Steam Turbine & Generators

Inspection & Fact Finding

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Inspection & Fact Finding

Inspection & Repair Offerings



Inspection & Fact Finding

Fact finding & Trouble Shooting Solutions

System analysis and optimization:
Examine and identify opportunities for improving efficiency, performance, and reliability by the use of Fact Finding, calculation and diagnosis.

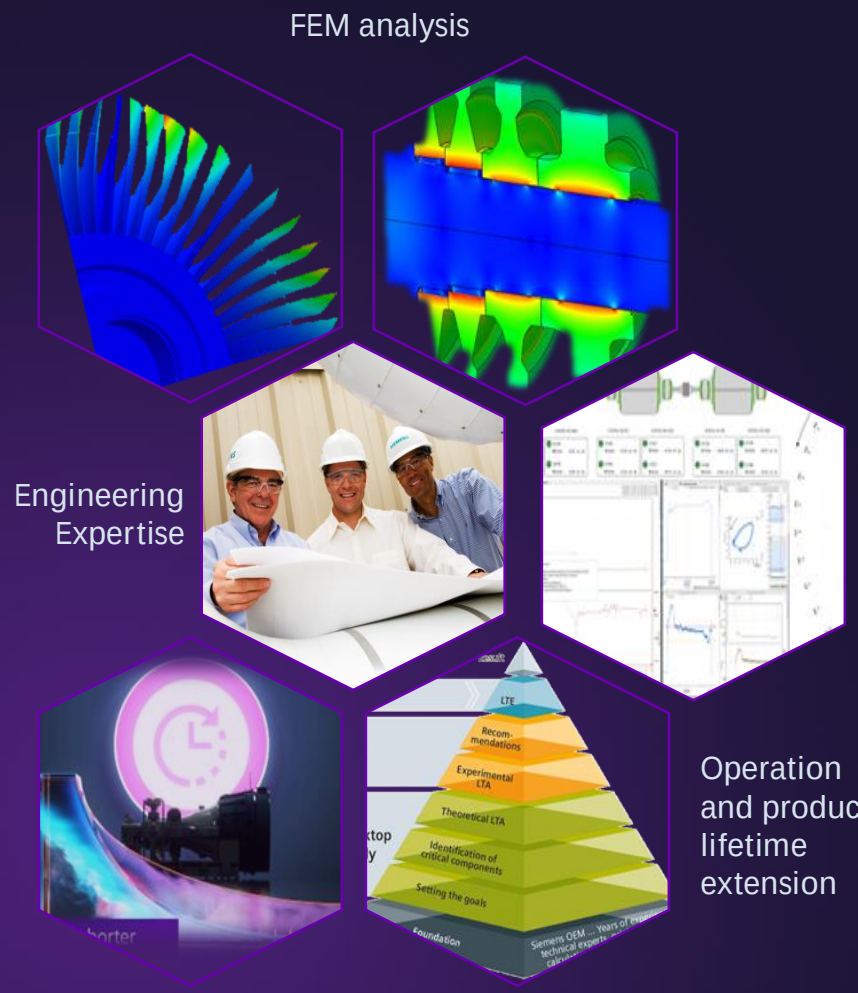
Inspection:
Technical expertise regarding steam turbine design, material selection, control systems, maintenance, and repair.

Energy efficiency and sustainability consulting:
Analyze energy consumption and environmental impacts and provide recommendations for reducing energy costs and CO2 emissions.

Training and knowledge transfer:
Training and knowledge transfer for operations and maintenance personnel to effectively and safely operate your assets.

Technology selection and integration:
Assist in selecting and integrating cutting-edge technologies to maximize the performance and efficiency of steam turbines.

Root Cause Analysis and problem-solving:
Identify and address issues that may arise during installation, operation, or maintenance of steam turbines.



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Repair & Service Solutions

Condition based repair:
We utilize advanced quality methods, finding analysis, and diagnostic technologies to evaluate the turbine components condition to define the correct repair solution

Repair and maintenance:
We provide expert repair and maintenance services to minimize downtime and restore the turbine's performance in collaboration with SE internal engineering and repair experts.

