

Service Insights

Geared Variable-Speed Drives | Power | Maintenance | AMERICAS

Application	Gas Turbine
Product	Torque converter and gear unit of Japanese manufacturer
Country	Mexico
Operator	Spanish company in the energy sector

Support of a service provider for non-Voith equipment

In spring 2018, Voith supports an international gas turbine manufacturer during its overhaul of third-party turbines by servicing a torque converter as well as a gearbox, which are not from their own production. The Voith team of specialists masters some difficulties directly on the plant, as well as from the headquarters.

Viewpoint of customer:

The operator of a 1,000 MW combined-cycle power plant on the east coast of Mexico wants to have a major overhaul carried out in the spring of 2018 on its two gas turbine trains, built in 2001 from Japanese production. He does not use the original manufacturer for this, but another international OEM. However, since he has neither experience with the installed torque converters with turning device nor with gearboxes, he is looking for a high-performance partner. He knows Voith as a manufacturer of torque converters and therefore makes contact with the machine manufacturer from Germany so that he also can continue to work with Voith on such projects in the future.



Torque converter with rotary device and gearbox

Order:

After the order was placed with Voith in March, two highly experienced Voith service technicians from different locations travel from Germany to their first of two ten-day assignments at the beginning of April 2018. Voith should complete the overhaul of both plants within four weeks.

Insights:

Although each of the Voith technicians is a specialist for his field and are from different locations, they work together on site in the interests of the customer and can therefore complement each other well. Both learn from each other.

The units (torque converter, gearbox, including overrunning clutch) are disassembled, opened with special tools, cleaned and where appropriate,

equipped with new bearings. Non-destructive tests are carried out, for example, on the drive shaft, the hub and the bearings. Visual inspections, magnetic particle crack tests, mechanical concentricity tests, tothing backlash tests are carried out and the tothing contact pattern is also recorded.

Flexibility and creativity are also required from the service technicians: Since hardly any drawings from the original manufacturer are available, measurements are taken on site and, in addition, the tool for a pulling device must be manufactured on site.



Detected damaged gearbox teeth

The Voith team from the headquarters and at the plant mastered also some further challenges:

- uncertainty about the tool required on site

- three-month technical clarification and complex internal coordination with various locations of the cooperation partner
- extremely tight schedule on the part of the client



Gearbox of the Japanese original manufacturer

In the second operation, the spare torque converter is overhauled and installed in the second gas turbine line.



Torque converter manufactured in Japan

Technical Details:

During the inspection of the gearbox, damage to the tothing was found, which was presumably caused by the passage of electrical current. The damaged parts are measured in 3D and manufactured by Voith. In June 2018,

these parts are installed on the plant by the service technicians. In August, the combined cycle power plant is back in operation.

How we make the difference...

According to the contracting service provider, he was very satisfied with the overall service package and would like to cooperate again with Voith for the overhaul of the second power plant block as well as in other projects.

More about the Voith product at:

www.voith.com/vsd

www.voith.com/BHS-Turbogears

More about Voith Service:

www.voith.com/turbo-industry-service

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