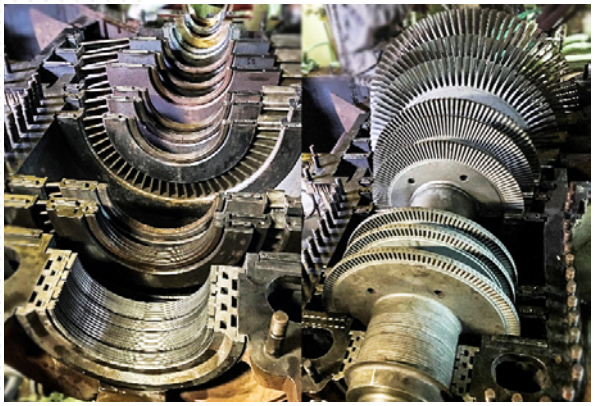
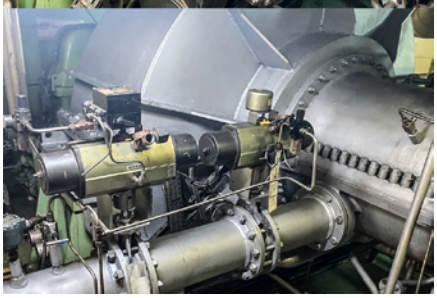
Conhagen®
Rotating Equipment Specialists

CASE STUDY
Industry: Marine

Vessel Steam Turbine Vibration Reduction

A steam turbine generator onboard a container vessel was exhibiting high vibration. Conhagen was contracted to analyze and make recommendations.





Objective

Identify the cause of the high vibration of the steam turbine, generate a repair assessment, and repair the turbine.

Solution

Conhagen engineering determined that the turbine casing should be removed and rotating elements be visually inspected. A Conhagen team boarded the vessel, removed the casing, and identified severe damage to multiple turbine blades.

The next step was to remove the rotor. However, during the initial construction of this vessel, portions were installed after the generator (these generators are expected to stay in place for the lifetime of the ship). In order to remove the rotor, Conhagen had to remove ship doors and use elaborate rigging with a challenging crane lift plan.

The rotor was safely removed and taken to the Conhagen shop, where all repairs were made. The rotor was returned to the vessel and the turbine was returned to working condition by a Conhagen crew.

In addition to repairing the rotor, new bearings were installed along with all gland and diaphragm seal packing. Conhagen engineering and technicians were onboard the vessel while underway to the next port of call, supporting the commissioning and start up of the repaired steam turbine unit.

Results

The steam turbine generator was restored to as-new condition, started up, and returned to full operating capacity with vibration levels below OEM's specifications for brand new.