Case Study - Power Generation

REOTEMP INSTRUMENTS

Turbine Flashback Thermocouples

Power Generation

Customer:

An engineering firm located in Alabama, U.S.A.

Background:

This engineering firm was hired to oversee the start up of a power plant that had laid dormant for a number of years. A critical part of the startup was evaluating the turbines and their temperature sensors. One type of sensor is called the flashback thermocouple, which is responsible for monitoring conditions that could lead to a "flashback" (when the combustor flame grows beyond its controlled boundaries). If this flame is not controlled, it can trigger a turbine shut down and/or damage components of the turbine.

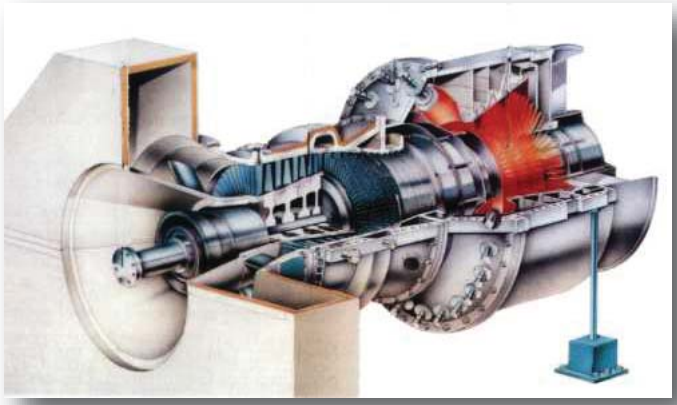
Problem:

While testing the existing flashback thermocouples, the firm discovered the sensors were showing erratic results and were failing in the harsh turbine environment. **They needed to replace the thermocouples with new sensors that could withstand the high temperatures and continuous vibration for a longer period of time.** To make the situation more challenging, the replacement thermocouples had to have the exact same form, fit, and function to be used in the intricate spaces of the turbine.

> ***"Not one of the thermocouples you have supplied to date for (this facility) has failed."***
>
> ***-Startup Engineer***

Application Requirements/Challenges:

- **Match existing sensor's form, fit, and function**
- Extend sensor lifetime and reliability
- Continuous vibration
- High temperatures



Solution:

REO*TEMP* developed a new sensor with a more durable design, which could withstand the continuous vibration and high temperatures. The design stayed true to the form, fit, and function requirements so it could be an easy replacement for the customer. The sensor's lifetime was extended considerably, enabling the customer to avoid costly down time and the prospect of damaging their turbines.

Results:

The customer was very pleased with the REO*TEMP* flashback thermocouples. They immediately began purchasing replacement units and were able to start up the dormant power plant on time. A plant-wide conversion to the more reliable REO*TEMP* sensors is currently underway.

Distributed by:

REO*TEMP* Instruments
Ph (800)648-7737
Fx (858)784-0720
San Diego, CA U.S.A.
sales@reotemp.com
www.reotemp.com