

REFINERY AXIAL COMPRESSOR SHOP OVERHAUL AND RERATE

By Eric Dunlap, Senior Engineer

RMS was recently contracted to inspect and overhaul an axial compressor used as the main air blower in a FCC Unit at a Texas refinery. We started the project by providing on-site labor supervision for the Fluid Catalytic Cracking (FCC) train turnaround in which the entire compressor was removed from the machinery deck and replaced with the customer's spare.

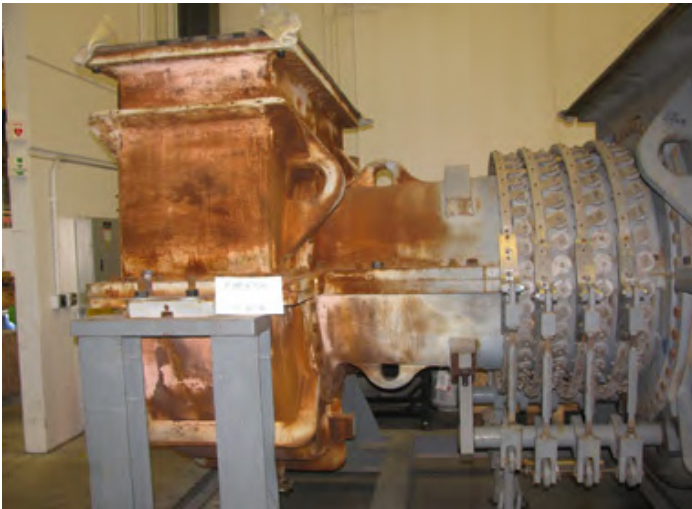


Figure 1

Following the turnaround, the compressor was shipped to the RMS service center in Bethlehem, PA for a complete disassembly and Phase II inspection. The results of the inspection were documented in an inspection report and presented to the customer with a recommended repair work scope, which included a new shaft, two new rotor discs, new bearing housings, all new variable stator vanes, new casing hardware, and a partial new rotor blade set. All of the remaining components were repaired as required to function reliably for another service campaign.

The requirement that two rotor discs be retired and replaced with new discs allowed the customer and RMS an opportunity to respond to the refinery's need for increased air flow from the compressor. By redesigning the discs and rotor blades in these stages, RMS aerodynamic analysis predicts a 4% increase in compressor flow capacity will be achieved.



Figure 2

The refurbished compressor is currently being re-assembled in our Bethlehem, PA service center. Once all quality checks and critical machine clearances are verified and recorded the compressor will be preserved and shipped to the customer's storage facility, ready to be installed and provide another long-term reliable operating campaign.

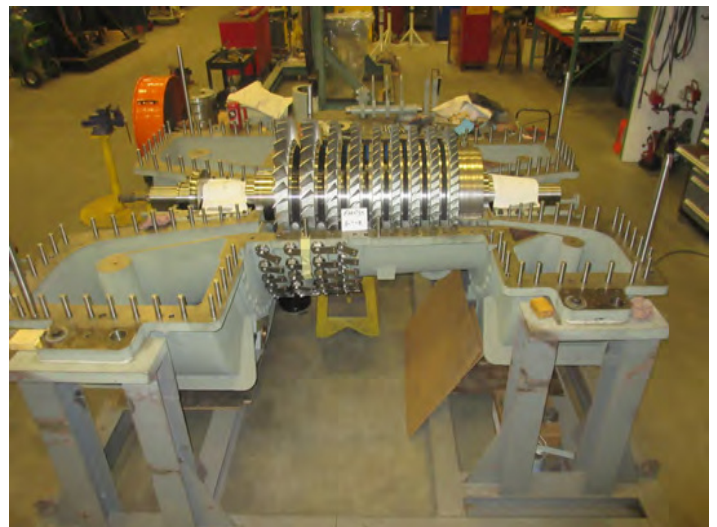


Figure 3



Figure 4

For more information:

Eric Dunlap, Senior Engineer
Email: edunlap@rotatingmachinery.com
Tel: 484-821-0702

Headquarters

2760 Baglyos Cir.
Bethlehem, PA 18020

Houston Office

16676 Northchase Dr., Ste 400
Houston, TX 77060



rotatingmachinery.com

Tel: 484-821-0702

Parts: rms@rotatingmachinery.com

Rotating Machinery Services, Inc. | 2760 Baglyos Circle, Bethlehem, PA 18020 | Tel: 484-821-0702