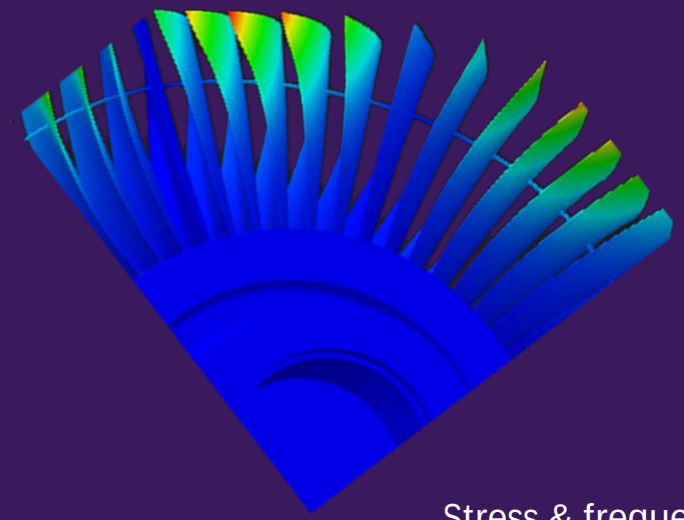
Spare parts and components:
Availability and production of spares and critical components for your turbine to quickly respond to customer issues (e.g. Fast Lane)

Upgrades and modernization:
Retrofit solutions for your turbine for optimized efficiency and performance using different cutting-edge technologies like SLM or LMD.

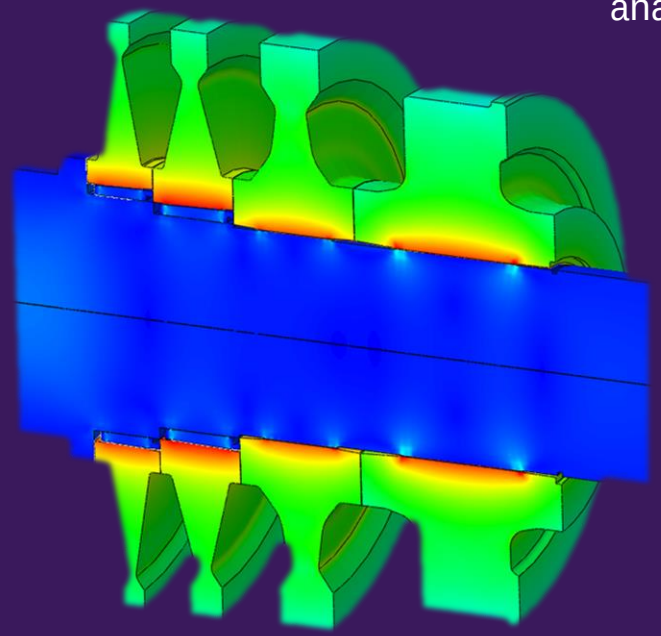
Emergency and backup services:
In case of an unexpected failure, we offer emergency and backup services to quickly restore operation and minimize customer downtime.



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Stress & frequency analysis



Inspection & Repair Offerings

Expert FEM Analysis

Increase your turbine performance, safety, and reliability

Our engineering experts will use FEM (Finite Element Method) analyses to,

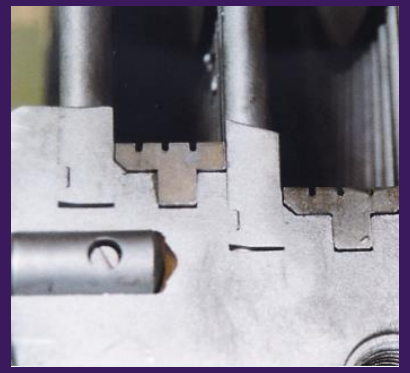
- Assess material and load conditions.
- Describe structural behavior
- Determine unknown deformations, stresses, or flows
- Interpret results: Analyzing the behavior of the structure

Highly suitable to customers looking for

- Material upgrade
- Increase in turbine performance
- Increase in turbine operation safety



Erosion between the LP guide blade carrier rows after approx. 55,000 operating hours



New inserted Chromium Rings in between the guide rows





Last Stage Blade Modifications
for dual operation, increased district heating / power, reliability, rigidity etc.

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Smart Repair & Upgrade

More Operation Flexibility & Protection

Repair innovations and upgrades that protects your turbine and increase its operational flexibility

Chromium rings – helps prevent the risk of,

- Sequential blading damage resulting from loosened seal strips
- Performance losses due to large leakage steam
- Continued material removal

Last Stage Blade Modifications

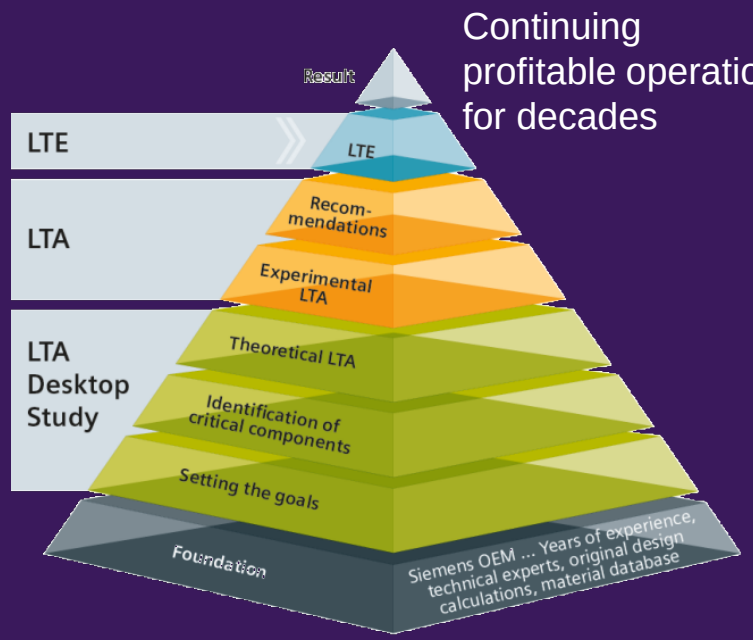
- Helps for prolonged operation in partial load range
- much cheaper compared to the costly expansion of the cooling system

Highly suitable for customers looking to:

- Change their operation conditions like partial load operation etc.
- Have turbines operating in humid / hot temperature regions with poor exhaust vacuum conditions

Inspection & Repair Offerings

Expert Consultancy



Continuing profitable operation for decades

Optimized shutdown process
Minimized wait time with shorter downtimes



Aging steam turbines require your attention!

Our OEM experts offer consultancy and support in,

- Design & upgrade your steam turbine systems
- Recommend ways to optimize performance and efficiency
- Develop strategies for improving system reliability and extend its lifetime
- Resolve operational issues and reduce operation costs
- Upgrade / retrofit existing systems for better performance

Highly suitable for customers looking for,

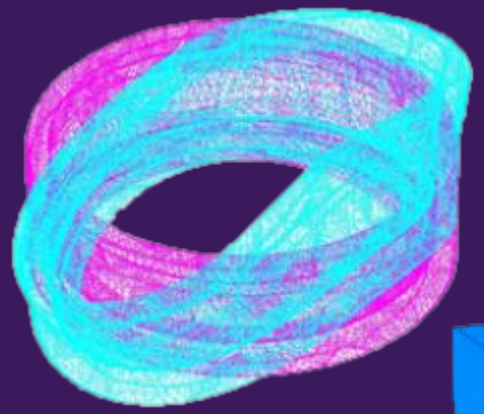
- Increased turbine availability and reliability during the end of its design lifetime stage
- Extension of turbine operating life with limited investment cost
- Increase in turbine performance and efficiency

Fact Finding & Repair Offerings

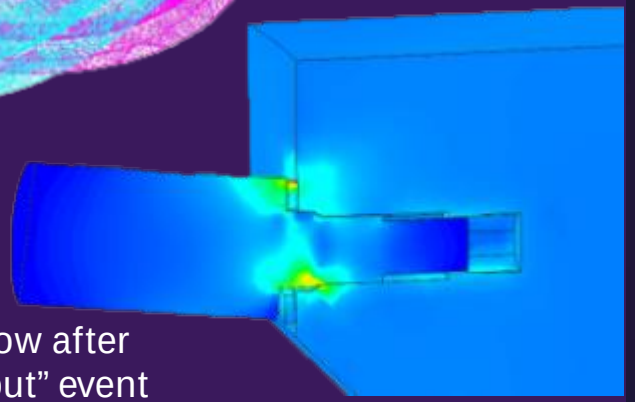
Vibration Diagnostics

Mobile measurement system adapted for Industry Units and raw data acquisition





Rotating L-Ring



Rotor bow after “black out” event

Essential step to detect abnormalities, mechanical faults, misalignments, and imbalances caused from wear

Machinery and system diagnostics combined with field balancing are important procedures for the maintenance and troubleshooting of rotating equipment such as motors, pumps, gears and turbines of course.
They ensure reliability, efficiency, and safety of the equipment and reduce downtime and maintenance costs.

Highly suitable for customers wanting,

- Clarifications of any observed abnormalities / recurring mechanical faults
- To identify potential problems due to misalignments or imbalances

Live Demo

Vibration Diagnostics



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