

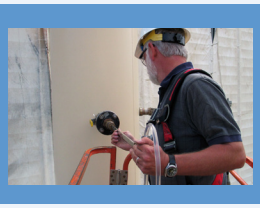


Overall Plant Performance and Component Level Testing

CleanAir's Performance Group routinely provides overall plant and component level testing for contractual acceptance, benchmarking or as required by power purchase agreements.

Our test approach typically begins with the development of a site-specific test plan which allows us to work with each client to address the sometimes conflicting and unique operational, budget, regulatory, and guarantee considerations. The test plan development process ensures that testing will provide meaningful data, particularly in situations where a fully code compliant test is not feasible. The site-specific test plan also provides each client with a tool for early alignment of expectations among all parties to the test and minimizes site preparation delays.

When you choose The CleanAir Performance Group, you get:

- *Un-biased third-party independence;*
- *Professional Test Engineers, with years of practical hands-on field experience in a variety of power applications;*
- *Highly accurate code compliant temporary test instrumentation calibrated and fabricated in-house;*
- *Personnel trained in hazardous goods shipping, with established laboratory relationships for timely analyses of solid, liquid and gaseous fuel samples.*

In addition to full turnkey testing services, we can tailor cost-effective test programs for varying degrees of support including:

- *Test design and uncertainty analysis;*
- *Supply and installation of calibrated instrumentation;*
- *Turn-key rental of test instrumentation; or*
- *Test execution with data transfer.*

When implementing a code level PTC 46 test for combined cycle, coal-fired or biomass units we can simultaneously evaluate individual power block components for benchmarking or performance guarantees. Individual code level component testing can be conducted for the:

- *Combustion turbine in accordance with PTC 22;*
- *Heat Recovery Steam Generator (HRSG)in accordance with PTC 4.4;*
- *Steam turbine in accordance with PTC 6 or 6.2; and*
- *Boiler in accordance with PTC 4.*

Component level testing can be offered as a stand-alone test or combined with any of the complimentary testing services described below.

Thermal Testing Expertise from

CleanAir®
PERFORMANCE GROUP

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Complimentary Testing

Air Emissions Tuning and Testing

CleanAir is well established in the air emissions industry and our combination of thermal performance and air emissions expertise, coupled with our extensive test instrumentation and calibration infrastructure, is unique in the power generation industry. During emissions tuning for a combustion turbine, NOx, CO, and O2 concentrations from the turbine exhaust are measured while engineers adjust the operating parameters of the turbine to achieve the optimal performance of the unit. Air emissions testing can be conducted to establish compliance with air emissions limits set by Federal or State regulations, or guaranteed by the equipment manufacturer.

Noise Testing

In parallel with overall plant or component testing, noise testing can be conducted to ensure compliance with contractual, OSHA, and local noise ordinances. Both near field (OSHA) and far field (plant boundary) tests can be conducted utilizing a Brüel and Kjær Model 2260 Modular Precision Sound Analyzer. This is a real-time analyzer which fulfills the requirements of ANSI S1.40 for Type 1 sound level meters. CleanAir Performance Group personnel are familiar with the guidelines for a variety of test codes including both ASNI B133.8 Gas Turbine Installation Sound Emissions and ATC-128 Sound Code for Cooling Towers.

Heat Rejection Equipment Testing

We are the leading independent test agency for heat rejection equipment evaluations. Any of the following component level evaluations can be conducted in conjunction with overall plant testing:

- *Cooling Tower Performance*
- *Condenser Performance*
- *Pump Performance*
- *ACC Testing*

This seamless synergy between a variety of testing capabilities simplifies contractual hurdles, reduces crew mobilization and equipment shipping costs, and saves time when critical substantial completion milestones are tied to new plant construction. For established units with annual heat rate or capacity testing requirements, this combination of capabilities can provide a cost-effective means of acquiring benchmarking or diagnostic data.

Rising Above our Competition

Our commitment to clients includes a focus on designing project specific tests with the least impact to plant operations. Our commitment to professional and personal integrity ensures strict confidentiality for test data. The CleanAir Performance Group's combination of testing expertise, instrumentation inventory, and calibration infrastructure provide you with the conclusive data you need to make decisions in today's competitive power market.

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