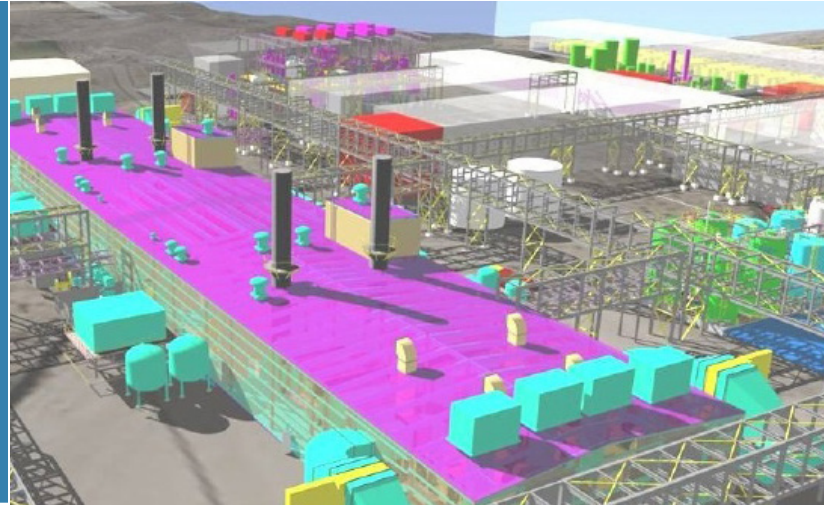


MP Materials Combined Heat and Power Plant



CLIENT PROFILE

MP Materials Corp.* (NYSE: MP) is one of the world's leading manufacturers of custom engineered rare earth and rare metal products. MP Materials produces custom engineered materials from thirteen different rare earths and seven other metals. These rare earths and rare metal materials are critical inputs in a wide variety of applications from electronics to defense technologies. The Mountain Pass Rare Earth Facility in California was originally built in the 1960s and in 2011, construction began to expand and modernize Mountain Pass to be the world's most technologically advanced, energy efficient, and environmentally friendly rare earth production facilities.

PROJECT HIGHLIGHTS

Thermo Systems, in parallel with serving as the overall Mountain Pass Facility automation partner, served as the systems integrator for the Combined Heat and Power (CHP) plant. The CHP plant will provide electricity and steam to the new buildings located at the Mountain Pass mine site. The new plant includes two Solar 7.5MW combustion-turbine generators (CTG), each with a dedicated waste heat recovery steam generator (HRSG). One of the challenges was the complex integration with the CTG vendor Load Shed Panel which determines if the plant has enough available power to start a new piece of equipment. If not, the Load Shed Panel will signal the Power Monitoring PLC to inhibit the associated piece of equipment.

In addition to a redundant Allen Bradley ControlLogix Balance of Plant (BOP) PLC panel, Thermo installed a Power Monitoring PLC panel to control and monitor the CHP switchgear and electrical systems. To complete this successful integration we installed a GEs iFix software platform for the supervisory control and data acquisition (SCADA) system. Finally, all collected data is then sent to a corporate OSi Pi Historian.

TECHNOLOGY HIGHLIGHTS

- Allen Bradley ControlLogix Balance of Plant (BOP) PLCs
- GE iFOX SCADA software
- OSIssoft Pi System historian

RESULTS

The new CHP plant allowed MP Materials to operate in island mode, completely disconnected from the utility grid which was miles away, giving them greater stability and reliability. Thermo Systems continues to furnish MP Materials with construction automation services and onsite maintenance support.

**MP Materials was previously known as Molycorp (MCP)*