

Increase Gas Flow Increase Cash Flow



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White Paper Inlet Cooling for Gas Turbines Driving Gas Gathering Compressors

Turbines Lose Efficiency as Temperatures Rise

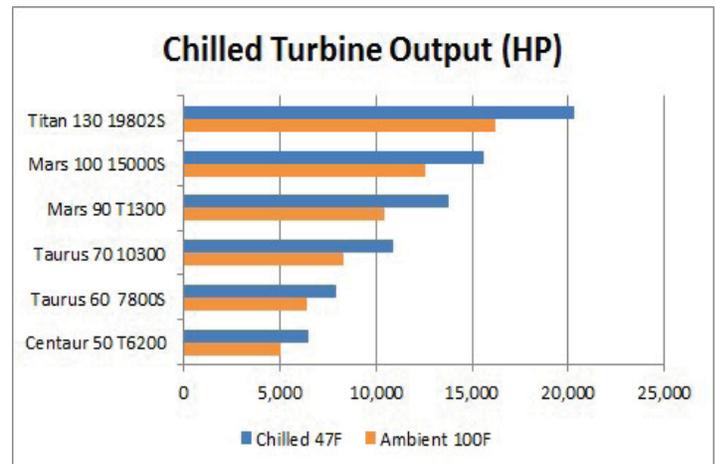
As temperatures rise, your compressor's performance suffers, resulting in lost time and decreased production, ultimately affecting your bottom line. We've developed an inlet cooling process that increases horsepower density and improves production by up to 25 percent, no matter the temperature.

One challenge with modern gas turbines is that they lose significant output and efficiency as air temperatures rise, forcing users to accept lower capacity or add incremental equipment to compensate for this loss. The chart to the right shows the performance of several leading gas turbines used to drive compressors.

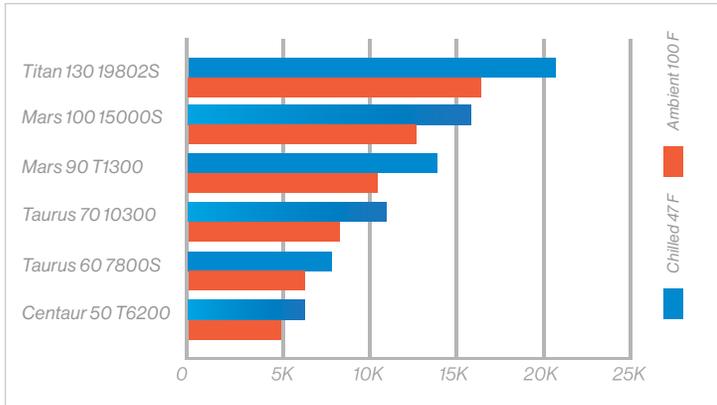
For one innovative integrated oil and gas firm, Petróleos Mexicanos S.A. de C.V. (PEMEX), the opportunity to gain significant incremental gas flow from its existing facilities was very compelling. PEMEX worked with Everest Sciences of Tulsa, Oklahoma to evaluate the potential benefits of providing inlet chilling the existing Solar Taurus 60 gas turbines at its Parédon facility. This evaluation showed a significant value proposition and PEMEX issued an international request for proposals in 2014. Everest and its local partner Equipos Industriales del Golfo (EIGSA) was awarded the contract to supply three ECOChill™ hybrid indirect evaporative chilling systems to PEMEX, in November of 2014 and released to commence work in early 2015.

Indirect Evaporative Cooling

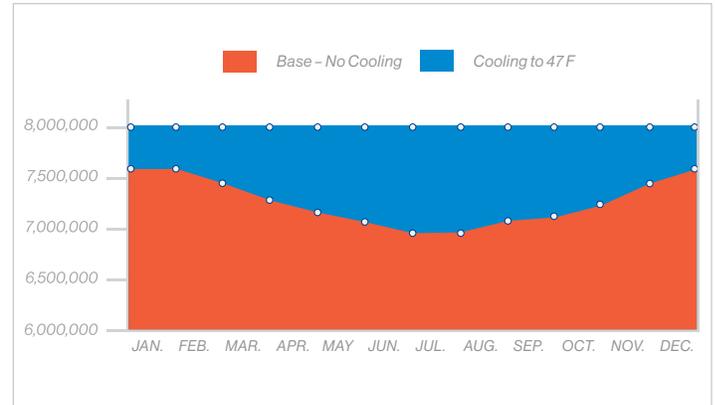
The ECOChill solution is highly efficient due to its novel use of indirect evaporative cooling operating in series with mechanical chilling. For most applications, this solution provides the efficiency of evaporative cooling without using incremental water, while still providing the consistent and guaranteed inlet air temperature of mechanical chilling.



Chilled Turbine Output (HP)



Monthly Lost Production – Taurus 70



Simple Installation and Operation

Modular components are quick to install and require no modification to your gas turbine – meaning you can get back to production quickly. Once our products are in place, you're back in operation – they're fully integrated with your controls and require very little user training and maintenance.

New Compressor Drive Applications

Operating below full system capacity leads to reduced revenue for hot-day delivery. Our breakthrough inlet cooling solution increases horsepower for up to 50 percent less than traditional solutions – with no incremental piping or auxiliary equipment.

Existing Compression Drive System Optimization

Existing pipes, as well as separation and fractionation facilities, can be limited during much of the year. Retrofitting inlet chilling can add 15 to 25 percent more compressor throughput with no modifications to the high-value piping and processing equipment.

