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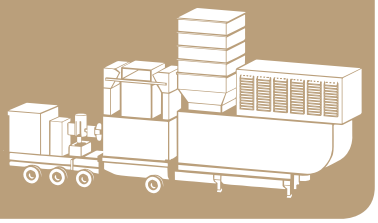
Industrial Power | Case Study

New Caledonia

At a glance

60MW TM2500 gas turbines



- 60MW OF CONTINUOUS POWER AVAILABILITY JUST 30 DAYS AFTER EQUIPMENT ARRIVAL
- POWER-DENSE, CLEAN-BURNING TURBINES MET STRICT EMISSIONS, ENVIRONMENTAL REQUIREMENTS
- PROJECT DEMONSTRATED VERSATILITY OF MOBILE TURBINES, SUITABILITY FOR INDUSTRIAL APPLICATIONS

Challenges

- IMMEDIATE POWER NEED FOR ENERGY-INTENSIVE MINING OPERATION
- LIMITED FOOTPRINT FOR GENERATION EQUIPMENT
- RIGOROUS ENVIRONMENTAL AND EMISSION REQUIREMENTS

Background

The French territory of New Caledonia has a 150-year history as a mining center, and it currently is one of the world's leading producers of nickel. In December 2013, one of South Pacific's largest mines suffered a breakdown of the combustion turbine generation system used for back-up power. In early 2014, the mining company issued a request for solutions ranging from 20MW to 80MW that could provide continuous power in island mode, meet strict European Union emissions requirements and be operational just 30 days after on-site arrival of plant equipment.

Solution

In February 2014, APR Energy was contracted to supply 60MW of generating capacity using three aeroderivative mobile gas turbines. The fuel-flexible turbines would allow the customer to generate power using diesel fuel with the ability to seamlessly switch to natural gas, if available. The power density of the turbines was another important benefit, as they fit within the challenging space constraints at the mine site and required just one-third of the land that would have been needed for 60MW plant using reciprocating engines. In April 2014, APR Energy commissioned the plant – equipped with continuous emissions monitoring systems – within the required 30-day timeframe.

Outcome

The New Caledonia plant was APR Energy's largest industrial power solution at the time, and the full turnkey solution included engineering, procurement, construction, installation, operations and maintenance. During its 18 months in operation, the plant demonstrated the versatility that mobile gas turbines offer customers, and the technology's suitability for energy-intensive industries as well as electric utilities. Ultimately, the mobile turbine solution provided the best balance of emissions control, footprint and fuel efficiency – all critical factors for this mining customer.

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