

## Fjarðaál Aluminium Smelter



### SCOPE OF VERKÍS SERVICES

- ▶ Participation in the project as leading partner in HRV Engineering, teaming up with Bechtel Corp. as Bechtel-HRV
- ▶ Feasibility study
- ▶ Engineering in various fields
- ▶ Cost estimation
- ▶ Execution planning
- ▶ Preparation of bid documentation and review of bids
- ▶ Site execution management
- ▶ Site supervision
- ▶ Quality control

### DESCRIPTION

Bechtel-HRV undertook the project on an EPC basis, being responsible for all engineering, procurement and construction, as well as overall project management, including management of external contracts.

The smelter was designed using AP36 technology from Aluminium Pechiney, with a total of 334 reduction pots and a total production capacity of 345 ktpy.

In addition to the two potlines with associated overhead pot tending machines, alumina conveying system, pot-gas extraction ducts, compressed air pipes and pot control system, the following main ancillary facilities were included:

- Alumina unloading, storage and handling facilities, including vacuum ship unloader, alumina and aluminium fluoride silos and alumina conveying system from the silos to the gas treatment centers
- Gas treatment centers (dry) and associated ducting
- 220 kV gas insulated switchgear substation, main distribution system and rectifier transformers with harmonic filters
- Anode rodding and storage facilities, including butt crushing and bath processing
- Casthouse with rod caster and mill, and sow and ingot casting
- Potline service facilities, including pot tending machine maintenance shop, and potline equipment maintenance shop
- Compressor station and associated piping
- Warehouse and workshops
- Administration and personnel facilities and external road and utilities

Total project order of magnitude was 1.4 billion US dollars. The power to the smelter is produced at the Kárahnjúkar hydropower plant, which has an installed capacity of 690 MW.

### PROJECT OVERVIEW

Following an international competition in the spring of 2003, the contractor, Bechtel Corporation, and the Verkís subsidiary, HRV Engineering, were chosen by Alcoa to design and build a new aluminium smelter in Reyðarfjörður, Iceland.

Design work started in the autumn of 2003 and earthworks in the summer of 2004. The first concrete was cast in April 2005. First hot metal was in April 2007 and the smelter was completed at the end of 2007.

### CLIENT:

Alcoa Fjarðaál  
Reyðarfjörður, Iceland

### LOCATION:

Reyðarfjörður, Iceland

### PERIOD:

2003-2007

### SCOPE SUMMARY:

- Number of pots: 334
- Pot current: 360 kA
- Prod. Capacity: 345 ktpy
- 2 potline buildings
- Vacuum ship unloader
- Alumina and aluminium fluoride silos
- Alumina conveying
- Gas treatment centers
- Gas insulated switchgear
- Rectifier transformers and harmonic filters
- Anode rodding shop and storage
- Bath plant
- Casthouse
- PTM maintenance shop
- Potline equipment maintenance shop
- Compressor station
- Warehouse and workshop
- Potline offices, control room and laboratory
- Administration building
- Gas storage
- Roads and utilities

