



Washington, D.C., USA

Facility Summary

Cogeneration Facility
Solar T-70 Gas Turbine
7.5 MW

Cogeneration at the Capitol



AOC CAPITOL COGEN—THERMAL PERFORMANCE TESTING

The facility supplies steam and power to the Capitol Buildings in Washington DC. There is a Solar T-70 gas turbine that exhausts to a Cleaver Brooks HRSG equipped with duct firing. Both the Gas Turbine and HRSG are able to be operated on Natural Gas and liquid fuel (ULSD).

Project Issues

Due to the compressed commissioning schedule, tuning of controls parameters were not able to be finalized. Fuel flow stability from the gas compressors caused periodic breaks in the required facility stability.

Natural Gas Fuel Flow was significantly higher than design.

McHale Contracted Tasks

McHale Contracted Tasks consisted of using the clients' test plan for the overall facility. McHale provided and installed precision testing instrumentation throughout the facility to meet the guidance of the ASME PTC test codes. Conducted performance testing by coordinating operations and all commercially interested parties in the test in accordance with the test plan. Provided detailed analysis and reporting for the testing results. Consulted with our client on the commercial implications of the testing results to allow them to seek compensation where appropriate.

Problem Resolution

Data filtering and statistical analysis were used to prove that given the lack of stability within the commercial tolerances, the corrected performance that was calculated was a reliable and repeatable result.

A thermodynamic audit of the fuel gas meter was conducted using secondary measurement techniques. It was determined that the fuel flow meter was not providing accurate data. Further investigation into the programming of the meter indicated that the meter had been programmed with incorrect calibration constants. Using a conversion factor for the erroneous programming, fuel flow was able to be accurately measured.

Work Outcome

All contracted tasks were completed. The project was able to achieve Substantial Completion.