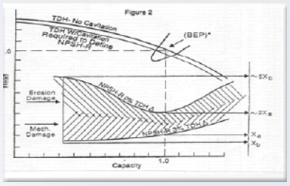
AGI Industries
An Employee Owned Company



REAcT - AGI Rotating Equipment Action Team

AGI Rotating Equipment Action Team – AGI Industries has assembled some of the best, brightest and most experienced in the industry to diagnose and fix pump and system problems. Using both internal competency and that of our manufacturing partners and selected subcontractors, we are able to diagnose and make recommendations on pump, seal, piping, control, or almost any problem related to fluid handling or movement. This is done by flow, pressure, temperature & vibration monitoring, system analysis, NPSH calculations, Field Performance Testing, Motor Circuit Testing, Mechanical Seal Failure Analysis, peer review of Computer Surge Analysis & Modeling, and Pulsation Studies.

How Do We Do It?

- Flow, Pressure, Temperature, Vibration, and Hydraulic Transient Event Monitoring / Recording
- System Analysis
- NPSH Calculations
- Field Performance Testing
- Motor Circuit Testing
- Mechanical Seal Failure Analysis
- Peer Review of Computer Surge Analysis & Modeling
- Pulsation Studies

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Case Study from a Major Gas Processing Plant

Project Description

- 21 stage vertical turbine can (VS6) pump with repeated failures of the mechanical seals due to shaft whip. The pump received by AGI Industries had failed with less than 2 months run time.

- AGI Industries REAcT Team met with client to discuss pump failures. A proposal was made to simplify the pump design, eliminating thrust issues, and allow seal changes without the removal of the motor. Modifications were proposed to eliminate the need for hot work permits typically needed for the removal of the coupling and seal. The simpler design eliminated a number of registered fits and existing pump thrust bearing and lube system.

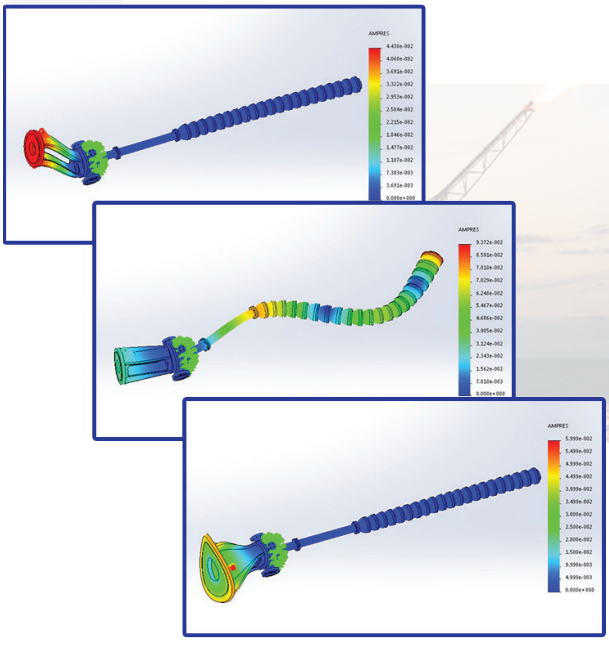
Project Scope

General analysis, hydraulic study (including thrust calculations and vibration readings), and Reed frequency analysis performed. Based on the results the pump design was simplified and improved with the following modifications and upgrades.

- Balanced pump thrust eliminating pump thrust bearing and lube system.
- All bushings upgraded with Graphalloy Tin-Babbitt impregnated carbon.
- New driver stand built per final design.
- New mechanical seal chamber manufactured per final drawing.
- Designed and supplied custom mechanical seal.
- Upgraded to a solid CCA spacer coupling.
- New 75 HP LP frame VFD motor 3600 RPM 480/3/60.
- Manufactured critical parts.
- Performed commissioning and start up.

Turn around on this job was 7 weeks, to include: tear down and inspect, engineering for design change, completion of project documentation.

Stator Critical Frequency Analysis



Before

After