

BURNING BIO-FUELS AT FERRYBRIDGE

Recently Ferrybridge Power Station awarded TPS of Sweden, in partnership with TEi, a multi-million pound contract to upgrade the technology at Ferrybridge's "C" power station by converting coal and oil burning furnaces to biofuels.

TEI EXPERTISE

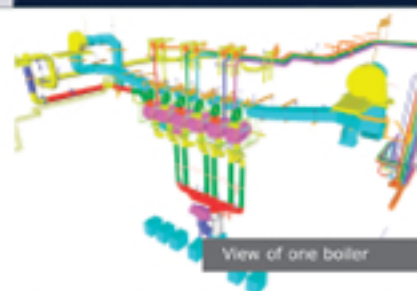
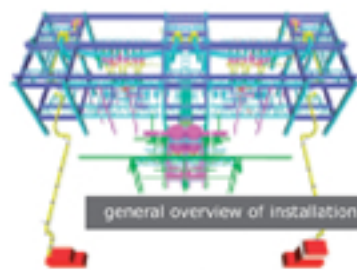
The contract, included detailed mechanical design, supply and fabrication of the following:

- 6 TPS BioSwirl™ wood firing burners per boiler
- Primary air fans and ductwork
- Secondary air fans and ductwork
- Transport air blowers & fuel transport systems
- FGR and ductwork from stacks

TPS BIOSWIRL SYSTEM

The TPS BioSwirl™ system of each boiler is designed to generate 150MW thermal – this is approx 10% of the output of each boiler-using wood and other biofuels. The advantages of the TPS BioSwirl™ cyclone burner are:

- High volumetric burner power load
- Compact and sturdy
- Scalable with minimum de-rating
- Low CO and NO_x emissions
- Wide control range 5:1 to 10:1
- Particle size not critical
- Cost effective



CONTROL OF BIOSWIRL™

The BioSwirl™ system is controlled as follows:

- Fuel flow is controlled directly by power demand
- Cyclone burner conditions are controlled by temperature, which in turn is controlled by primary/secondary air ratio
- Final excess air is controlled by the amount of secondary air

Maximised production and optimal burn-out is therefore continuously ensured.

The system can also be designed to be directly to be controlled and monitored through on-site and remote monitoring via a web browser. Alarm handling can be set up to notify relevant parties via SMS/text messages.



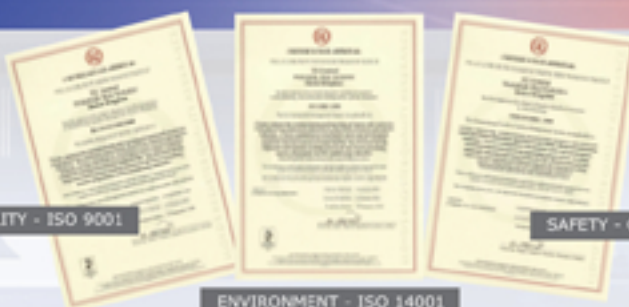
flue gas recycle ductwork

About TPS

TPS has performed and conducted research projects funded by the European Commission since 1992, aiming to sharply increase the use of renewable fuel in Europe. In recent years, TPS has increasingly offered hardware for biomass fuel conversions. The BioSwirl™ burner for pelletised wood has created a huge amount of interest, especially since proving its outstandingly low emissions, combustion stability and fuel flexibility. The increasing interest in hardware is supported by the incorporation of CP Energi AB, which has been constructing mobile units for combustion of oil, gas and biomass fuels for the last 25 years and VTS AB, a manufacturer of wood powder burners, within the TPS group.

About TEi

TEi has provided over 150 years service to the energy, process, manufacturing and construction industries. As a UK wide business, TEi can draw upon specialist support in areas such as thermal design, specialist welding, metallurgical laboratory services, welder training and testing, engineering and design services. TEi recently achieved ISO9001 (Quality), ISO14001 (Environment) and OHSAS 18001 (Health & Safety) accreditation from LRQA.



QUALITY - ISO 9001

SAFETY - OHSAS 18002

ENVIRONMENT - ISO 14001

TEi's integrated management system, IMS, is certified by LRQA for all 3 standards.

"Not only do we provide superior quality services but your contract will be completed to the highest safety standards"



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