



Crystal River, Florida, USA

Facility Summary

2 X 1 Combined Cycle Unit
G-Class Gas Turbines
1,640 MW

Citrus County Power Plant



DUKE CITRUS—THERMAL PERFORMANCE & COMMERCIAL CONSULTING

The Citrus County facility consists of two 2 X 1 combined cycles in Crystal River, Florida. It utilizes G class gas turbines and three (3) pressure HRSGs with duct firing for power augmentation. This facility was a new construction which achieved substantial completion in February 2019.

Project Issues

The primary objective was to conduct thermal performance testing of the facility and all major pieces of equipment. A detailed audit of the power and energy transfer throughout the conversion process was required to assess the performance benefits from the contractor and each of the equipment manufacturers.

McHale Contracted Tasks

Develop a test plan for the overall facility and each of the major components to including a detailed thermodynamic model used in the production of correction curves. Those curves were used throughout the thermal evaluation process. Provide and install precision testing instrumentation throughout the facility to meet the guidance of the ASME PTC test codes. Mchale also cross checked station instrumentation with the precision instrumentation to identify and resolve calibration, compensation or water leg issues. Conduct performance testing by coordinating operations and all commercially interested parties in the test in accordance with the test plan. Provide detailed analysis and reporting for the testing results. Consult with our client on the commercial implications of the testing results to allow them to seek compensation where appropriate.

Problem Resolution

Testing showed performance of the facility that did not meet the design values. A detailed accounting process was used to determine the pieces of equipment that were not meeting their design values. Reporting and consultation was conducted in accordance with the project commercial structure to ensure the appropriate deficiencies were identified for the respective pieces of equipment.

Work Outcome

All contracted tasks were completed. The project was able to achieve Substantial Completion and reach financial agreement on all performance deficiencies.