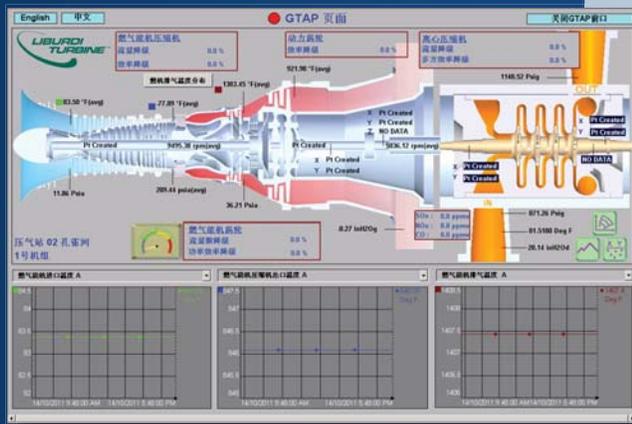# Gas Turbine Health Management
Gas Turbine Performance Analysis & Component Life Analysis

- True On-Condition Maintenance model – optimized service intervals
- Extend service intervals reliably to reduce maintenance costs

## Gas Turbine Analysis Program - GTAP™

GTAP™ is a detailed engine model that can identify power and efficiency degradations - used by engine manufacturers and packagers as well as fleet operators to analyse and predict performance. GTAP™ conducts a stage by stage full gas path aero-thermal analysis to identify internal temperatures and pressures.

Component Life Model - to Optimize Service Intervals

GTAP™ gas path temperatures and velocities are used to derive component metal temperatures and loading of components during a service interval. A metallurgical model is then applied to the component life factors which determine when components need to be removed for repair/overhaul. Life factors may include oxidation/corrosion attack, creep, and low cycle fatigue.

How is GTHM™ used?

GTHM™ replaces traditional "time-based maintenance" - the standard OEM 24,000 Hour service interval for removal of hot gas path components. GTHM™ calculates "equivalent operating hours" by using actual engine operating history stored in the PI data historian to determine the true life of engine components. This allows maximum service interval period leading to significant cost savings while ensuring components will still be repairable at time of removal.
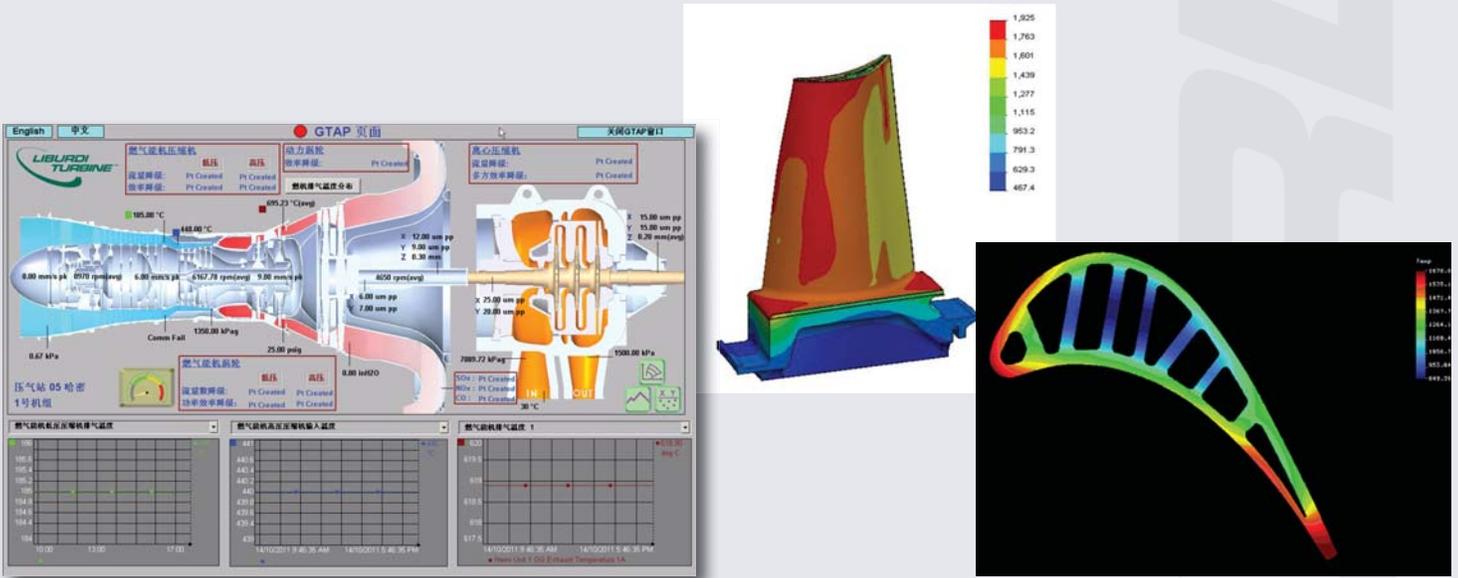
GTHM™ and OSIsoft® PI system have been deployed for all 37 gas turbines operating on a cross-country gas pipeline. The pipeline operates two different gas turbine models, both of which are monitored by OSIsoft® PI system with comprehensive data history and trending, and operated under the GTHM™ on-condition maintenance program to optimize and extend service intervals.

GTHM™ uses the latest OSIsoft® technologies to provide a reliable, robust, and easy to use system. Operators get all the benefits of a PI System application including trending, notifications, and reporting using Microsoft Excel. PI Processbook and PI Web Parts provide an intuitive and informative system interface. The GTHM™ system can be applied to all makes and models of gas turbines including Rolls Royce, GE, Siemens, Alstom and others.

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