



Firing Temperature Increase upgrade for Siemens Gas Turbines

The worldwide demand for power has grown continuously. Siemens anticipated and reacted to the needs of the market by further developing its combined cycle power plant technologies and providing a full range of energy products and services. Siemens gas turbines are renowned for their high availability and reliability as well as high power output.

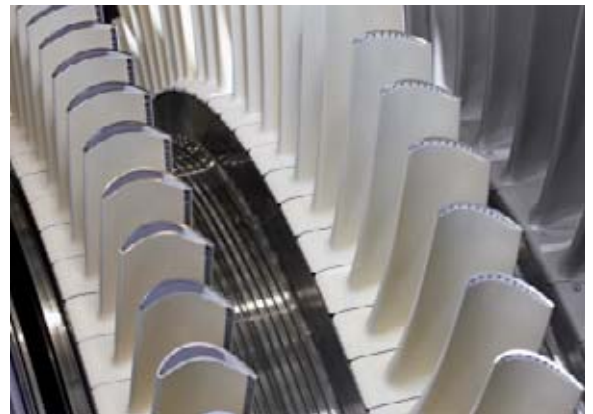
One of the innovative solutions offered by Siemens to help you improve the performance of your gas turbine and thereby your competitiveness is the Firing Temperature Increase upgrade.

Our product

The Firing Temperature Increase upgrade involves the modification of key turbine components, which allows an increase of the firing temperature. This modernization has been designed to help yield a power increase, heat rate improvement and additional exhaust energy. These results are reached by new coatings for turbine blades or by an advanced inner casing design.

Customer benefits

The Firing Temperature Increase upgrade can be a cost-effective means to help you improve the overall performance of your gas turbine plant.



Siemens innovative 3D optimized turbine blades stage 1 and 2

Benefits can include:

- increased gas turbine power output of up to 2.5% in simple-cycle duty*)
- heat rate improvement of up to 0.1% in simple cycle operation*)
- increased exhaust energy for combined cycle operation.

Extending the recommended scheduled maintenance interval from 33,000 to 41,000 equivalent operating hours (EOH) with remaining turbine inlet temperature can be an alternative after the complete implementation of the Firing Temperature Increase modifications.

The modified airfoil profile is state-of-the-art for new Siemens gas turbines of the frame types SGT5-2000E (V94.2) for more than 15 years and SGT6-2000E (V84.2) since 2003.

Performance enhancement programs – gas turbine

Answers for energy.

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Scope of supply

The scope of this modernization includes:

- advanced mixing chamber design
- advanced inner casing design
- Siemens innovative 3D optimized turbine blades and vanes for stages 1 and 2
- improved F-Ring design
- HR3 burners
- control optimization of the corrected turbine outlet temperature.

We recommend the installation of this upgrade be performed at a major outage. Siemens offers a full range of field service capabilities to help you manage your maintenance and outage schedules.

The Firing Temperature Increase upgrade with the above mentioned scope of supply is applicable for the SGT5-2000E (V94.2) and SGT6-2000E (V84.2) gas turbines and may be combined with other Siemens' modernizations.



Blading of turbine rows



New inner casing design

References

Siemens has successfully implemented the Firing Temperature Increase upgrade in one unit of frame type SGT5-2000E (V94.2) in Australia. **)

Within the Siemens' new unit business, more than one million EOH have been logged on the SGT5-2000E (V94.2) and SGT6-2000E (V84.2) operating with this Firing Temperature Increase upgrade. **)

For more information please contact your local Siemens sales representative.

*) actual results may vary

***) as of August 2010

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