

## Combustion Turbines

### Situation

A critical component in combustion turbines used by utilities to generate electricity is the crossfire tube which feeds natural gas to the turbine. This tube contains a packing set which, should it fail, will result in a significant gas leak, requiring shutdown of the unit and repacking the crossfire tube. Repacking is an arduous process due to the difficulty in accessing the crossfire tube, which is encapsulated by a cooling system. In the interest of efficiency, plant maintenance personnel would schedule repacking to coincide with other repairs to the turbine.

One utility was experiencing such failures at approximately four-week intervals, necessitating frequent maintenance. The failures were due to the configuration of the packing set, which included a 7/16" laminated graphite ring and a 3/8" graphite square-braid ring, both of which were split. When the laminated graphite ring was expanded to encircle the tube, it tended to come apart. In addition the 3/16" compression lip of the follower severely limited adjustment of the packing set.



### Solution

Garlock Sealing Technologies worked closely with plant personnel to develop a custom-engineered solution. Garlock recommended replacing the existing packing with a three-ring set, comprised of two 3/8" rings of its Style 1303-FEP compression packing and another 3/8" ring cut in half to make a 3/16" x 3/8" ring. This fire-safe packing complies with the most stringent VOC and VHAP emissions standards. Dimensionally stable, it is impervious to gases and fluids and resists heat, pressure and chemicals. More importantly, it retains its integrity when cut and formed.

### Results

The custom packing sets provide more than twice the longevity of the sets they replaced, enabling the customer to realize significant, ongoing maintenance savings.

For more information on Style 1303-FEP, contact Garlock Sealing Technologies at **1-800-448-6688** or visit us on the web at **[www.garlock.com](http://www.garlock.com)**.

