

CASE STUDY

FX-TURBO Evaluation & Redesign

Turboexpander-Generator



Application:

Geothermal Power Generation

Location:

California, USA

Challenge:

For more than 10 years since its commissioning, a non-LAT turboexpander-generator operated with a MTBF of \leq six months and performed at half its operating point.


Specifications:

Process Gas: Geothermal Steam/Brine

Inlet Pressure: 307 PSIA

Inlet Temperature: 340° F

Power: 12+ MW


L.A. Turbine™
A Chart Industries Company

www.LATurbine.com

L.A. Turbine (LAT) is a recognized leader in aftermarket repair, redesign, maintenance and production of spare parts for all LAT & non-OEM turboexpander brands and configurations.

Our global FX-TURBO team provides diagnostic and emergency help 24/7/365 via our +1 855 FX-TURBO hotline (+1 855 398 8726) as well as on-site field service support.

LAT is also an OEM of turboexpanders for hydrocarbon processing, propane dehydrogenation, geothermal power generation and other industrial power recovery and refrigeration applications.

24/7/365
Support Services

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Case Study: Turboexpander-Generator

Challenge:

From its commissioning date and for more than a decade, a non-LAT designed turboexpander-generator processing direct geothermal steam brine within a geothermal power plant continually failed. It operated with a mean time between failures (MTBF) of only six months and the longest run cycle was 18 months.

Solution:

LAT's engineering evaluation revealed a problem with the Hirth coupling. To address this problem and other operational issues, LAT engineers created an innovative four-lobed polygon shaft-wheel attachment to support the high-speed, power and temperature application.

Result:

The redesigned components reduced centrifugal stress and vibration and increased the power transfer capacity. The revised turboexpander-generator continuously performs at 20% above the prior operating point and now delivers 12+ MW of power output.

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