



Flange-to-Flange Solution - 7FA

Flange-to-Flange Gas Turbine Upgrade in Japan Helps Chubu Electric's Chita Daini Power Station Meet Peak Season Power Needs

Customer Opportunity/Challenge

Chubu Electric shut down its plant operation at Hamoaka Nuclear Power Station following the March 2011 natural disaster. The electricity lost from the shutdown put an urgent focus on current capability and upgrade options of their gas turbine fleet.

Solution

The GE project team worked closely with Chubu Electric's Thermal Power Department to develop a flange-to-flange replacement solution that met multiple plant objectives.

Chubu Electric had several older technology 7FA.01 gas turbines where upgrades could have been applied. However, migrating the unit to the more efficient 7FA.03 addressed multiple plant objectives with a single upgrade.

Results

The 7FA.03 flange-to-flange gas turbine replacement was completed on schedule, enabling Chubu Electric to supply increased power to the grid for the summer peak of 2012 and beyond. This solution also provided improved efficiency, reduced maintenance costs, and lower emissions while renewing the gas turbine life for the next 20 years. The benefits of this upgrade paved the way for migration of additional units at Chubu Electric.

The [Flange-to-Flange Solution](#) allows customers to incorporate all the latest turbine technology at minimal disruption to plant operations by replacing the entire gas turbine engine. The term "Flange-to-Flange" is used because the entire engine from inlet flange to exhaust flange is replaced as one piece. In addition to increased output and efficiency, Flange-to-Flange replacement can be a cost-effective solution to address multiple needs at once—such as asset life extension, performance recovery, rehabilitation, emissions controls, and fuel flexibility.

CUSTOMER VALUE

- Hot Day Performance
- Improved Heat Rate
- Renewed Turbine Life
- Maintenance Cycle Reduction
- Reduced Emissions

