

Reinforced Co-Generation Thermocouple

Customer:

An owner and operator of Co-Generation Power Plants throughout the world.

Location:

Remote location in the western U.S..

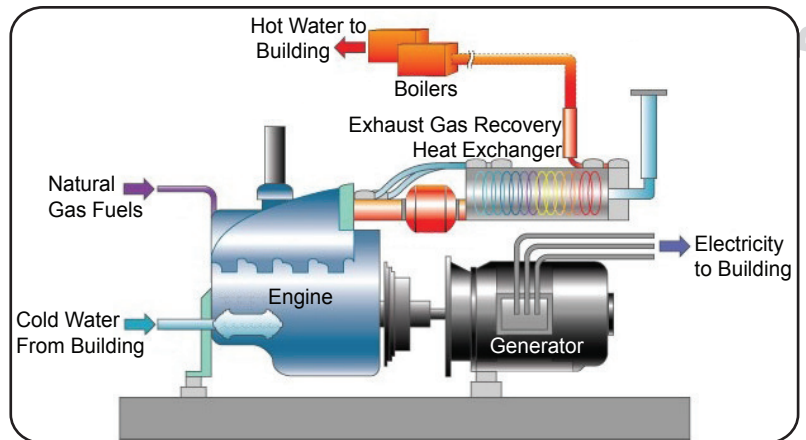
Background:

When electricity is generated at a power plant, heat is also given off as a by-product. Co-generation captures not only the electricity, but also the heat. Often the heat can be used to heat water pipes for the local community or can be re-used to help generate additional electricity.

Problem:

The sensors that were currently in use weren't properly protected or designed for the application conditions. **The existing sensors were getting kinked during use and were subjected to high levels of vibration. Also, the sensors had a weak transition and the wire used was not ideal.** As a result, the sensors were degrading and giving intermittent readings. The sensor wires were making contact, losing contact, and then making contact again. These inconsistent readings were setting off system alarms, which in turn created failure reports that had to be checked and processed. In addition to the frustration of lost time, if too many of the sensors failed, the plant risked a very costly shut down.

Co-Generation Process



Application Challenges

- Bending/kinking of sensor wires
- High vibration
- Mechanical stress
- Difficult thermowell/sensor mounting

Issues with Current Sensor

- Weak transition
- Intermittent reading
- Susceptible to bending/kinking
- Problematic wiring choice

Solution:

REOTEMP's engineering team identified the weak points of the competitor's sensor and created their own design. **The new design incorporated armored protection to guard against kinking, along with a new component configuration that reduced mechanical strain on stress points.** Reinforced components were used throughout the sensor, resulting in a finished product that was significantly more durable.

REOTEMP Sensor Improvements

- Extended product Life
- Lower cost
- Simplified design
- Reduced error reports
- Saved time
- Simplified thermowell/sensor mounting

Results:

Ten pieces of the REOTEMP sensors were purchased immediately. The new sensors performed consistently and were reliable in the harsh conditions. The crew no longer had to spend valuable time reviewing failure reports and have avoided the potential for a plant shut down due to sensor failure.

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