

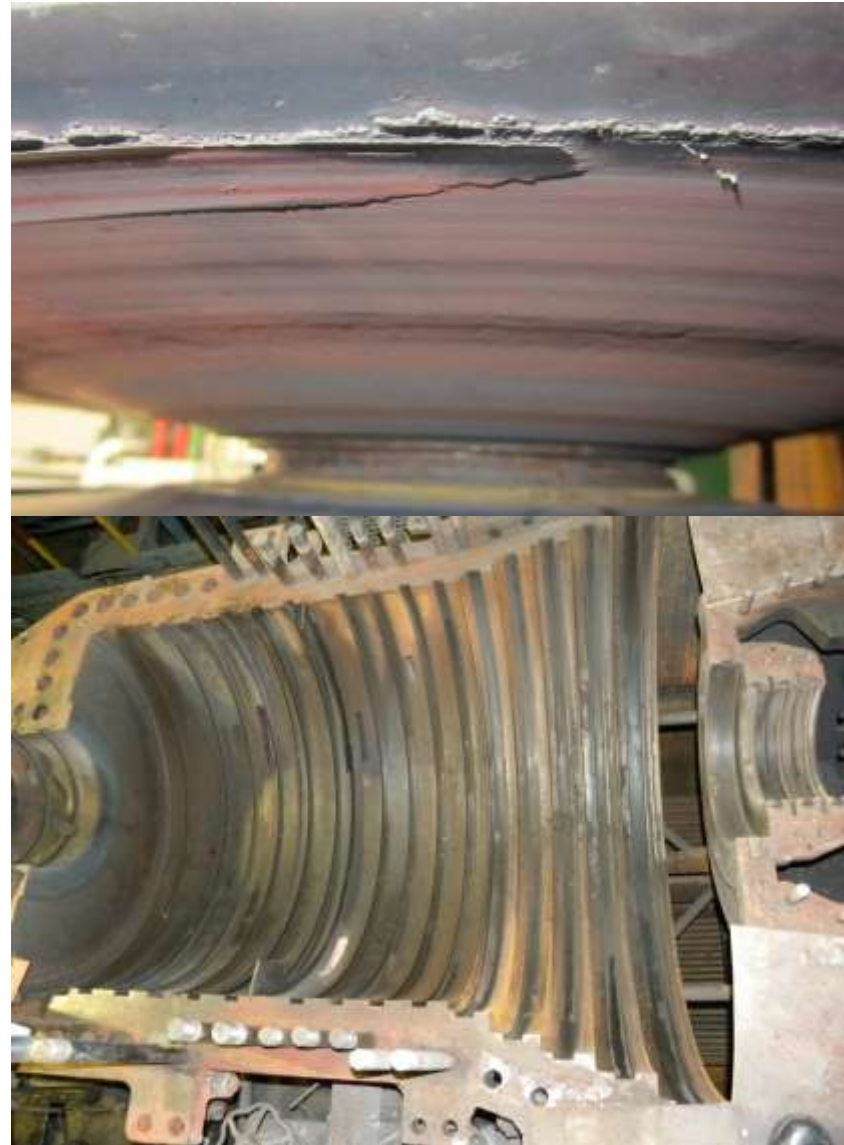


Case Study

Repair & Efficiency improvement of turbine

Status report

- Turbine tripped and reached over speed
- Turbine shut down and opened the same.
- Damage to the rotor and diaphragms.



Further inputs

- On inspection found all parts rubbed and fused due to high temperature
- Triveni immediately deputed engineers to establish possible causes for failure and also make a techno commercial offer
- Offer submitted and due diligence done by the customer before placing order in Triveni



Challenges

- Customer had a limited budget
- Unwilling to increase his spend budget based on our recommendations
- To do a complete engineering based on severely damaged parts
- To review all other auxiliaries and ensure they are in operational fitness

Confidence building

- On receipt of the turbine and parts, establish a detailed engineering plan
- Map the requisite readings to ensure critical dimensions are captured.
- Used this opportunity to review the standardization of the parts with our design and achieving an efficiency improvement
- *Time lines and QAP presented to customer to build the confidence*

Solution

- Detailed engineering study carried out to map the existing parameters
- Matched the existing parameters with the new plan proposed to ensure that the efficiency improvement is achieved

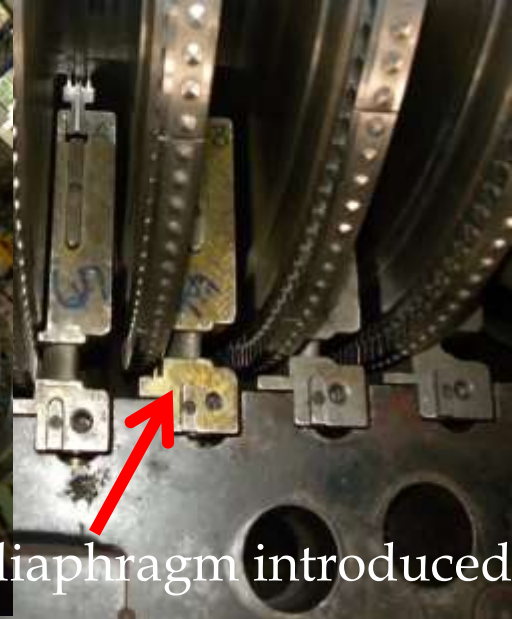
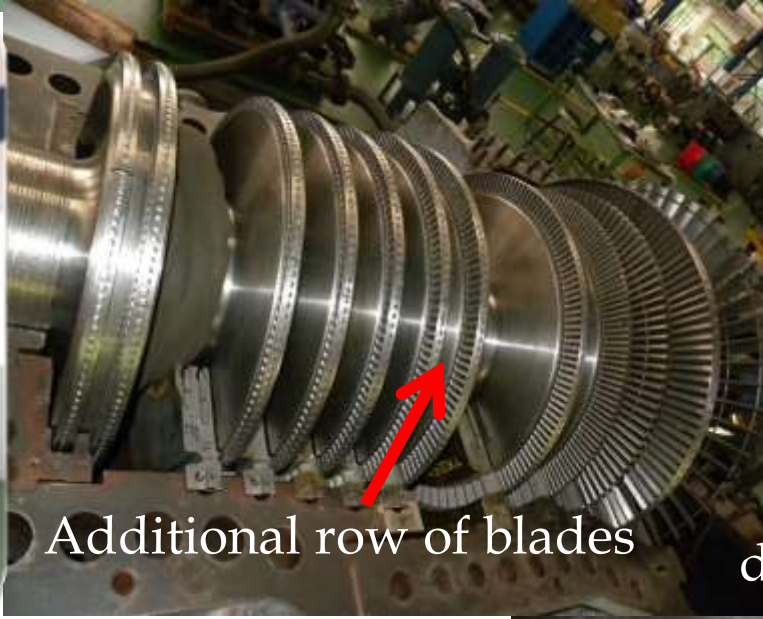
Steps

- Complete mapping of design
- Required introduction of an extra row
- New rotor design
- Existing casing re-design
- Box up of turbine
- MRT at works, *Triveni only company that has an in-house facility*
- Inspection by customer and despatch



As received turbine and view of internals

Project completion process



Post completion process

- Shipped out as per plan
- Erected & commissioned on time
- *Proved the performance and achieved 8% improvement from the design*

