MANAGING PERSONAL GAS DETECTION IN POWER STATIONS

CASE STUDY

Depending on the precise nature of their work, power sites can generate ammonia, carbon monoxide, nitrogen dioxide, carbon dioxide, methane, hydrogen, sulphur dioxide and a range of flammable/explosive and toxic gases. There may also be risks around hyperoxia/hypoxia.

CROWCON
Detecting Gas Saving Lives

POWER GENERATION – WHETHER FOSSIL FUEL, NUCLEAR OR RENEWABLE – PRESENTS MANY GAS HAZARDS, AND SO REQUIRES BOTH FIXED AND PORTABLE GAS DETECTION.

The Need - Requirements

Depending on the precise nature of their work, power sites can generate ammonia, carbon monoxide, nitrogen dioxide, carbon dioxide, methane, hydrogen, sulphur dioxide and a range of flammable/explosive and toxic gases. There may also be risks around hyperoxia/hypoxia.

COMMON APPLICATIONS FOR GAS DETECTION IN THIS SECTOR INCLUDE:

- In a gas-fired power plant, CH_4 is monitored around the LNG terminal, storage tanks and vaporiser.
- The transport and pulverisation of coal poses a high risk of combustion. Fine coal dust becomes suspended in air and highly explosive. The smallest spark can ignite the dust cloud and cause an explosion that sweeps up more dust, which explodes in turn, and so on in a chain reaction. Coal power plants must have hazardous gas certification.
- Coal power plants also generate large volumes of CO.
- Turbines and generators must be monitored for hydrogen, which is often used as a coolant.
- Gases including chlorine, ozone and ammonia may be used as disinfectants in cooling towers, where they are a gas hazard.
- Sulphur hexafluoride (SF_6) is an inorganic, colourless, odourless, non-flammable, heavy gas that has exceptional electrical insulation performance. It is widely used in high voltage circuit breakers, substations and electrical equipment within the power industry. While it does not pose an immediate gas hazard, SF_6 is a greenhouse gas and its use and storage is regulated.
- Types of work undertaken in power plants can increase gas exposure risks, for example confined space entry.

POWER STATIONS MUST COMPLY WITH REGULATIONS AROUND GAS DETECTION AND COMPLIANCE.

The burden of proving compliance

Because the risks are so high, power stations must comply with regulations around gas detection and compliance – this is the case in most regions around the world. Clearly, there is very good reason for this, because using a non-compliant gas detector can be disastrous. But regulatory compliance generates lots of extra work for operators and managers alike, and can be expensive in terms of productivity and overtime costs.

For example, many power stations have more than 30 personal gas detectors, and must conduct frequent audits to prove that all of these are being used, maintained and managed according to site regulations. Very often, the burden of this work falls upon operators who already have lots of other duties and responsibilities.

Regulatory compliance in power plants also generates lots of paperwork and record-keeping. Many power sites keep paper records that must be filed (very tedious) and maintenance schedules are drawn up manually, on spreadsheets. This involves hours of data entry and ties up resources.

In short, regulatory compliance – while absolutely crucial – is often time consuming and stressful and takes skilled workers away from their specialist work. This reduces productivity. Power stations need a way to document their compliance while reducing the time and productivity costs that are currently involved.

