

7FA DRY LOW NOX AND PERFORMANCE SERVICE

Turbine Technology Services creates superior reliability, compliance, efficiency and flexibility for frame 7FAs



Comprehensive DLN Services

DLN Tuning: TTS optimizes DLN-2.6 system operation to maintain emissions compliance over the widest possible ambient temperature range, while also ensuring sufficient margin from both Lean Blow Out and unsafe dynamic levels over the entire low-NOx load range.

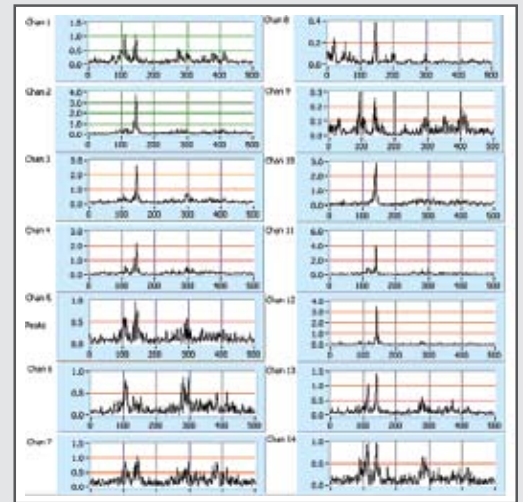
Auto-Tuning: TTS' DLN Auto-Tuning system integrates continuous dynamic and emissions monitoring with an advanced tuning algorithm to automatically feedback tuning adjustments to the turbine controller. Auto-Tuning maintains the DLN system within operator-defined emissions and dynamics limits, and prevents Lean Blow Out as the combustor responds to changes in ambient conditions, changes in fuel conditions, and to degradation of combustion hardware and control valves calibrations.

Operational Troubleshooting: Lean Blow Out and regulatory NOx excursions are common operational problems on DLN-2.6 systems that have been improperly tuned. TTS understands the impact of ambient temperature variation on inducing these problems and establishes tuning criteria to eliminate their future occurrence.

Sometimes a turbine comes out of a scheduled outage with significantly increased NOx, above regulatory limits. TTS will analyze pre- and post-outage turbine performance data to diagnose the cause of the problem and provide short and long term solutions for operations within compliance.

Maximize Load Turndown: Many 7FA DLN-2.6 turbines are commissioned with only 60% load turndown. TTS maximizes turndown while also maintaining emissions compliance. Besides increasing operational flexibility, combined-cycle plants can avoid overnight shutdowns, reducing start/stop cycles and extending hardware life.

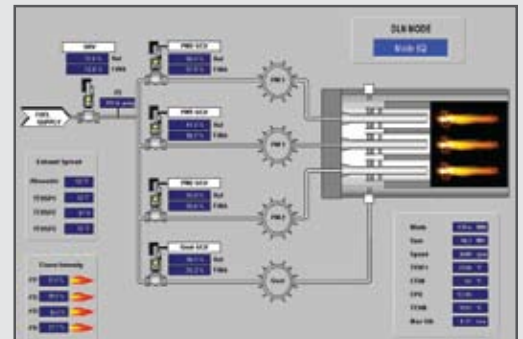
Training: TTS trains you to make simple adjustments to correct minor NOx and dynamic variations.



Comprehensive Performance Optimization

Improved Output and Efficiency: Many 7FA turbines are commissioned with low firing temperatures and with inefficient "maximum" IGV angle. TTS can perform a comprehensive performance analysis of your 7FA, determining the firing temperature "deficit" and optimum IGV setting while defining the achievable output and heat rate improvements. New control curves are implemented while preserving emissions compliance, safe dynamics margin and rated parts lives.

Cold Weather Optimization: To provide cold weather dynamics margin, 7FAs are commissioned with sharply de-rated firing temperature and output at ambients below 59°F. This de-rating often goes beyond what is required to achieve safe dynamic margin and offers the opportunity to appreciably improve output and heat rate on cold days.



About Turbine Technology Services

TTS' engineering staff has 20 years of experience – more than any other non-OEM company – in the design, commissioning, and operation of 7FA DLN-2 and DLN-2.6 combustion systems. TTS' expertise in DLN combustion systems is based on both an in-depth knowledge of the combustor design fundamentals and also on broad, practical field experience from over 65 7FA DLN turbines. TTS is uniquely qualified to improve reliability, assure compliance, and maximize the efficiency, output, and operational flexibility for 7FA DLN gas turbines.



*Gas Turbine Expertise
You Can Count On*

