

CASE STUDY:
Wisconsin Hospital

Industry:
Healthcare



Wisconsin Hospital Installs ProFire® Burners to Increase Safety and Efficiency

One of Wisconsin's oldest hospitals operates with four boilers that run on natural gas and fuel oil. The boilers provide steam for building heat, sterilization, humidification and cafeteria functions. In the winter months, the hospital operates a Cleaver-Brooks 1,200 HP boiler. In addition, it has three 600 HP Keeler watertube boilers that are tapped during the summer months when the load decreases. These boilers are also used in the winter months as warm-up boilers because in a hospital, redundancy is mandatory.

WISCONSIN HOSPITAL

LOCATION

Wisconsin

PROFILE

The burners on the hospital's existing watertube boilers were improperly engineered, causing safety concerns. They also cycled excessively during the summer.

CHALLENGE

Fit the right-size, high turndown burners on three existing 600 HP watertube boilers.

SOLUTION

Install Cleaver-Brooks ProFire® burners with 10 to 1 turndown capability.

RESULTS

The excessive cycling ended, and boiler efficiency increased by 5 to 7 percent. Also, the properly fitted burners resolved safety concerns.

In 2012, the hospital began looking for ways to increase the efficiency and safety in its boiler room. According to the hospital's chief boiler operator, the burners that were on the 600 HP boilers were steam atomizing and tended to misfire when firing on #2 fuel oil, causing them to rapidly expand their casings, which is a dangerous situation for the engineers.

"We had improperly engineered burners on our watertube boilers, so safety was a concern," said the chief boiler operator. "We were also looking for improvements in efficiency."

The hospital's chief boiler operator began researching replacement burner options. He knew the importance of fitting the right size burner to boiler in order for the system to work together optimally and contacted Scott Holzli at PBBS Equipment Corp. in Milwaukee to replace the burners in the hospital.

Holzli recommended Cleaver-Brooks ProFire® burners because of the 10 to 1 turndown capability and guided the process for properly matching the right burner to the existing watertube boilers. The hospital's chief boiler operator had previous experience with Cleaver-Brooks products and knew the company had a long history of performance and reliability.

During the installation of the ProFire burners, the hospital switched the boilers from steam atomization to air atomization, which required adding a return line on each boiler for the fuel and an atomizing air compressor. During the summer months, if there were a loss in natural gas, the whole header of steam pressure would be lost by the time the boilers switched to oil. As a result, they would have to fire up from a cold start, which is detrimental in a hospital.

Typically, Cleaver-Brooks ProFire burners are installed with Hawk boiler room controls; however, the hospital had a parallel positioning control system already in place. The hospital's chief boiler operator asked PBBS Equipment to customize the burner to their existing control system, which the company did. The boiler operator said the system works very well, and he is very pleased with the install.

“We’re extremely happy to have these ProFire high-turndown burners, particularly in the summer. We don’t have to worry any more about the excessive cycling,” said the hospital’s chief boiler operator. “They make our job easier. We know that when we turn the boilers on, they’ll stay on.”

Because the boilers do not constantly cycle on and off like before, the boiler operator said he has been able to drop the steam pressure by 10 psi to 90 psi in the summer.

He added, “It’s unbelievable when I look at the flame pattern from my old burner and compare it with the new ones. There is a distinct difference in the rotation and turbulence. The burners are doing what they should be doing.”

Installing ProFire burners on its existing boilers has helped this hospital achieve a 5- to 7-percent increase in efficiency and peace of mind regarding safety.

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