

Campbell-Sevey And First District Say "Cheese!"



FDA's Johnstone boilers with Webster dual fuel JBEX burners.

First District Association (FDA), a Dairy Cooperative established in Minnesota in 1921, operates one of the nation's largest dairy processing plants.

In 2017, FDA was processing 5 million lbs. of milk into 550,000 lbs. of cheddar cheese per day and wanted to expand their capacity.

FDA turned to Campbell-Sevey, their long-time partner, for help in replacing their 1950s-era Johnstone boilers. It was determined that the replacements were going to be Johnstone boilers equipped with Webster JBEX dual fuel, low NOx burners.

Webster's JBEX boiler burner is a high efficiency, low excess air, low NOx burner that incorporates a unique high swirl firing head to improve combustion efficiency. The JBEX achieves rated boiler horsepower using less fuel and electricity than conventional burners, resulting in significant total energy savings.

FDA wanted burners that burn a secondary fuel in addition to natural gas for two reasons: the most important driving force was the need for redundancy because of the 24/7 nature of the plant. FDA had to be able to switch from natural gas to propane gas at any time without compromising combustion or safety. This also allowed them to continue to take advantage of the discounted gas price CenterPoint Energy offers for interruptible service.

The JBEX's unique dual fuel design for firing two separate gas fuels features two separate gas manifolds that each handle a specific fuel. Webster is one of the few companies to offer this feature, which allows for independent control of each gas fuel, and do this well.

When the milk comes in, the cheese must go out.

The four new boilers are each 800 BHP with a steam capacity of approximately 27,600 lbs/per hour. The boiler plant runs 24 hours daily, 365 days a year, confidently meeting the steam needs of the plant. The FDA plant must be operational around the clock to keep pace with the milk production of their 800 dairy farmers. In order to pasteurize this milk and convert it to cheese, the boilers create process steam at a pressure of 135 PSIG.

Another energy-saving technology that was purchased and installed on the Johnston boiler/Webster burner systems is stack economizers provided with each boiler. These economizers sit on top of the boilers and use heat from the flue gas that would otherwise be wasted to raise the boiler feedwater temperature prior to entering each boiler, thus increasing the boiler efficiency by an additional 2-3%.

Reaping the rewards of a successful collaboration

When Campbell-Sevey and First District began discussing the expansion project, there was a strong preference for Johnston given the experience the plant had with the long service life and reliability of their existing boilers. Johnston's 15-yr warranty on the boilers was attractive and gave confidence in the farmer coop's major energy center investment.

FDA went with the Webster JBEX burner on the recommendation of Campbell-Sevey, who arranged for Johnston to mount the burners onto their boilers. Everything was then shipped as four complete units to First District. The entire process, from start to finish with drawings, installation and startup took about a year.

The final installation and system check, including firing of the burners, happened during the summer of 2018. First District is very proud of their new boiler system, especially when they became the first company in Minnesota to receive a prescriptive rebate from CenterPoint Energy, as a part of their Conservation Improvement Program, for a process boiler system that was designed for over 83%. The icing on the cake for FDA was a rebate check for \$140,570 from the utility.



The First District team being presented with a \$140,570 rebate check from CenterPoint Energy.

For more information on Webster Combustion's products and services, visit our website.



The *Better* Boiler Burner.

619 Industrial Road, Winfield, KS 67156
Phone: 620-221-7464 / Fax: 620-221-9447
sales@webstercombustion.com

www.webstercombustion.com