ENGINEERED SOLUTION FOR CRUDE OIL UPGRADER

PROBLEM

A Major Middle Eastern Oil Company planned to build a refinery including a new Propane Deasphalting (PDA) Unit. The necessary charge pumps would be required to operate with a suction pressure less than atmospheric pressure, medium range discharge pressure, high temperature, constant output and variable viscosity. The pump's construction and testing were to meet API 676 and be open to customer inspections of components and procedures throughout the manufacturing process. The manufacturer was also required to demonstrate technical support and repair capabilities for future service and spare parts supply.

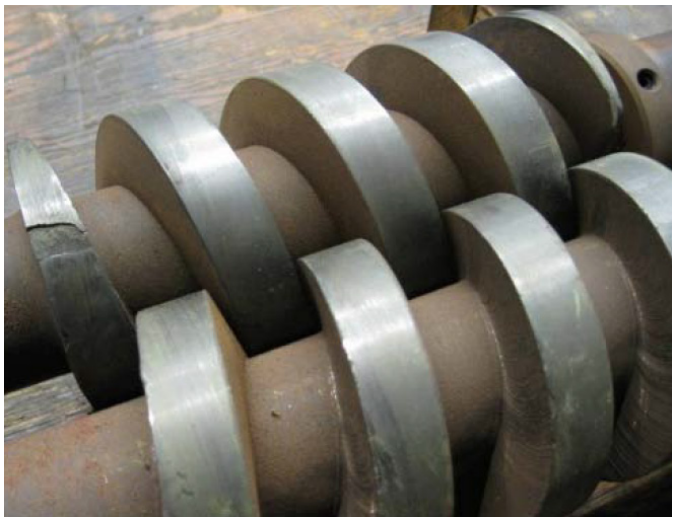
SOLUTION

CIRCOR worked closely with the end user and the engineering and procurement contractor to design a variation of the Warren J40X twin screw pump that incorporated features required by the system design and specifications. These features included steam jacketing of the pump and stuffing boxes with flanged connections, mechanical seal flush piping, jacketed gear and bearing housings and hard coatings applied to the screws and body bores for wear resistance. Redundant pump skids were built with electric motor and steam turbine drivers.

The Propane Deasphalting charge pumps supplied have been in service for almost 15 years as of this writing. The unique, yet difficult operating conditions required of the PDA process called for a unique pump design as well as a unique strategy to keep things running smoothly in the field.

CIRCOR has interacted with the end user from design stages through installation, operation and repair of these units to provide a total life cycle solution. Working through the details of an international oil company's purchasing and maintenance processes as well as the technical requirements of the pumps in service have been embraced by CIRCOR as evidenced by the age of the installation.

The working relationship between CIRCOR and the end user ranges from the basic procurement of small wearing parts all the way through major overhauls by the factory that involve coordinating receipt of the pump at our Massachusetts factory, a thorough inspection, a recommendation of repair scope presented as a detailed inspection report and repair proposal and finally rebuilding, reworking, manufacturing spare parts and exporting the unit back to the end user for installation.



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