

NEW STEAM PLANT WITH SCR TECHNOLOGY PROVIDES OVERALL PROCESSING EFFICIENCY

BOILER CASE STUDY

Teasdale Quality Foods, Inc.

Atwater, California

70,000 pph 5 ppm NOx

BPS Steam Plant

CUSTOMER APPLICATION AND KEY CHALLENGES

With roots traced back to the 1930s, Teasdale Quality Foods has been providing high quality, delicious products for more than 70 years. Located in the heart of California, they are recognized as a leader and innovator providing retail, food service, and industrial customers with a full line of Hominy and Dry Soak Beans.

Over time, their steam plant slowly deteriorated until they were running their entire operation on a single boiler with no economizer. As a result, the production process became inefficient and consumed high quantities of excess air. After entering negotiations with a private equity firm to sell their company, Teasdale Quality Foods set a goal to upgrade their boiler to meet current and future air quality regulations, but was unsure where to begin.



Teasdale Quality Foods produces a number of food products from their Atwater facility

THE R.F. MACDONALD CO. ANALYSIS & SOLUTION

Teasdale Quality Foods initially contacted R.F. MacDonald Co. for a price quote on a used boiler, but soon realized that it would be more cost efficient in the long run to build an entirely new steam plant. R.F. MacDonald Co. provided complete design and integration for an SCR based system; from selecting the optimal site location for the new foundation, to the installation and training of the equipment, all the way through completing the PG&E rebate process.

Because R.F. MacDonald Co. was constructing an entirely new steam plant structure, Teasdale Quality Foods took the opportunity to upgrade all of their equipment to state-of-the-art technology that would meet, not only the current air quality and performance standards, but future regulations into the future.

"Whether it's working with your architectural engineer, dealing with the air district, or helping you handle your PG&E rebate, R.F. MacDonald Co. treats every new account as an opportunity to become a partner with the customer."

The installation included a Cleaver-Brooks Nebraska D-Type watertube boiler with all-membrane wall construction designed for maximum efficiency and excellent NOx performance at 70,000 lbs/hr. The boiler was coupled with a Cleaver-Brooks NATCOM low-NOx burner system designed for 30 pmm NOx with FGR, Allen-Bradley PLC-based controls fully designed and integrated by R.F. MacDonald Co.'s in-house staff, and an economizer manufactured by e-Tech specifically for the San Joaquin air district best performance standards. The Industrial Steam DA system came packaged with feedwater pumps, as well as an SCR system that utilizes a Haldor Topsøe Catalyst with an exit NOx of 5 ppm and ammonia slip not to exceed 10 ppm.

BOILERS

PUMPS

SYSTEMS

SERVICE

PARTS

CORPORATE

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PROJECT RESULTS

R.F. MacDonald Co. assisted Teasdale Quality Foods through the otherwise complicated upgrade process from start to finish. Everything from providing specifications on the new equipment, to working out the top-level engineering details, all the way through the mechanical and electrical installation, including running the new fuel and steam piping, was handled by R.F. MacDonald Co. Upon completion, Teasdale Quality Foods was extremely satisfied with the results and impressed with the proactive level of R.F. MacDonald Co.'s involvement.

Today, the steam plant has been in operation for several months with no problems, which allowed Teasdale Quality Foods to successfully complete the sale of their business. Now R.F. MacDonald Co. is continuing to provide on-going maintenance and support with the new owners, who are happy to have a line of equipment that represents the most modern steam plant design for low emissions and increased efficiency.



Final installation of the SCR based steam plant fully designed, integrated and installed by R.F. MacDonald Co.