

Low NO_x Burners & OFA System

Deseret Power Electric Cooperative – Bonanza Power Plant

Customer

Deseret Power Electric Cooperative
Bonanza Power Plant

Completion Dates

Summer 2016

Services Provided

- Burner Design
- OFA design
- CFD modeling
- Procurement
- Startup, commissioning
- Overall project management
- Construction management
- Combustion tuning

Pre-Installation

Boiler Performance

Burner Heat Input = 240 mmBtu/hr
NO_x = 0.38 – 0.50 lb/mmBtu
CO ~ 3,000 ppm

Post-Installation

Boiler Performance Test

NO_x = 0.25 lb/mmBtu
CO < 400 ppm



Project Summary

Power & Industrial Services provided a complete low NO_x combustion system to Deseret Power Electric Cooperative to improve NO_x and combustion. The scope included design, fabrication, installation supervision, start-up and combustion tuning of new low NO_x burners and a new overfire air system at the Bonanza Power Plant located near Vernal, Utah.

Project Features

- Computational Fluid Dynamic Modeling
- Low NO_x Burners, designed and manufactured by Power & Industrial Services
- Overfire Air Ports & Bent Tube Panels, designed and manufactured by Power & Industrial Services
- New ignition system and flame scanning system
- Combustion Optimization

Project Description

Deseret Power Electric Cooperative retained the services of Power & Industrial Services to engineer, design, manufacture, and optimize a combustion system upgrade project that included the replacement of 20 Advanced Burner Technology low NO_x burners and added a new 12 port overfire air system. The unit is an opposed wall fired 486 MWg FW boiler firing western bituminous coal. The main goal of the project was to improve combustion and operation of the boiler while lowering NO_x and CO and keeping unburned carbon to a minimum.



