

The WR Combustion Systems

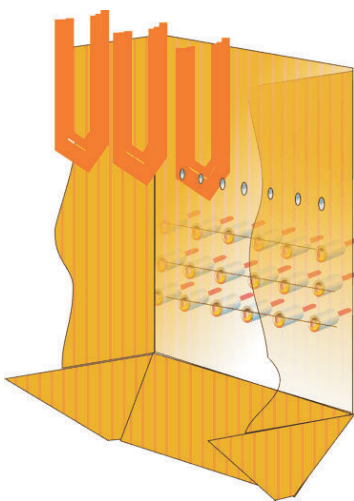


The advanced WR combustion technologies
Installation at La Spezia Power Plant in Italy

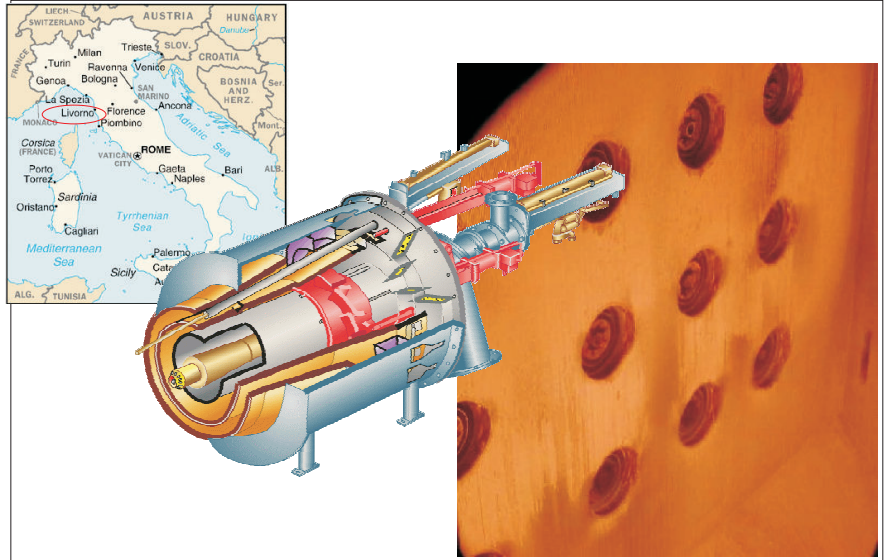
In 2000 BWE contracted an order to retrofit a 600 MWe unit at La Spezia power plant in Italy owned by Enel.

The main objective of the project was to implement primary Low NO_x measures at the plant to make it compliant with current and future EU emission limits. Additionally the plant was optimised with respect to efficiency, aiming at improving the boiler parameter performance.

The plant was equipped with the advanced Wide Range (WR) combustion system from BWE which enables firing of a wide range of coal fuels as well as natural gas. The system consists of WR burners, an OFA system, dynamic classifiers and an optimised fuel distribution system. The burner number and the horizontal and vertical arrangement pitch were changed in order to optimise the furnace heat parameters.



The installation at La Spezia consists of 36 burners arranged in boxer firing, with OFA nozzles above the upper burners on each side of the furnace.



The WR windbox burner units are provided with individual air flow controls and individual flow measurements for airflow balancing. It can be delivered as a coal/oil/orimulsion/gas or biomass burner.

Coal fuels range from very low reactive South African coals to subbituminous normal coals.

The advantages achieved by the retrofit were:

- NO_x below 550 mg/Nm³
- UBC levels of approx. 3%
- Improved fuel flexibility
- Improved unit efficiency

The boiler heat balances were modelled and optimised whereby the attemporator operation was minimised, and hence the efficiency improved. Alterations on the reheater surfaces being the major part of this modification were introduced during the combustion retrofit outage.

The WR burners supplied are dual fired; either as coal/natural gas or coal/oil.

World leader in steam power technology

Burmeister & Wain Energy A/S has specialized in the development and design of advanced steam boiler plants for utility and biomass fired power stations.

Furthermore, BWE designs a wide range of auxiliary power station equipment such as the BWE Low-NO_x coal/oil/N-gas/biomass burners, Air Preheaters and Gas-Gas Heaters.

BWE is part of the Italian STF S.p.A. Group.

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