

MP Materials Site-Wide Automation Implementation



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 produced a variety of rare earth products, including the heavy rare earth europium for color televisions. In 2011, construction began to expand and modernize Mountain Pass to the world's most technologically advanced, energy efficient, and environmentally friendly rare earth production facilities, requiring a large-scale industrial control system for the various mining, power generation, utilities, and chemical processes active at the plant.

PROJECT HIGHLIGHTS

Thermo Systems partnered with MP Materials in 2009 as the Automation Engineer of Record to develop the Automation Master Plan (AMP) to define naming conventions, instrument/cabling standards, IT infrastructure, software/communication specifications, PLC/SCADA programming standards, security plan, and risk analysis. Thermo Systems designed, tested, and commissioned over sixteen (16) ControlLogix Redundant PLC pairs, one-hundred thirty (130) remote I/O panels, seventy-five (75) local PanelView Plus OITs, seventy (70) Allen-Bradley Intellicenters, over fifty plant floor GE iFIX SCADA plant floor workstations, and an intricate IT network collection of dozens of redundant Cisco IT grade network switches, redundant data servers, PI historian application, domain controllers, and a data diode for increased network security. This robust industrial redundant network was built first in separate islands of automation and fully integrated into a site wide system over an aggressive eighteen month schedule. The team included twenty-five (25) highly skilled automation engineers supporting commissioning efforts round the clock.

TECHNOLOGY HIGHLIGHTS

- Allen Bradley ControlLogix Redundant PLCs
- Allen Bradley CompactLogix PLCs
- Allen Bradley PanelView
- GE iFIX SCADA
- OSIsoft PI System historian
- Cisco Catalyst IT switches

RESULTS

The automation master plan created by Thermo Systems developed the standards for all disparate automation platforms on the mine site. Thermo Systems continues to support MP Materials with their investment to their already technologically advanced assets installed at their Mountain Pass Facility. With more innovative chemical processes being implemented for continued rare earth mineral demands, MP Materials's ongoing partnership with Thermo Systems ensures continuity and seamless integration of new automation projects.

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