

Turbine Test Cells

Customer:

Major Turbine Manufacturer (TM) in the western United States.

Background/Operations:

Turbine Test Cells are controlled chambers used by turbine manufacturers to verify the efficiency of newly built turbines. A variety of sensors are needed to measure the turbine's performance. Temperature sensors are especially critical during this evaluation.

Problem:

Multiple sensor manufacturers had attempted to provide robust RTD's that could withstand the high temperatures and vibration of the test cell. At best these sensors were holding up for around a month, at worst they were failing in two or three days!

With downtime increasing, replacement costs adding up, and no solution in sight, this turbine manufacturer turned to REOTEMP to develop a solution.

Application challenges:

- Severe, continuous vibration
- Temperature extremes (150F to 1,000F)
- High accuracy required (+/- .3F at 500F)
- Long life span (minimum 1 year, ideally over 2yrs)

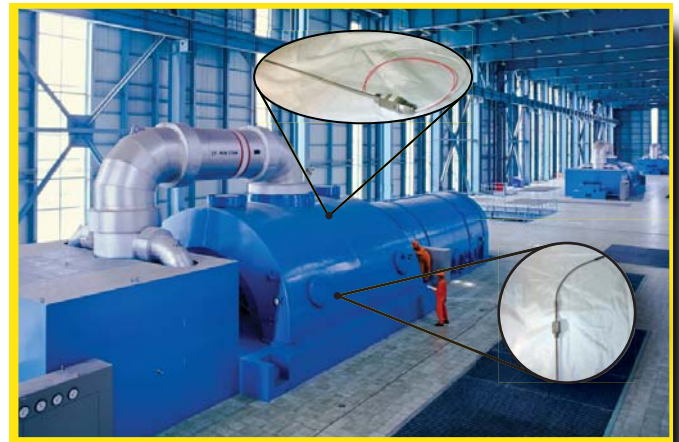
Considerations:

Working closely with the turbine engineers on site, REOTEMP began to investigate the application and environmental challenges. New designs and techniques were developed and samples were placed into the test cell. More than one sample was sent to the TM for trial only to fail under the harsh environment, but after each test REOTEMP was able to learn more about the application and additional improvements in design were made.

Solution:

After over a year of field testing and prototype trials, REOTEMP developed a new RTD design that could withstand the extremely harsh turbine test cell environment. The first RTD's were installed in March of 2004, some of which are still in use today - over 5 years later!

The TM was very happy to finally have a long term solution in place, drastically reducing their test cell downtime and replacement costs. They were now able to focus on verifying accurate and consistent turbine performance and ensuring that their customers were receiving the most efficient products possible.



Distributed by: