Scope of Supply

Ingeteam Industry S.A. is responsible for complete turnkey of the electrical project:

- Project Management.
- Basic and Detail Engineering.
- Supply of the following equipment:
  - Low voltage distribution at 525 Vac for DC Drives.
  - DC Rectifier & DC Drives (DCS 800) from ABB.
  - Reuse of existing DC motors.
  - AC auxiliary speed motors.
  - AC MCC for fixed speed drives.
  - Uninterruptable power supply.
  - Sensors and peripherals devices.
  - Control desks and local panels.
  - Simatic PCS7 distributed control system from Siemens.
  - Operation and Supervision system in PCS7 from Siemens.
- Spare parts.
- Erection Supervision.
- Commissioning.
- Training.

Electrical Revamping of Skin Pass Mill Nº1
OUTOKUMPU TORNIO (FINLAND)

After-Sales Services

- Hotline Service.
- Spare parts in 24 hours.
- Direct line with our technical staff.
- Remote communication from our offices to the factory automation network.

Ingeteam Industry

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Project Description

Outokumpu Tornio awarded a contract to Ingeteam to modernise the electrical equipment of the Skin Pass Mill (SPM1 - 2 High) in the Cold Rolling Plant (Finland). Due to an aging and obsolete electrical and automation equipment, the company decided to realize the revamping, which also included completely new hydraulics, with the goal of:

- Assuring zero electrical breakdown.
- Automating the mill with updated systems.
- Providing a supervision and monitoring interface to the operator.
- Implementing the current practices of machine safety.

CMI has been awarded as mechanical supplier for the revamping of the SKP Mill and Media systems (Lube, Hydraulic equipment, etc).

The mill features a 2-High Mill stand with 850 mm work roll diameter, providing a roll force of 2 x 8000 kN. Two reversing reels provide the means of uncoiling / coiling operation of coils up to 30 Ton.

Additionally, the mill is also equipped with entry and exit coil conveyor and coil cars, paper coolers, guiding tables, belt wrapper and media systems.

Main Technical Characteristics

- **Mill type:** 2-High Tempering (reversing) Mill (Schoeemann) 1976
- **Material to be rolled:** Coils cold-rolled processed in APL or AL (ASIS 300 & 400 series)
- **Strip width max.:** 1630 mm (original 1350)
- **Strip width min.:** 950 mm
- **Strip thickness:** 0.3-0.8 mm
- **Yield strength:** 300-850 N/mm²
- **Rolling speed:** 0-200/500 m/min
- **Normal accel/decel rate:** 0.416 m/s² (20 sec)
- **Quick stop:** 0.7 m/s² (10 sec) electrical braking with tension control
- **Emergency stop:** 1.67 m/s² (4 sec) power off and stop by DB resistor use.
- **Strip Tension:** 12-240 kN (for OD 2200 mm with reduced tension)
- **Rolling force:** 2 x 8000 kN
- **Coil inside diameter:**
  - min.: 610 mm
  - max.: 1800-2200 mm
- **Coil weight max.:** 26-30 Ton.
- **Work roll diameter:**
  - max.: 850 mm
  - min.: 800 mm
- **Interleaving paper shall be included in all passes.**

Control Diagram

Line Diagram