

KUBAL – Aluminium Smelter Conversion



SCOPE OF VERKÍS SERVICES

- Management of the project on an EPCM basis
- Project, engineering and construction management. Area and package management
- Feasibility study, front end engineering and layout planning, both overall site planning and facility planning
- Preparing specifications and tender documents, bid review and participation in clarification meetings and contracting
- Procurement of equipment, materials and services
- Logistics planning, from vendors abroad to site lay-down and within the site

DESCRIPTION

The project scope included conversion of the Kubal aluminium smelter, Plant 2, from Söderberg pot technology to pre-baked anode technology and increasing the current from 120 kA to 160 kA. The existing potroom gas extraction, gas treatment system, alumina transport system and compressed air systems were de-commissioned and for the most part removed. New installations outside the potrooms included the following:

- Gas treatment facilities/ducts, including both dry and wet scrubbing
- Alumina transport system between existing alumina silos at the harbour and the pots, via the gas treatment center
- Rectifier transformer units and harmonic filters
- Bath handling facilities, including crusher, cooling conveyor and dense phase piping to storage silos at the potlines
- Anode cleaning facilities and anode transport system between the rodding facilities and the potlines
- Partial equipment renewal and partial equipment refurbishment within the anode rodding facilities
- Compressed air system, including compressor stations and piping
- Service buildings e.g. temporary workshop, sandblasting shop and pot delining facility extension. Various sitework to support facilities
- Potroom roof ventilators
- HV and MV power distribution to new facilities, including partially new and partially upgraded substations

Potline conversion included re-fitting existing pots, installation of new pot superstructures, alumina pot-feed piping, pot-gas extraction duct installation, compressed air piping, potroom service cranes, pot tending vehicles and anode raising beams, and refurbishment of the busbar system.

PROJECT OVERVIEW

Due to increased requirements regarding environment, effectivity and operability/maintainability, Kubikenborg Aluminium AB decided to convert Plant 2 from Söderberg pot technology to pre-baked anode technology. To increase the current from 120 kA to 160 kA and renew or refurbish various ancillary facilities.

HRV Engineering, a subsidiary of Verkís, was hired to manage the project with a team of its personell and resources from the client.

The client team was responsible for the pot conversion.

CLIENT:

Kubikenborg Aluminium AB
Sundsvall, Sweden

LOCATION:

Sundsvall, Sweden

PERIOD:

2006-2009

SCOPE SUMMARY:

- Number of relined pots: 262
- Pot current: 160 kA
- Production capacity: 120 ktpy
- Gas treatment center
- Potgas ducting
- Alumina transport system
- 3 rectifier transformers
- Harmonic filters
- Bath plant
- Crusher and cooling conveyor
- Anode cleaning machine
- P&F overhead anode conveyor
- Anode pallette conveyor
- Cast iron furnace and cooler
- Rodding equipment upgrade
- 2 compressor stations
- Compressed air piping
- Temporary workshop
- Sandblasting shop
- Pot delining building
- Substations
- Potroom roof ventilators
- Power distribution and substations
- Pot tending vehicles
- Potroom cranes
- Superstructures

