

Combined Cycle Power Plant Reduces Turbine Downtime with the Fisher™ Type EZH Fuel Gas Regulator

PROVEN RESULTS

- Eliminated combustion turbine trips
- Improved uptime and unit reliability
- Significantly reduced regulator maintenance costs
- Improved operational efficiency

CUSTOMER

One of the largest electricity producers in the United States

Site: A combined cycle electric generating plant with 1800+ MW capacity

APPLICATION

Combustion turbine fuel gas pressure control

CHALLENGES

The existing boot-style fuel gas regulators required two or more rebuilds per year due to hydrocarbon impregnation of the elastomeric pressure controlling element, commonly called a boot. In addition to high maintenance costs, the plant experienced pressure swings during the ramp up of the combustion turbines. The pressure swing caused the secondary run to open and attempt to control. The two parallel runs would fight each other and in some instances, this unstable pressure control led to costly turbine trips.



Combined Cycle Power Plant



Type EZH Pilot Fuel Gas Regulator

SOLUTION

A different technology was employed at the power plant by utilizing the Fisher™ Type EZH to overcome the issues experienced with the existing boot-style regulators. The Fisher Type EZH is designed for severe service, making it the ideal product for a fuel gas application where reliability is essential. The PVC coated diaphragm is immune to hydrocarbon impregnation and is not in the gas flow path like the boot-style design. Pressure control is accomplished via trim similar to a control valve which provides excellent turndown and bubble-tight shutoff. The Type EZH trim can also be easily accessed from the top, so the regulator body does not have to be removed from the pipeline during routine maintenance.

The Type EZH has provided the power plant with dependable pressure control without a single unit trip for more than two years. These regulators have also been trouble free during this time and have not required any maintenance.

ECONOMIC ANALYSIS

The power plant was able to realize large savings in maintenance cost and turbine uptime. Tripping a turbine was estimated as 1.5 hours of downtime. At \$0.08/KWH for a 250 MW turbine, the savings are estimated at \$30,000 per trip.



Type EZH top-entry trim design greatly simplifies routine maintenance

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