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Power stations at Manuel Belgrano and San Martín power plants (Argentina)

SENER XENERGY / XTHERMAL GENERATION / XCCGT - COMBINED CYCLE GAS TURBINES / ARGENTINA

POWER STATIONS AT MANUEL BELGRANO AND SAN MARTÍN POWER PLANTS (ARGENTINA)

Cliente: COTERSA (TSM) Y SEASA (TMB)

Fecha inicio: enero del 2006

País: Argentina

Sener won the contract to carry out the development of the basic project and the detailed engineering work for the Balance of Plant (BOP) for two combined cycle power stations in Argentina. The turnkey projects were for two consortiums: Cotersa for the San Martín thermoelectric power station (TSM) and Seasa for Manuel Belgrano (TMB). For the latter, Sener carried out purchasing and tracking activities for the BOP teams.

Each combined cycle system is an 800MW power plant, using a 2x2x1 configuration and follows the Siemens standard SCC5-4000F 2×1 (two gas turbines plus two recuperation boilers and a steam turbine). Both cycles can be fed with natural gas from the network or from diesel fuel stored at the plant. This

design involves the development of specific systems to reduce NOx emissions in the waste gases and the precise definition of the handling systems for gas and liquid fuels.

Broadly speaking, the layout of the power stations is similar, as the power blocks (gas and steam turbines and recuperation boilers) are regarded as sister projects, although they differ widely in the arrangement and definition of the BOP. The main difference is in the water-cooling system for cooling the condenser. At Manuel Belgrano the system uses water drawn from refrigeration towers, while at San Martín the water will be pumped directly from a nearby river. Also, the San Martín plant has a quay for unloading liquid fuel from boats in addition to unloading facilities for trucks, although it is possible that the final option will be for an oil pipeline.

These differences, along with the separate specifications of two different clients, determined the two designs of the BOP, involving modifications to adjust each of them to the requirements of each project. As a result, Sener's work was versatile and cover all the variations that occured in the design of a combined cycle system.