Fire in welding fumes extraction system

Safety Flash Published on **25 August 2020** Generated on **17 January 2025** IMCA SF 25/20

IOGP Life Saving Rules:

Line of fire

What happened?

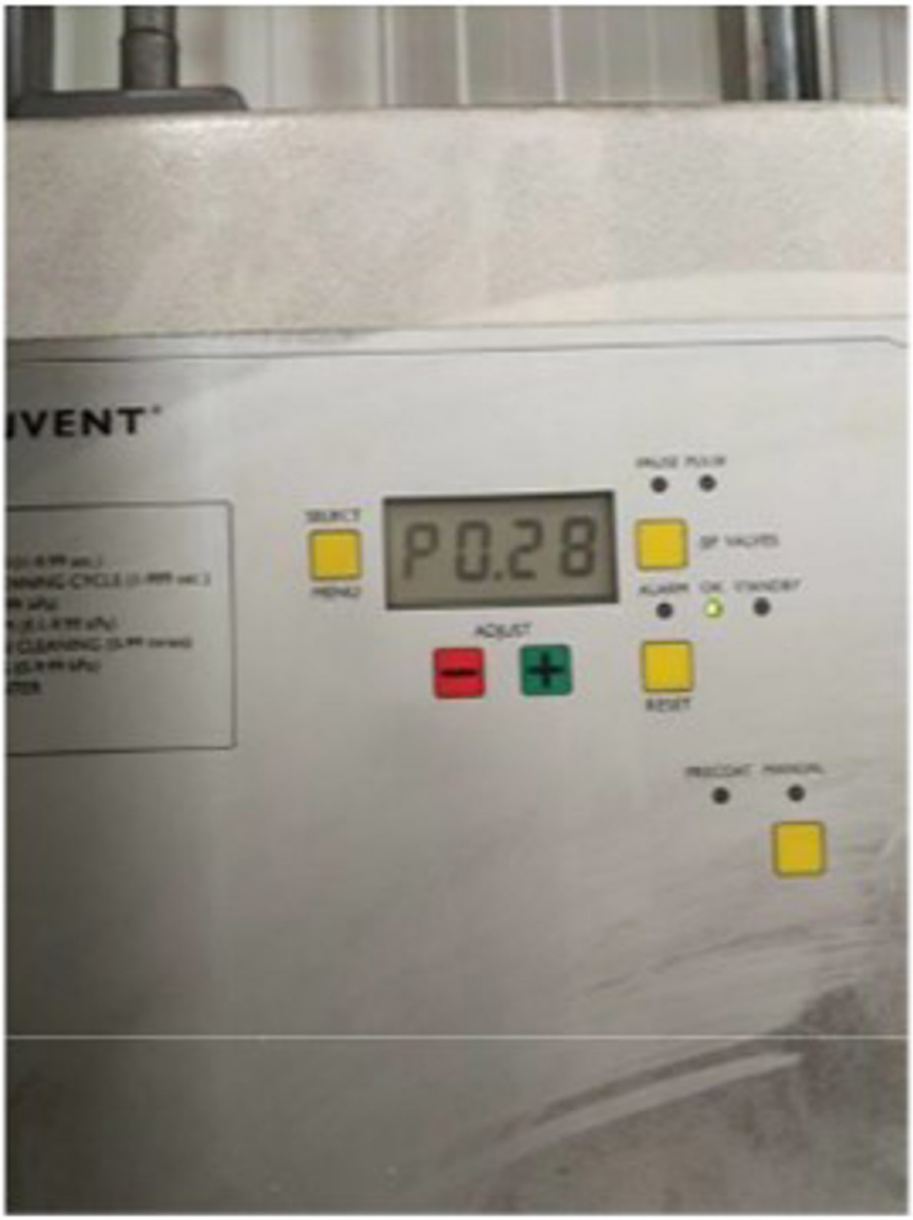
In a shore-based workshop facility, the filters inside a welding fume extraction unit ignited whilst in operation.

On investigating an initial smell of burning, smoke was seen escaping from the welding fume extraction system at the rear of the workshop.

Smoke ingress into the workshop activated the smoke alarm and the workshop was safely evacuated.

The system was shut down and initial attempts using portable CO_2 extinguishers at the base of the unit was unsuccessful, as the fire progressed upwards through the filter banks.

On arrival the emergency services extinguished the fire through direct water application and cooling.



What were the causes? What went wrong?

Following initial investigation and discussions with the supplier it was found that the filters were blocked which allowed metal particles to build up, oxidize on the filter surfaces, heat up and eventually lead to a fire.

The unit was well within its annual inspection period and nothing related to filter replacement was highlighted at the previous inspection.

The supplier advised that blocked filters are indicated by a reading of 2.0 or above on the unit's display (2000 Pascals). As an example, the display from an operational unit is shown here. This indicates 0.28 (280 Pascals) showing it is nearly new and well within the limit.

Actions

Where similar systems are used, check the display for high or excessive pressure readings as outlined in the manufacturer's instructions and ensure

that this check is included in regular operational and maintenance checks.

Members may wish to refer to:

- Fire In Incinerator Exhaust Gas Manifold
- Incorrect Information In User Manual For Fixed Fire-Fighting System
- Serious Failure of CO2 Fire-Fighting System (USCG)
- Near Miss: Potential Fire – Overheating Of Oil In Deep Frying Pan