

# EXPANDING REFINERY STABILITY - OVERHAUL OF AN FCC EXPANDER PREPARES PLANT FOR EMERGENCY SHUTDOWN OR PLANNED OUTAGES.

*By Don Shafer, Director of FCC Expander Engineering*

RMS recently completed the repair and overhaul of another GEC FEX-125HT FCC Expander. This expander is used in the refinery's FCC unit power recovery train and is rated to generate more than 31,500 shaft horsepower. This is a sister unit to an expander that RMS completed a similar overhaul on and shipped in July 2020. The rotor, bearing, and seal assembly as well as the intake casing assembly were removed from service during a planned maintenance outage and shipped to the RMS facility in Bethlehem, PA for disassembly and inspection.

rotor blades and disc outer tenons. The Intake Casing Assembly outer casing and nosecone were found to be distorted and out of round and the key mating faces were out of acceptable flatness tolerances. The RMS engineering team and shop personnel have extensive experience on these types of repairs. The repair and refurbishment work scopes were executed as required to meet the customer's schedule. The work scope included casing and component weld repairs and re-machining along with new components and hardware as recommended in the inspection reports.



Figure 1

The inspection findings were evaluated and detailed repair work scopes were developed for each expander component. Catalyst erosion cutting was found on the

At the completion of repairs, the rotor assembly was bladed, assembled, and balanced, and the rotor bearing and seal assembly and the intake casing assemblies were re-assembled. All critical clearances and fits were verified in the RMS Bethlehem, PA shop facility. The major sub-assemblies were then preserved as required and shipped to the customer's warehouse, waiting to be installed if required for an emergency shutdown or at the next planned unit outage.



Figure 2

*For more information:*

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