



FIRE & GAS DETECTION
TECHNOLOGIES INC.

4222 E La Palma Avenue
Anaheim, CA 92807. USA
T: 714-671-8500 F: 714-671-8501
www.fg-detection.com

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The introduction of Hydrogen to blended gas streams

Hydrogen has been seen by many as a way of reducing society's dependence on fossil fuels. Many natural-gas distribution companies are already exploring the possibility of introducing hydrogen into gas streams and whilst the transition to a totally non-carbon-based gas network may be some years off, we are starting to see signs of a shift towards this goal. This shift can have implications for the safety products used within the distribution network and studies need to be undertaken to address these concerns. Traditionally the detector of choice is UVIR as a coverall detector for hydrogen, hydrocarbons, metallic and non-metallic fires. The challenges with UVIR relate to the lower sensitivity which restricts detection range and therefore demands a larger device count or gaps in area coverage and the weakness related to false alarms from hot black bodies or arc-welding.

Today, IR Flame detectors are arguably the most used optical flame detector for natural gas fires. These detectors essentially monitor a narrow band of radiation that focuses on the emission of hot carbon dioxide from a fire. This band is particularly useful as the sun's radiation is absorbed by the earth's atmosphere, and so the detectors are not affected by sunlight. The introduction of hydrogen into a natural gas stream has the desired effect of reducing the carbon content but it means the detection distance for the same size fire will also be reduced. This may lead to flame detection coverage gaps in a facility. What is more, if the blending continues to the point that hydrogen replaces natural gas completely, the same IR flame detectors will no longer be able to detect a fire. We at FGD recognised this challenge and have taken steps to provide choice to fire-protection system designers through a range of independently tested flame detectors.

