

# Team Rebuilds Turbine

After Refinery Fire



*URC produces petroleum products for cars, trucks, airplanes, and farm and construction equipment, as well as homes and industries in Pennsylvania and portions of New York and Ohio.*

**IN MARCH 2008**, United Refining Company (URC) had a pump fire in its vacuum tower. The fire severely damaged a Dresser-Rand (formerly COPPUS) single-stage RLVA model steam turbine that drives an Ingersoll Dresser light vacuum gas oil pump. The turbine had been in service since 1998.

The refinery, based in Warren, Pennsylvania, USA, operates 24 hours a day, seven days a week, and averages throughput of 70,000 barrels of oil a day.

Part of URC's mission is to provide clients with a stable supply of petroleum products, and the steam turbine was the only turbine that fit into the restricted space in the vacuum tower, so it was critical to get the damaged unit back up and running as quickly as possible.

The turbine was shipped to Dresser-Rand's Horsham, Pennsylvania, service center and work began as soon as it arrived. The damage to the turbine was extensive, so new components had to be located and installed. Dresser-Rand employees in Worcester, Massachusetts, and in Olean and Wellsville, New York and Horsham worked together to locate new and used components for the turbine through D-R's Restored Classics program.

The Restored Classics is essentially an engineered recycling program for D-R steam turbines. Its objective is to match clients with fully refurbished units, specifically engineered

to clients' needs. A Restored Classics turbine can be delivered in a fraction of the time of a newly manufactured turbine, and for lower overall cost.

Parts from three older turbines were used in rebuilding the damaged turbine. A major challenge the team faced was the unit's vertical orientation, because the three older turbines were all horizontally configured. This required extensive alterations and specialized engineering skills to reconfigure the turbine components. Nonetheless, in just two weeks the employees at the Horsham service center, with engineering support from technical specialists at the Steam Turbine Technology Center in Worcester, built a new turbine from these components.

The rebuilt turbine underwent a full mechanical steam test, and with its functionality fully restored, the rebuilt unit was shipped mid-April 2008 and installed by URC. URC was pleased with the easy "drop-in" installation and unit start-up, particularly as the refurbished turbine perfectly matched the previous turbine's footprint.

Although the project offered plenty of challenges, through it all, team members closely coordinated their efforts and pooled their resources and talent to provide the client with a fast, effective solution to get the turbine back up and running. The strength of Dresser-Rand's service was put to the test and proved as individuals from different locations quickly and efficiently formed a non-traditional team to help URC in its hour of need. ■