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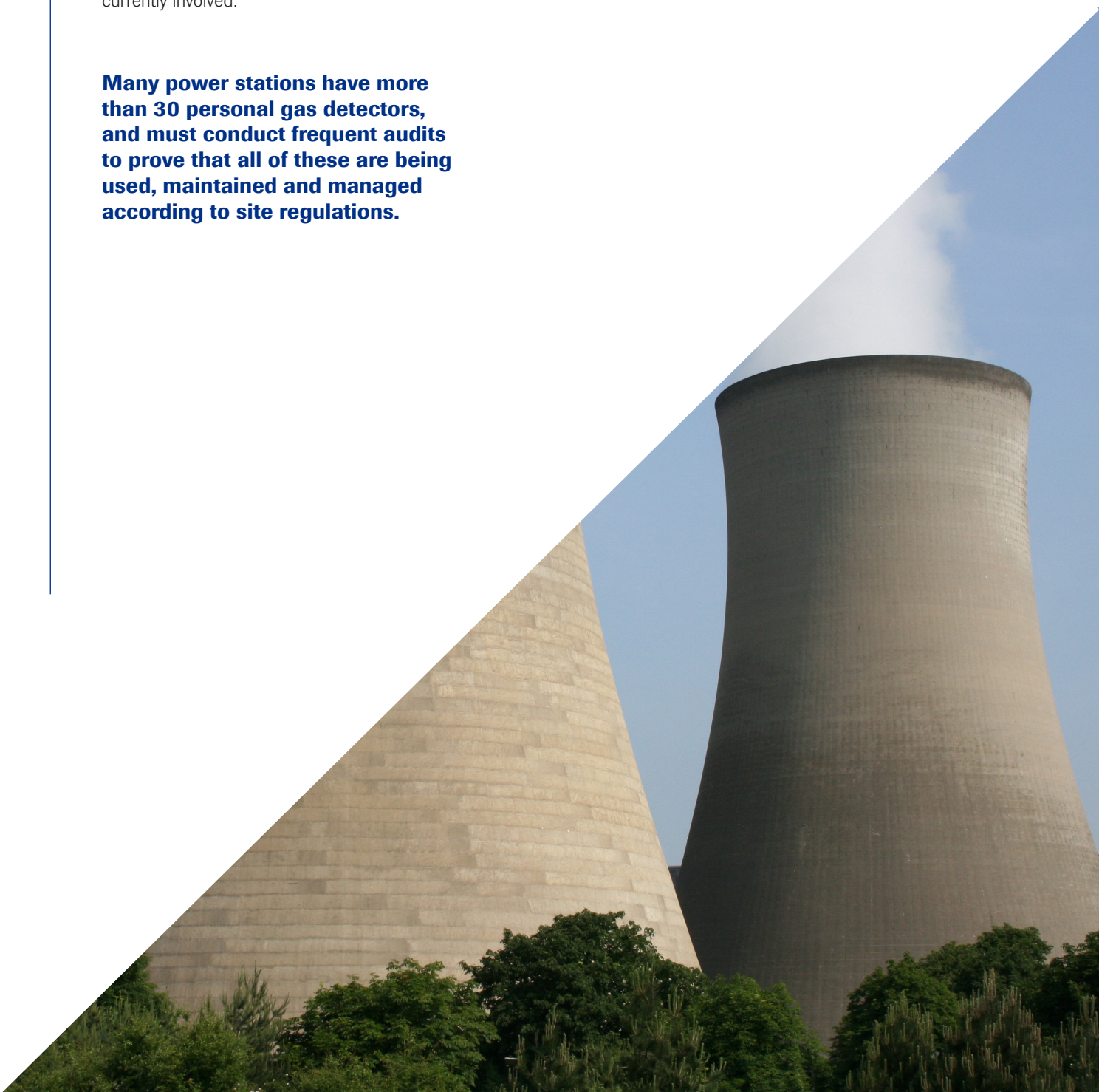

QUICK USER ASSIGNMENT, GAS SAFETY INSIGHTS WITH CROWCON CONNECT

A flexible, cloud-based solution

Crowcon Connect is software that reduces the burden of work involved for power plants. It's a flexible, cloud-based solution that automatically creates and stores the records needed for compliance, which can then be accessed from anywhere. It makes it easy for power sites to record and analyse their gas detection data; they can then act upon the insights provided by Crowcon Connect to optimise production and save costs.

Users can be automatically linked to their gas monitors via an existing RFID tag, such as their employee ID badge, without any additional hardware or paperwork. Their data (e.g., exposure alerts, TWA and any issue) is uploaded directly to the cloud – with no need for paper records or manual data input.

And because Crowcon Connect collects data directly from the device fleet, it keeps accurate records that satisfy the most demanding audits, and provides data analytics that can be used to make operations more efficient – all without downtime or diversion of staff, and accessible from any location.

Crowcon Connect also helps power stations to plan the calibration and maintenance of their gas detectors, and takes care of associated record-keeping. The calibration date for each device is clearly shown in the dashboard; operators can use this information to plan maintenance schedules with the least possible downtime, and ensure that sufficient detectors will be available for use at the start of every shift.

CROWCON CONNECT IS A CLOUD-BASED SOLUTION THAT REMOVES THESE BURDENS BY SECURELY UPLOADING GAS DETECTION DATA AND STORING IT IN THE CLOUD

In a nutshell

Power stations generate many gas hazards, so gas monitoring to a standard that complies with regulations is crucial. However, conventional approaches to compliance involve lots of work and resources. Crowcon Connect is a cloud-based solution that removes these burdens by securely uploading gas detection data and storing it in the cloud, where it can be accessed from any location to prove regulatory compliance and maintenance planning.

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