



## ENVIRONMENT

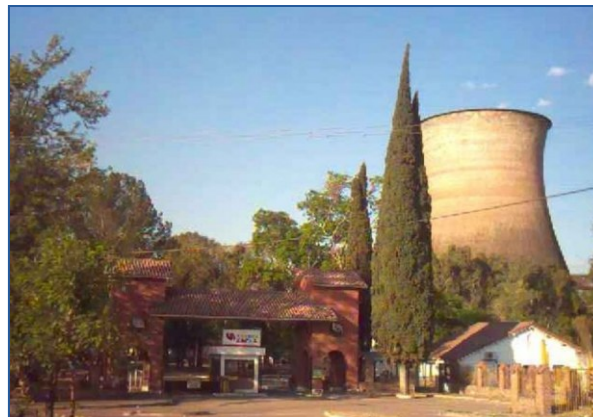
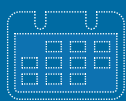
Zapla Steels Limited Company (Aceros Zapla S.A.) is an integrated steel company, incorporated entirely by Argentine capital, which produces special steels and construction steels, intended for a wide variety of applications.

Its industrial plant is located in the city of Palpalá, Jujuy, occupying an area of 114 hectares, where the different production plants, the service infrastructure and the final waste disposal area are installed.

The covered area, consisting of the steelworks, rolling mills and forging and the auxiliary facilities that complement them, reaches over 150,450m<sup>2</sup>.

## Oxygen Injection System for Ovens

Steel Plant | Zapla Steels | Praxair | Jujuy | Argentina.


**PRAXAIR**
**ACEROS  
ZAPLA S.A.**


EXECUTION



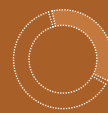
WEEKS



WORK TEAM



ENGINEER/TECHNICIAN



COMPOSITION

 40% ↓ PLC  
 60% ↓ HMI

DETAIL

2010

## PROCESS

Praxair Coherent Jet Technology (CoJet™) was designed and developed to perform efficient and effective decarburization when used in electric arc furnaces (FEA). In this way, the need for handling old lances by furnace operators, consumable tubes, mobile supersonic lances, and the costs and maintenance associated with these systems, are eliminated. It combines the functions of cutting/decarburization, burner and injection of coal fines in a single compact equipment that is mounted on the side wall of the furnace.

The system operating in steel mills with electric furnaces (FEA) has shown countless advantages over conventional systems, including:

- Elimination of the need to operate lances in the furnace door; no cost to operate the lances and no moving parts in them.
- Injection automation (based on the KWh / ton ratio), without dependence on the operator.
- Uniform supply of chemical energy (burners + lance + PC) inside the furnace.
- Reduction of the oxygen concentration around the slag gate area.
- Less damage to the refractory because the flow of oxygen per injector is less than that of a traditional door lance.
- Fast decarburization and lower oxygen consumption due to the more effective and efficient use of the furnace.
- Improvement in the continuous formation of foamy slag with very low carbon injection.
- Reduction of the erosion of the refractory, of damages to the electrodes, and of the maintenance of the lances.
- Decreased arc resistance due to better foaming, providing higher average power (around 10%) for fusion.
- The slag door can be kept closed, which reduces air infiltration.

## COMPLETED TASKS

In this case, the Praxair team was assisted in the Commissioning of the system, with the following tasks:

Precommissioning, Commissioning, PEM and Performance test:

- Survey of general information.
- Supervision of Commissioning of Auxiliary Systems.
- Generation of entry and exit lists.
- Development of control logics.
- HMI system development.
- Configuration of ethernet communication links.
- Tests of control loops.
- Signal tests.
- Test of protections and alarms.
- Point-to-point system tests.
- Implementation of an automatic control system.
- Setting up.
- Test Run.
- Operation of the plant.
- Production tests.
- Training of plant operators and personnel.



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