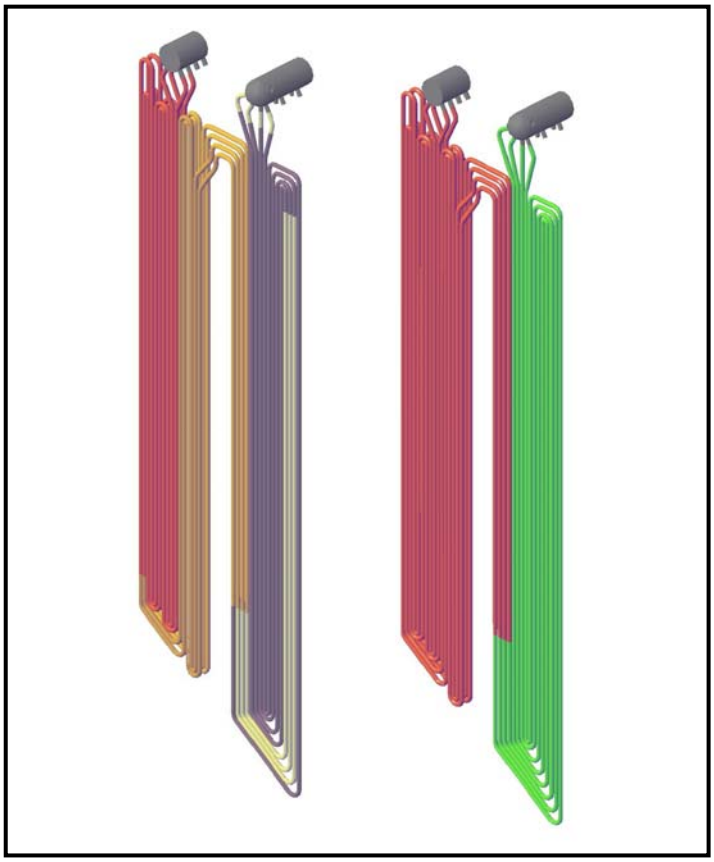
Project Description

JANSEN Combustion and Boiler Technologies, Inc.

Power Boiler Superheater Upgrade
Confidential Customer
US (Southeast)



Project Scope

JANSEN designed and supplied a superheater replacement on a combination hog fuel and natural gas fired boiler with the purpose to increase the boiler's final steam temperature. The unit was supplied by B&W in 1968 with maximum continuous rated (MCR) steaming capacity of 600,000 lb/hr at 825°F and 1,020 psig but was unable to achieve this temperature. With the superheater replacement, the goal was to increase final steam temperature to 925°F from the existing 760°F temperature in the steaming range of 220,000 lb/hr to full MCR capacity when firing a combination of hog fuel, tire derived fuel (TDF), cotton seed, and natural gas, or on natural gas alone.

With the exception of two headers the entire primary and secondary superheater assemblies were replaced with a new design by JANSEN. To meet the performance objectives the superheater surface area was increased by a factor of four and the tube metallurgy was upgraded, using a variety of metal grades and wall thicknesses (as depicted by the colors in the sketch).

New support structural steel was also designed and supplied to carry the significantly increased assembly weights.

JANSEN provided project management, design, engineering, materials procurement, fabrication, and delivery to the mill. The new superheater was installed during the plant's annual spring outage in 2008.

Results

The unit has been in operation since 2008 and the final steam temperature target is being achieved over the entire range of steaming rates.

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