



Delivery of coal-fired power plants supports stable power supply in mining-giant Chile

Located on the Pacific Ocean side of South America, Chile is a long and narrow country that stretches some 4,000km north to south, with one end nearby the equator and the other close to Antarctica.

While it is known for its delicious wines, it is also a mining giant with the world's largest output of copper.

MHI delivered some coal-fired power plants to Empresa Eléctrica Guacolda S.A. in Chile, which are currently providing electric power in Huasco, approximately 700km north of the nation's capital, Santiago.

We heard from members of the Guacolda Project Team at Yokohama Machinery Works, which was responsible for the delivery of the No. 3 and 4 units in 2009-10.



Construction work underway on the No. 4 unit. The construction site was on an extremely hard bed of rock – a hurdle for the foundation work that had to be overcome by means of construction blasting.

Q. Could you give a brief outline of the project?

A. It involved delivery of two coal-fired power plants to the Chilean electric power company, Empresa Eléctrica Guacolda S.A. The boilers and local construction work were handled by the Yokohama Machinery Works, while the Nagasaki Shipyard & Machinery Works was responsible for the steam turbines and condensers. The plants were both 152MW, and boast the largest electrical output of anything put together by the Yokohama Machinery Works to date. In addition, Selective Catalytic NOx Removal (SCR) system and Flue Gas Desulfurization (FGD/Limestone Gypsum process) system that absorb and remove harmful substances from the exhaust gases are both firsts for coal-fired power plants in Chile and strictly comply with environmental regulations.

Q. Why expand thermal power generation?

A. Until now, hydroelectric power generation had been mainstream in Chile, but because it is at the mercy of the weather, the last few years have seen movement towards thermal power generation fuelled by natural gas and coal. Being a mining giant, Chile needs a great deal of electric power to refine its copper. As demand for power increases in step with strong economic growth, a stable supply of power is being sought, which has led to a rapid increase in demand for coal-fired power generation.

Q. What excited you most about delivery of the No. 3 and 4 units?

A. Delivery of the first two units from MHI took place roughly ten years ago and the client has been extremely pleased with their performance, which led to their placing of further orders for the units we have just delivered. Having inherited that legacy, we focused on working as one for a common objective of delivering an even higher performance plant by the promised date, and as a result were able to deliver the No. 3 and 4 units more than a month and a half ahead of schedule. Needless to say, the client was very happy.

Q. What comes to your mind when thinking back on the project?

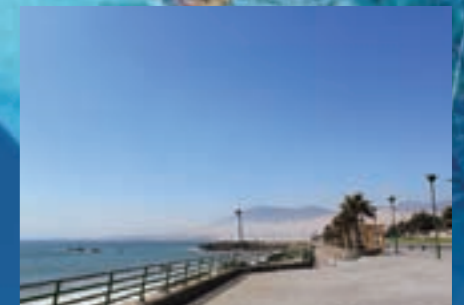
A. The massive earthquake that rocked Chile in February 2010 happened while the project was still underway. The power plants were about 1,000 km away from the epicenter, so there was no direct damage, but the earthquake did affect power transmission lines, with many being severed and causing lengthy blackouts. The No. 4 unit was undergoing testing and was unable to generate power, and for a while there we were uncertain as to just when the situation might recover. But through repeated daily discussions with our client late into the night, we were able to overcome the adverse circumstances in which we found ourselves. The safe delivery of the plants speaks of the good relationship we have built with our client and the fantastic effort given by all of the staff involved.



The No. 4 unit is equipped with SCR system that meets Chile's environmental regulations. It is the first coal-fired power plant with this in the country.



All staff gather for a photo during the project's peak period. The local staff were very happy to be involved in the MHI project.



Huasco city, 15 minutes away from the power plants, is a small harbor town in a distant land roughly 40 hours flight away and exactly on the opposite side of the world from Japan.

