

Ausenco demonstrates significant expertise in delivery of turnkey contracts



Shiploading operations at the Antamina concentrate export terminal in Huarney, Peru.

Ausenco has significant experience with bulk-related turnkey projects carried out over the last 25 years, as well as projects in the minerals and metals mining and processing field. The company has completed EPC (engineering, procurement and construction) projects as a prime contractor providing detailed design, procurement and full construction services; as JV (Joint Venture) partner with shared EPC project responsibilities; and as subcontractor to the prime contractor who retains overall project responsibility. In addition, the company has provided design engineering services only (the 'E' component of the EPC contract) directly for the prime contractor.

On another very successful EPC project, Ausenco participated as a full JV partner in the EPC team that worked in a strategic alliance with the owner.

Ausenco demonstrates significant expertise in delivery of turnkey contracts. Ausenco believes that it is always important to complete thorough front end engineering on a project before entering into an EPC arrangement. This will lead to the project being successful and a win-win situation for both the owner and the EPC contractor.

The company considers that the most significant project improvements occur in the early planning, engineering, and construction methodology development.

Because of this, Ausenco believes that engineer-led EPC projects offer significant benefits to the owner due to the fact that it has performed all of the preliminary design and has worked extensively with the owner to develop excellent working relationships and a mutual high level of trust.

A few selected examples of Ausenco's key bulk-related turnkey projects include:

ANTAMINA CONCENTRATE EXPORT TERMINAL IN HUARMEY, PERU

Client: Bechtel International as agent for Compañía Minera Antamina

Timeframe: 1999–2002

Scope: EPC of concentrate export terminal

Services: Planning, design, procurement, and construction

Project value: \$230 million (export terminal only)

Ausenco executed the EPC development of the Antamina Concentrate Export Terminal at Huarney, Peru.

The terminal is capable of annual export of 1.8mt (million tonnes) of copper and zinc concentrates annually. Facilities include receiving tanks for the overland slurry pipeline, slurry dewatering facilities, storage shed for 150,000 tonnes of concentrate, conveyors from the filter plant to the storage building and from the storage building to the shiploader, berth for ships up to 50,000dwt and associated infrastructure.

Ausenco provided project engineering, procurement and construction management services as partner in a joint venture with SSK Montajes e Instalaciones S.A.C., a Peruvian–Chilean contractor to carry out the construction.

The project was executed under a PI (Performance Incentive) Contract where the owner and contractor share underruns and overruns. The contract was completed three months ahead of schedule with an associated budget underrun.

As well, the JV with SSK achieved the best safety record of the 40 contractors on the \$2.3 billion Antamina mine/port project, having exceeded 3.5 million hours of work with only one lost time injury.

The project was successfully constructed to World Bank

environmental management standards.

Ausenco received the Consulting Engineers of British Columbia Award of Merit for this project in 2002.

COLLAHUASI COPPER EXPORT TERMINAL IN IQUIQUE, CHILE.

Client: Compañía Minera Doña Ines de Collahuasi S.A.

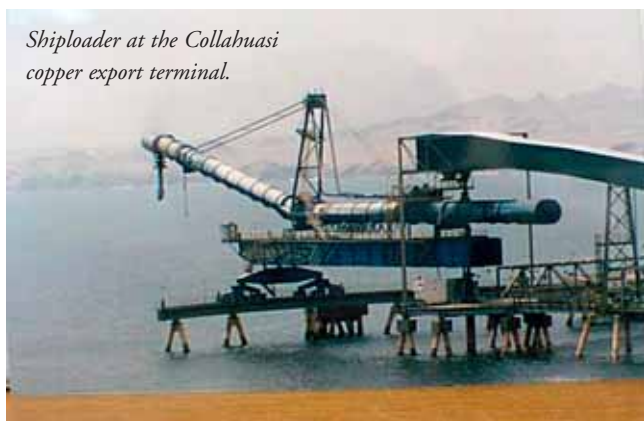
Timeframe: 1996–2000

Scope: Site selection, port feasibility study, EPC development of the terminal

Services: Planning, engineering, procurement, construction

Project value: \$38 million

Ausenco's earlier work on port site selection and feasibility studies led to an EPC contract for 'fast track' design challenged by difficult site conditions and limitations of locally available equipment.



Shiploader at the Collahuasi copper export terminal.

The Collahuasi Copper Mine was developed in northern Chile and at the time was anticipated to be the third largest in the world. The initial production was planned to be 1mt (million tonnes) a year of copper concentrate, which is transported by slurry pipelines to the port. The facility can accommodate vessels up to 60,000dwt.

The irregular underwater bedrock profile and the presence of large boulders made pile installation very challenging. Overcoming the lack of any substantial overburden, the required pile design capacities were innovatively achieved by anchoring pile tips into bedrock.

The seismic design of the shiploader illustrates state-of-the-art design approach permitting the shiploader to withstand a seismic event well in excess of the code requirements without significant damage.

This project features the first fully enclosed boom of a quadrant shiploader to contain dust, setting new standards for environmental design.

HAMERSLEY IRON DAMPIER PORT EXPANSION

Client: Hamersley Iron Pty. Limited

Timeframe: 1999

Scope: Iron ore export terminal expansion and upgrades

Services: Feasibility study, master plan, cost estimates, simulation modelling, definitive engineering and EPC services.

Project value: \$200 million.

Hamersley Iron Pty. Limited is Australia's leading iron ore exporting company with an annual throughput approaching 60mt/year. Its company-owned railroad delivers ore from five mines in the Pilbara region, some 370km, to two



Dampier Port expansion.

terminals in Port Dampier.

Trains consist of 220 ore cars, each of 105 tonnes nominal capacity. The trains are rotary dumped at either East Intercourse Island or Parker Point, where the ore is conveyed to either lump or fines stockpiles for blending prior to shiploading in vessels up to 350,000dwt size.

Following a worldwide search, Hamersley selected Ausenco and Clough Engineering Group, a Perth-based contractor, to form a strategic alliance to provide engineering and construction services for future expansions.

The first task of the alliance was to develop a long-term master plan to define the future expansion possibilities in several stages to an ultimate capacity of 90mt/year (from 55mt/year). The master plan team examined many scenarios for expansion of one or both existing terminals while maintaining the growing throughput.

A key part of the master planning studies involved the analysis and simulation of operations. Extensive simulation modelling was done to test the existing and future operations. The model included the railcar loadouts at six mines, the railroads, railcar dumping, blending, stockpiling, reclaiming, screening and shiploading operations at the two terminals.

The master plan proposed expansion of the existing terminals in several incremental steps to suit the timing of new mine developments and market growth.

Next, the definitive engineering studies were completed, followed immediately by provision of EPC services for the Dampier Port Upgrade Project which also included upgrades and new facilities for both the Parker Point and East Intercourse Island iron ore export terminals.



Iron ore stockpiles at Dampier Port.