



## Synopsis

In September, 2007, China and the Chad National Petroleum Corp. signed an agreement on building a joint venture refinery in Chad, N'Djamena, Africa. This large refinery complex is composed of refining units, an independent power plant, an oil marketing center and a staff camp, covering an area of 25 square kilometers. Equipped with production units such as atmospheric distillation, HOC (heavy oil catalysis), catalytic reforming (CR), hydrofining, gas fractionation, polypropylene and product purification as well as public utilities, the refinery processes crude oil products from Block H operated by CNPC International (Chad) Ltd. and produces gasoline, diesel, kerosene, polypropylene, liquefied gas and fuel oil, etc. Besides satisfying the need of the refinery, the on-site power plant also supplies electricity to N'Djamena, the capital city of Chad.

## NTFB

NTFB Combustion Equipment USA participated in the Africa Assistance Plan on N'djamena and successfully completed the Construction and commissioning of a series of five 165,000 PPH watertube steam boiler-burner systems at the N'djamena Chad refinery. These five separate burners use heavy oil or diesel oil, along with natural gas and LPG gas. The burners are applied in different fuel-supply conditions, realizing multi-fuel combustion of each fuel at random ratios. Each burner system is equipped with a custom designed oil atomizer gun designed to fit the shape of the boiler furnace. They are also equipped with real-time online monitoring of furnace to ensure that it operates at maximum efficiency throughout the firing range, regardless of the fuels being fired. For efficient burner management and combustion controls, each system is equipped with dual redundant PLC's to ensure normal operation while one of the PLC is down for maintenance.



Moreover, the multi-fuel firing mode feature achieves an easy switch among the three fuels in random ratios as needed.

Operating at the core power equipment of the N'djamena refinery plant, NTFB helps insure that the operation of the associated steam power plant is safe, reliable, and productive.

***Equipment provided:*** Five 165,000 PPH Packaged Watertube Boilers with NTFB Single Burner Multi-Fuel Fired Packaged Burners with Fuel Gas Piping, Burner Management, Combustion Controls and Related Instrumentation for Remote Operation/Emergency Stand-by Operation.

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