



Alto Maipo Hydroelectric Power Project

Location: San José de Maipo, Chile

Date: 2015 - Present

Structure: Water conveying tunnels and powerhouse caverns

Length: Approximately 41 miles (66 kilometers) of TBM and Drill & Blast tunnels

Cross-Section: Circular / horseshoe / ovoid with diameter ranging from 15 to 25 feet (4.5 to 7.7 meters)

Geology: Stratified sedimentary and volcanic / volcanoclastic rocks (limestones, shales, sandstones, conglomerates, gypsum, andesites, tuffs, volcanic breccias) intruded by andesitic and dacitic veins and dikes and small intrusive granodioritic bodies

Cost: Approximately US \$770 Million

Client: Alto Maipo SpA

Owner: AES Gener



Figure 1. Drill & Blast VA4 heading of the Alfalfal II tunnel



Figure 2. Portal of the VA1 heading of the Alfalfal II tunnel

Independent Engineering Review Services:

The Alto Maipo Hydroelectric Power project comprises the design and construction of two run-of-the-river hydroelectric plants arranged in hydraulic sequence located in the high-altitude area of the Maipo River basin, 50 km southeast of Santiago, Chile in the municipal district of San José de Maipo.

The project will capture flow from the Colorado river basin in the north and the Volcán and Yeso river valleys in the south. The majority of the works will be underground, including powerhouse caverns, headrace and tailrace tunnels, access tunnels, surge and pressure shafts and other water adduction systems. The tunnels of the project will be excavated mostly in volcanic and volcanoclastic rocks under high hydrostatic pressure and ground cover reaching 6,500 feet (2,000 meters). Upon completion, the power plants will be capable of generating a combined total output of 531MW of electricity.

Gall Zeidler Consultants (GZ) is providing independent engineering review for the design including calculations, final support requirements and geologic conditions expected during tunneling.