Technical Features

- Type: Continuous Mill of 18 mill stands, an outlet to cooling bed and bar evacuation
  The mill is composed of:

    - 1 Heating furnace of 80 Tn/h
    - 6 Roughing mill stands 3H & 3V
    - 6 Intermediate mill stands 3H & 3V
    - 6 Finishing stands 5H & 1V
    - Cutting shears
    - Outlet roller table, cooling bed and bar evacuation system
    - Wire rod block, laying forming device, lay cooling R.T. and coil carroussel handling.

- Incoming material: square billets

    - SECTION: 120 x 120 ÷ 160 x 160 mm
    - LENGTH: 6.000 mm ÷ 12.000 mm

- Finished product:

    - Bar: 8 to 32 mm, diameter
    - Wire rod: 5,5 to 14 mm

- Product length:

    - Rebars (corrugated):   6 ÷ 12 m
    - Wire rod: 2,3 ton max

- Product speed:

    - Bar: 14 m/sg
    - Wire rod: 80 m/sg (5,5mm)

Main Control Pulpit

Electrical Process Description

- The electric and automation equipment to be installed in said plant, includes the following main sections:

    - 22/0,4 kV Indoor Electrical Substation, power distribution and power factor correction at 20 kV.
    - AC and DC equipment, drive equipment with corresponding motors, digital technology DC thyristor converters for the mill stands and shears main drives. AC/AC converters for variable speed auxiliary drives.
    - Automation Systems: Control PLC's, remote I/O units, HMI operator stations, control desks.
    - Auxiliary equipment: field sensors, etc.

- The Integrated Control System topology is configured as a flexible distributed control incorporating PLC's, I/O's remote units, operator stations and HMI displays, interfaced through an industrial TCP-IP Ethernet network of 100 Mb/s and local networks type INTERBUS, PROFIBUS, etc.

  The control systems incorporate state-of-the-art Pentium processing units with high dynamic response designed to suite the process requirements.

  The master speed control system (master mill) is a dedicated PLC that calculates the speed references for each one of the continuous rolling mill's drives (stands, pinch-roll, shears, roller tables, etc). This system executes the following main control functions:

    - Speed reference for stands / other motors
    - Minimum voltage between Rolling Mill Stands
    - Regulation of loop position between stands
    - Impact speed reference
    - Speed reference in jogging mode (slow)
    - Master speed reference
    - Speed adjustments in simple or cascade mode
    - Continuity control between stands
    - Control of dummy bar (testing)
    - Elaboration of cutting commands (trimmings, cut to legnth)
    - Cut optimization