



Projects



Client
Freeport-McMoRan/Sociedad Minera Cerro Verde

Location
Arequipa, Peru

Cerro Verde Production Unit Expansion

The Cerro Verde Production Unit Expansion is considered not only world-class, but is also the largest one-time built copper concentrator on the planet. Fluor, having successfully designed and built the original, 108,000 tpd Cerro Verde C1 (debottlenecked to 120,000 tpd) copper/molybdenum concentrator in 2007, was selected to provide engineering, procurement, construction management (EPCM) and commissioning services for the new concentrator as well. The original concentrator design included the use of High Pressure Grinding Rolls (HPGRs) for tertiary comminution, which was the first base metal concentrator to utilize HPGR technology.

The 240,000 tpd Cerro Verde Production Unit Expansion concentrator design is based on conventional copper sulfide flotation unit operations, replicating the C1 process but includes larger process equipment at a separate location on the mine property. The mine is an open-pit copper and molybdenum complex near Arequipa, in southern Peru. The porphyry copper deposit has oxide, primary and secondary sulfide mineralization.

Project infrastructure, designed by others, included a new fresh water pumping/pipeline system; a waste water treatment plant for raw sewage collected from the surrounding communities of Arequipa; a new 500kV-220kV substation and 220kV transmission line; and the tailing handling/distribution and tailing water recovery systems. Cerro Verde also developed as part of the expansion a new leaching pad and the relocation and enhancement of certain other infrastructure.



Client's Challenge

Cerro Verde, an affiliate of Freeport-McMoRan Inc., seeks to triple copper concentrator production at its Cerro Verde mine requiring additional sulfide ore processing capacity. Expansion of the concentrator facilities will increase production of primary sulfide ore and will increase annual production of copper and molybdenum concentrates beginning in 2016.



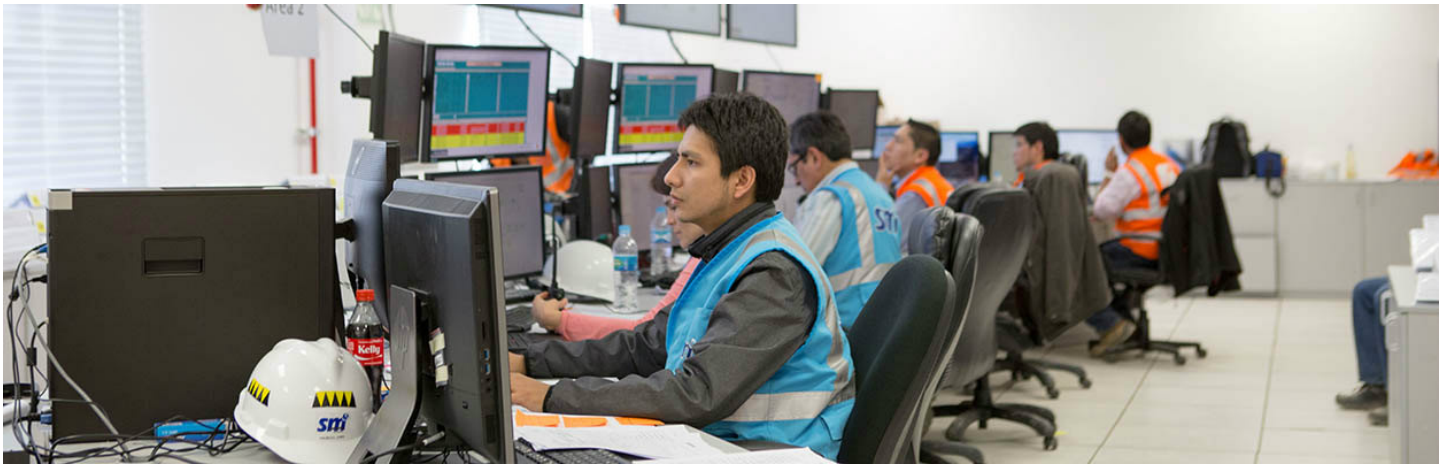
Fluor's Solution

Fluor commenced the Cerro Verde Production Unit Expansion feasibility study, engineering, and procurement services from its Vancouver, Canada office in May 2010. The company's office in Lima, Peru supported the project's construction management operations.

Fluor's scope of services included EPCM and commissioning for the new copper concentrator. Fluor was also responsible for procurement, construction management and commissioning for the freshwater pumping/piping system, the waste water treatment plant, tailing starter dam and the tailing handling/distribution and reclaim water recovery systems that were designed by others.

The power supply and distribution systems were performed by a third party under an EPC agreement with Fluor responsible for Construction Management and Commissioning.

Fluor leveraged its project knowledge and Peruvian project execution experience, gained from the original Cerro Verde concentrator project, which is considered one of the industry's most cost-effective concentrator plants.



Conclusion

The phased start-up of the new concentrator commenced on September 1, 2015 on schedule. The start-up of the last of 6 grinding circuits commenced ahead of schedule in November 2015. First ore was pulled in late 2015, followed by project mechanical completion in March 2016.

[Read more about the sustainability achievements on the Cerro Verde Production Unit Expansion.](#)

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