Today, power plants are faced with aging assets, such as gas turbine control systems. As these original systems become obsolete, or approach obsolescence, they start exhibiting significant failures. The original turbine control system might even be a closed architecture, inhibiting plant operators to diagnose and correct system issues efficiently.

If this sounds like your legacy turbine control system, we are here to help. Our fully integrated gas turbine control solution is an open system that provides the freedom to take true ownership of the operation, improve starting reliability, and prolong equipment life span. Through a recent partnership, ABB's gas turbine solution has been further enhanced with dry low NOx (DLN) control expertise. We understand the importance of technologically advanced solutions to improve unit responsiveness and performance.

Key benefits:
- Maximum reliability and availability
- Reduced maintenance costs
- Avoidance of unplanned outages
- Improved unit responsiveness and performance
- Seamless integration and unified interface
- Scalable solutions, with unparalleled evolution strategy
- Lower NOx and CO emissions
- Increase fuel efficiency
- Prolong equipment life span

A broader portfolio of industry-leading gas turbine control solutions
For several decades, ABB has been one of the world's leading providers of gas turbine control systems that deliver cost efficient solutions. With Symphony® Plus, all this experience comes together in S+ Turbine to take ABB's turbine control offering to a new level of unmatched functionality and performance.

In addition, ABB and Turbine Technology Services Corporation (TTS) have partnered together. TTS offers unparalleled expertise in DLN applications for gas turbine retrofits. Bundling that into the proven S+ Turbine control platform that uses the same hardware, software and tools as your plant DCS provides a very high level of integration, making it easy for you to take ownership of the system.

This partnership also allows ABB to offer a complemented vast knowledge of gas turbines, experience in engineering projects, and cutting-edge engineering solutions that effectively offer the most complete set of skills, reliability, and response leadership to meet the needs of the power plant industry.

ABB and TTS gas turbine control systems are designed to provide the operator with optimum information enabling precision control of the unit via integrated turbine modules and control expertise that perform beyond industry standards.
Advanced gas turbine control solutions
Dry low NOx combustion

Proven products and integrated solutions
By utilizing a fully integrated solution, you experience the benefits of a common platform for the turbine functions including: engineering design standards, engineering tools, and operator graphics. S+ Turbine is a key part of the Symphony Plus technology family, offering a tight integration into S+ Engineering, S+ Operations and S+ Control. A common platform also minimizes the investment needed for back-up hardware, reduces training requirements and eliminates the need for serial interfaces. Additionally, our open architecture allows us to seamlessly interface to any other existing distributed control system (DCS) platform at your plant.

Integrated S+ Turbine modules
High-end turbine protection
– Fully integrated SIL3 rated system
– Overspeed protection at the I/O
– Triple redundant and tested while unit is on-line
Integrated generator auto-synchronization
– Precise matching of frequency, voltage and phase
– On board synchronization check
Industry’s most capable valve positioner
– Fast-acting valve positioner
– Interfaces to all major servo valves, I/H converters, and position feedback devices
Advanced mechanical and electro-hydraulic applications
– Reliably integrated retrofit solutions
– Design, installation, and consulting expertise
Continuous condition monitoring and assessment
– Integrated continuous surveillance of critical assets
– Diagnostic vibration software application

TTS Comprehensive DLN services
Combustion Dynamics and Emissions Tuning
– Real-time analysis of combustion dynamics
– Identification of changes and recommendations for corrective tuning
– Improved reliability, availability and regulatory emissions compliance
DLN Tuning
– Optimize DLN system operation
– Maintain emissions compliance over widest ambient temperature range

Auto Tuning
– Automatically feed back tuning adjustments to the turbine controller
– Maintains the DLN system within operator-defined emissions and dynamics limits

Operational Troubleshooting
– Analysis of pre- and post-outage turbine performance data to diagnose
– Provide short and long term solutions for compliance

Maximize Load Turndown
– Maximize turndown while keeping emissions compliance
– Avoid overnight shutdowns
– Reduce start/stop cycles and extend hardware life

Proven experience
For more than 40 years, ABB has provided control systems for turbine applications. Our main Turbine Automation Center of Competence is located in Natrona Heights, PA. We have provided control systems for all types of rotating machinery including a variety of applications for more than 3200 turbines worldwide, representing over 30 different OEMs. Our turbine control experts average 20 years of experience designing and implementing combustion turbine control systems.

TTS is proud to celebrate over 30 years of engineering excellence and industry expertise, delivering results in the gas turbine and power generation industries. TTS was the first non-OEM to develop and install gas turbine control systems on DLN equipped machines and the first to perform DLN tuning on GE gas turbines. In addition, TTS engineers have extensive field experience working on GE EA and FA gas turbines with DLN combustion systems.

Partnering together, ABB and TTS, for your success.

Symphony Plus, ABB’s total plant automation for the power and water industry. Simple, scalable, seamless, secure.