THE CUSTOMER

The Datang Heshan Power Plant is a 1×300MW coal-fired power station in Guangxi, China. The tangentially fired boiler, supplied by Dongfang Boiler Group Co., Ltd. (China), is equipped with 4 tiny-oil ignition systems.

THE CHALLENGE

The tiny-oil guns installed at the boiler are monitored by video imaging flame detectors to confirm status.

1) The video imaging detectors were mounted with a standard sight tube and often could not distinguish the flame from the tiny-oil guns.

2) The video imaging detectors were mounted near the boiler wall, which exposed them to high temperatures that eventually damaged the units. The location also made it extremely difficult to maintain/service.

3) The cost for a replacement video imaging detector unit is extremely high.
THE SOLUTION

1) Replaced the video imaging flame detectors with Safe-Fire’s SU-2002 Integrated Flame Detectors, which operate on industry standard UV optical sensor technology

2) Replaced the existing sight tube with a flexible fiber optic assembly to target the flame of interest

3) Increased the distance between the flame detector and the heat source by extending the lengths of the fiber optic inner and outer carriers. This also improved access to the detector heads

4) Completed minor modifications to the cooling air system to support the new flame detectors

5) Retrofitted the local ignition control cabinet to house the SU-2002 power supply and communication terminals

THE RESULTS

The renovation significantly improved the accuracy and overall reliability on the flame detection system for the tiny-oil guns.

✔ Using the sensor that detects actual flame energy improves the accuracy of the target flame

✔ Reduced labor-intensive maintenance

✔ Significant long-term cost savings