

# CASE STUDY

## Renovation of Flame Detection System

### On Wall-fired Boiler

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**Safe-Fire inc.**

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## The Customer

The Haiphong Power Plant is a 4x300MW coal-fired power station in Haiphong province, Vietnam. The wall fired boiler was supplied by Dongfang Boiler Group Co., Ltd. (China). Each boiler has 24 igniter oil burners and 24 main coal burners, all are equipped with a competitor's flame detector



## The Challenges

There was a concern at the Hai Phong power plant that flame scanners were prematurely malfunctioning and failing during normal operations. The suspected cause for this behavior is exposure to high temperatures in the vicinity of the installation.

- 1) The existing flame scanners have a working temperature range of -20 to +70°C. When temperatures exceed the upper working range, the electronics can suffer temporary and or permanent damage
- 2) In many cases, scanners will simply stop working when overheated. However, some have been observed to give incorrect alarm and flame status while overheated, then operate normal when the temperature drops
- 3) A cost effective solution that can accommodate the higher temperatures at this installation is needed



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## Solutions

Safe Fire's W-Flame detection system was installed and demonstrated its effectiveness in demanding environment

1) Gradually replace the existing split-architecture (separate scanner and amplifier) flame scanners with the W-Flame integrated scanner/amplifier detector. The higher temperature tolerance (+85°C) of the W-Flame allows it to provide critical flame status information, while the integrated design simplifies installation and allows the use of existing cables to communicate with the DCS



BEFORE



AFTER

## Results

The renovation significantly improved overall flame status reliability and safety without imposing a major capital investment to the end users.

- ✓ Increased flame detector temperature resistance by 20%
  - ✓ Decreased uncertainty in flame status
  - ✓ Lowered equipment cost and the need for frequent maintenance
  - ✓ Transition to W-Flame can be performed gradually as OEM equipment need replacing
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