

## Challenge

### Background

In its effort to seal a turbine shaft, a hydroelectric station dealt with packing failure every six months because of excessive extrusion and consolidation. All the leakage from the packing had to be run through the station's oil-water separator, which resulted in more run time and wear on equipment. Each time the packing needed replacement, the turbine was taken offline for 12 hours – resulting in \$2,600 in labor costs and \$3,000 in lost revenue.



*A hydropower station was experiencing low packing life when sealing a 25" turbine shaft.*

## Solution

Four rings of Chesterton 1730 were installed. 1730 is constructed from a rugged thermoset fiber, and therefore is more resistant to extrusion and consolidation than traditional PTFE packings. Though it is more resilient than PTFE it retains excellent leakage control and resists shaft scoring and fretting.



*Chesterton 1730 heat-resistant packing.*

## Results

After conducting a return on investment analysis, the plant found that the Chesterton packing paid for itself in less than two months. The packing was changed after three years but only because the turbine shaft was scheduled to be refurbished. In those three years the station saved over \$33,000 in labor and avoidance of downtime/lost sales as well as value from the reduced load on their oil-water separator.



*The station experienced increased uptime and saved over \$33,000.*