FIRE SUPPRESSION WITH PYROGEN

Pyrogen fire detection and suppression systems have been available to the South African market since 2000 and, having taken it by storm, recently expanded into African markets, with activities in Ghana, Guinea and Mali mirroring those in South Africa.

Pyrogen, the sister company of Alien Systems and Technologies (AST), which first established itself in the gaseous systems arena, has since added the world's first commercially available aerosol fire suppression system to its range of products. This system, the only genuine Soyuz product in South Africa, has helped to make Pyrogen one of the fastest growing businesses in this sector.

HOW PYROGEN WORKS

Pyrogen employs a unique extinguishing action. Developed from solid rocket fuel technology, it is an inert, non toxic solid that remains stable until it is electrically or thermally activated, whereupon it produces fire suppression products.

These micrometre-sized particles, comprised mainly of potassium carbonates and a gaseous mixture of carbon dioxide, nitrogen and water vapour, blend together to form a fire extinguishing aerosol that is released into the protected area and eliminates any fire within seconds. The hot aerosol propels itself through a solid chemical coolant, which decomposes as it absorbs any amount of heat, thereby ensuring a safe discharge and uniform distribution of the aerosol.

It is the high rate of aerosol discharge that ensures success. The agent is rapidly distributed throughout the protected area, and the aerosol particles reach even the most hidden locations. The agent attacks the fire both chemically and physically, and almost instantaneously extinguishes it. Over and above this, long holding times help prevent fire reigniting.

PYROSHIELD

AST identified a need to include a total flooding clean agent halon alternative in its product range. Thus PyroShield, operated from a double-knock fire control system, is designed to protect occupied rooms of all shapes and sizes, including computer rooms, control rooms, server rooms, ships' engine rooms and UPS rooms.

This application, fully approved by Bureau Veritas, has been tested on humans, so its safety is guaranteed. It emits no fogging when discharged and has an added feature of a directional valve system that allows multiple hazards to be protected against at minimal cost.

THE BENEFITS OF PYROGEN

The advantages of using Pyrogen are many and varied. To begin with, the applications are at least three times more effective than halon products. This is because, at a maximum design concentration of 100 g/m^3, Pyrogen exhibits equal or better extinguishing properties than halon 1301 at 330 g/m^3 (5% by volume), as certified by Scientific Services Laboratory (Australia). The product has the lowest extinguishing concentration among commercially available agents, and has been designed as a safe and practical alternative to halon, halocarbons, chemical powders and inert gases.

Bill Starkey - a mining veteran.

Another advantage Pyrogen offers is its ability to be installed internally in the compartments that are to be protected. Units can actually be fitted in the engine compartments of vehicles and machinery. This feature is achieved by the various methods of activation, as well as by the nature and composition of the post-activation residue.

To elaborate, activation methods vary according to the nature of the site of the areas to be protected. Activation can be electrical, from a conventional fire panel, or thermal, from a thermal cord that is attached to the aerosol generator, initiated by a preset temperature being reached. If these two methods should fail due to extraneous reasons, self-activation will occur. The post-activation residue has a 24 kV insulation property, which enables the immediate reuse of electrical equipment following the replacement of the components that created the fire and the replacement Pyrogen unit.

Conventional fire detection and suppression systems require large quantities of smoke and fire before they activate. Once activated, the substation is often flooded with the suppression medium having no access to the switchgear compartments. Naturally, this causes untold collateral damage. The Pyrogen aerosol generators eliminate this problem by allowing for the rapid localisation of the fire, thereby minimising collateral damage.

Pyrogen units are self-contained, with zero pressure. Because they contain no pressurised cylinders or pipework they are extremely light and safe to transport, and they cannot leak, burst or deteriorate. Also with space requirements up to one fortieth of inert gases, and weight penalties of often only 10% of competing systems, Pyrogen is in many cases the only practical halon replacement.

Yet another advantage of Pyrogen applications is their low toxicity gradient. They do not give off aggressive acids, such as hydrogen fluoride upon contact with hot surfaces, nor is chlorine or bromide produced at any stage of its application. Additionally, the units do not deplete oxygen to suppress the fire.

Pyrogen is environmentally friendly. It has been certified as having zero ozone depleting potential and zero global warming potential, and is officially listed by the US Environmental Protection Authority under its halon replacement significant new alternatives programme.

Added to all this is the fact that Pyrogen canisters are simple to install and commission. Their easy plug-in wiring and connectors can reduce installation times by up to a third or less. New canisters can be installed within minutes, and this eliminates the potentially dangerous periods of non-active fire suppression.

Last, but by no means least, Pyrogen is cost effective. Videos and CDs are also available to make it even easier to understand the advantages of Pyrogen products and services.

HT switchgear.

RAVE REVIEW FROM A LEADING GOLD PRODUCER

AngloGold Ashanti electrical manager, Bernard Robinson says, "I hereby wish to endorse the Pyrogen fire suppressant canister system, as used on AngloGold mines for application in electrical switchgear and cabinets. We believe that this product, risk assessed by the International Risk Consultants Association for Marsh (SA), is a step forward in substantially reducing risk exposure in high safety and production risk environments."

PYROGEN COVERS A BROAD RANGE OF APPLICATIONS

Pyrogen is suitable for all classes of fire. From combustible solids, flammable liquids and flammable gases to electrically energised fires and fires caused by fats and cooking oils, no flame can withstand the effects of Pyrogen. The applications are therefore suitable for almost any environment.

In South Africa Pyrogen's biggest customers are the large mining and steel companies, and clients include AngloGold, Anglo Platinum. However, the market for Pyrogen is expanding rapidly, and the units are ideal, for example, for data and PLC installations, mining vehicles, power distribution substations, power stations and warehouses.

ACCEPTANCE SPECIFICATION

Pyrogen's proven track record since inception four years ago has resulted in Pyrogen systems being included in tenders for new switchgear, enabling Pyrogen systems to be supplied to original equipment manufacturers. This is in addition to Pyrogen systems being retrofitted to existing substations with operating switchgear.

In addition to its other certifications, it has also passed the stringent requirements of the Mine Health and Safety Standards Act.

HOW TO PURCHASE PYROGEN

A call to Pyrogen Africa offices from a potential client is followed by a visit to site, where an inventory of equipment to be protected is made. The information is used to prepare a customer's proposal/ quotation. A number of trained and qualified installation engineering teams are available for complete installation and commissioning, or initial tuition to enable clients to undertake their own installations.

BEHIND PYROGEN – A MINING VETERAN WITH OVER SIX DECADES EXPERIENCE

Pyrogen divisional project manager, Bill Starkey, who at 76 years of age, remains enthusiastically engaged in industry related to the mining sector among others, has worked for over six decades on three different continents. He first became involved in the mining industry in 1942 when he began working for the UK's National Coal Board. From the Derbyshire coalfields, and then he worked his way up the ranks until, in 1959, he was appointed chief engineer for the Lodna Collieries in Bengal, India. He retained this position until 1966. Starkey immigrated to South Africa in 1969, where he immediately established four companies that dealt in electrical mining equipment. He then sought a new challenge and became a consultant, until he reached his current position at Pyrogen where he is responsible for product design and installation. MRA

PYROGEN