

INDECK[®]

Boiler Fuel Supply: Converting from coal to wood fired steam generation

Concept to Completion

Background: After providing 20 years of dependable operation as a coal-fired boiler, a ZURN 150,000 lb/hr two drum stoker fired boiler was dismantled, moved 1,000 miles across the United States, and reassembled as a 135,000 lb/hr wood fired boiler.



The process of getting from the concept to the final commissioning of the boiler, firing a different type of solid fuel with radically different design parameters, required detailed and knowledgeable studies to produce an optimal redesign.

Study Driven Redesign

Originally the boiler was designed to fire bituminous coal, Indeck engineers were tasked with making the boiler suitable for firing low moisture wood waste supplemented by natural gas. Solutions indicated by our study:

1. The furnace height would have to be extended to increase the furnace volume needed for firing wood at the desired firing capacity.
2. The superheater metallurgy and size required upgrading to supply high temperature superheat at new conditions.
3. A new fuel feed system would need to be installed to properly distribute waste wood onto the grate.
4. Complete redesign of the overfire air system and fans was needed to fire wood within emission limits.
5. Reinforced steel column splices and buckstays were added for supporting the new furnace section.
6. A circulation study assured proper operation after pressure part modifications.

End Result

The customer implemented the design changes including pressure parts and stoker equipment furnished by Indeck, and successfully commissioned the boiler and plant with the aid of Indeck Start-up Engineers.

The project was completed on time, achieving the performance and emission levels predicted by the Indeck Engineering Studies.

Please contact us to discuss a project for your boiler.

For more information,
please contact:

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