatment Package: Tank with Media, Trap By Others (8000 MBTU Capacity Each) QTY:2



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#7	4	<p><b><u>Gas Train Package:</u></b></p> <p><b><u>Primary Gas Train Configuration:</u></b> Nema Rating: NEMA 1 Piping Material: Carbon Steel</p> <p><b><u>Components from Burner to Customer Connection:</u></b></p> <p>Manual Valve #2: 2in Butterball (Factory Piped)</p> <p>Safety Shutoff Valves: Siemens Dual Motorized with 1 POC (Factory Piped)SSOV Double Valve: 2in (Factory Piped)</p> <p>GPR Configuration: Not Required</p> <p>Manual Valve #1: 2.0in Butterball (Factory Piped); Customer Connection: 2.0in</p> <p>Pressure Requirements:</p> <p>Minimum Gas Pressure (@ Inlet of Manual Valve): 50 in. w.c.</p> <p>Maximum Gas Pressure (@ Inlet of Manual Valve): 138.5 in. w.c.</p> <p>Customer Supply Gas Pressure (@ Inlet of Manual Valve): 50 in. w.c.</p> <p><b><u>Primary Gas Train Accessories: (SL)</u></b></p> <p>Primary Gas Train Gas Strainer: 2.5in</p> <p>Primary Gas Train Pressure Gauge</p>
#8	4	<p><b><u>Natural Gas Pilot Gas Train</u></b></p> <p><b><u>Primary Oil Train:</u></b></p> <p>Customer connection</p> <p>Oil pump</p> <p>Strainer</p> <p>Oil pressure switch in supply line</p> <p>Oil solenoid valves in supply line</p> <p>Nozzle head with shutoff device</p> <p>Oil regulator</p> <p>Oil pressure switch in return line</p> <p>Oil solenoid valves in return line</p>
#9	4	<p><b><u>Boiler Controls Package:</u></b></p> <p><b><u>Parallel Positioning: Weishaupt WM-200 (Siemens)</u></b></p> <p>Primary Fuel Actuator</p> <p>Secondary Fuel Actuator</p> <p>Air Actuator</p> <p>Remote Emergency Shutoff (Boiler-Mounted): Terminals Only QTY:</p>
#10	1	<p><b><u>Boiler Room System Controls</u></b></p> <p>Communications Gateway Protocol Translator (ModBus RTU to): BACnet MSTP; Protocol Translator - ProtoNode Remote Panel</p>
#11	4	<p><b><u>Boiler Electrical Package:</u></b></p> <p>Main Power Distribution: Fused Disconnect (460/3/60) (Ship Loose )</p> <p>Electric Sounder Audible Alarm Device (Factory Wired )</p>
#12	1	<p><b><u>Submittal Package for Switchfire:</u></b></p> <p>Dimensional Diagram</p> <p>Wiring Diagram</p> <p>Test Fire Report</p> <p>ASME Data Report</p>



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Product Model: SKID/PAS/HW/(1)-/VPS(2P)/AS-8/ETB-53-STD/CFG		
Item	Qty.	Description
#13	1	<p><b><u>Packaged Hydronic System:</u></b> Packaged Accessory Skid</p> <p><b><u>Site Information:</u></b> Project Market:United States Environmental Conditions: Indoor - Typical Boiler Room Project NEMA Rating: NEMA 1</p> <p><b><u>System Information:</u></b> Main Power Voltage: 460/3/60 Customer Site Voltage: 480 V Boiler Supply Temperature: 140 F Boiler Return Temperature: 120 F Boiler Operating Pressure: 50 PSIG Safety Valve Setpoint: 140 PSIG Skid Header Size: 8 in Customer Supply/Return Connection Size: 8 Boiler Glycol Mixture Percentage: 0% System Volume: 8000 Gallons Return Configuration: Single Return Piping Arrangement: Primary Variable</p> <p><b><u>Skid Mounted Equipment includes:</u></b> Equipment to be Frame Mounted and Piped: Air Separator: 8" Flange with Strainer (Includes Mounting Brackets) Expansion Tank:     Acceptance Volume: 53 Gallons     Total System Volume: 8000 Gallons System Pump(s):     Pump Type:e80ITSC     Pump Variable Speed Drive:Integrated     Pump Configuration:2 Pump(s), 2 Check Valve(s) Piping and supports painted with high temperature black paint</p> <p><b><u>Skid Details</u></b> Panels Built to UL508a Code Frame Material: 4"x4" steel tube frame with 1/4" thick plate deck material Number of Boiler Skid Modules: Number of Accessory Skid Modules: 1 Accessory Skid Module Location     Mounted (Facing Boiler)</p> <p><b><u>Skid Mounted System Connections:</u></b> Wiring skid mounted to a single point of connection Piped to a single point of connection:     Make-up water     Supply Water     Return Water Customer Connections to each Boiler:     Fuel     Safety Relief Valve     Stack Venting     Flue-Condensate Drain</p>
#14	2	Check Valve: 8" Flange Cv = 1115
#15	2	Suction Diffuser - 8" x 6"



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Product Model: AIR/SEPARATOR-8" Flange		
Item	Qty.	Description
#16	1	Air Separator
Product Model: EXPANSION/TANK-53GAL ACCEPTANCE VOLUME		
Item	Qty.	Description
#17	1	Expansion Tanks
Product Model: SYSTEM/PUMP-6x6x9.5B		
Item	Qty.	Description
#18	2	System Pump - B&G e80ITSC 6x6x9.5B selected for 1130 GPM at 50 feet hd. 20HP TEFC Motor @ 1800RPM With Integrated VSD Pump Inlet/Outlet: 6" Impeller Diameter: 9.125" Flange mounting brackets EPR-SiC/SiC Mechanical Seal