

Power generation



Challenge

Fire protection is critical – but it should be unobtrusive. Conventional inert gas fire suppression systems often require large pipework systems and significant over-pressurisation openings.

Solution

iFlow technology.

Application

iFLOW technology minimizes disruption by reducing the scale of the pipework installation and reduces the requirements for over-pressurisation in the enclosure.

Inert gas fire protection of critical infrastructure in the power generation industry.

There are numerous fire hazard risks in any power generation facility. However, control rooms, switchgear and sub-stations demand special attention to protect personnel and ensure the continued operation of the plant. Selecting the most appropriate fire safety solution for this critical infrastructure is a vital consideration.

Inert gas fire suppression systems have provided an extremely reliable means of fire protection in power generation facilities for more than 20 years. Now, in addition to the well-documented environmental advantages of an inert gas system, recent innovations have further increased the benefits of these systems.

Unlike halocarbon agents and water-based systems, which are stored as liquids, inert gases are stored under high pressure. This presents a challenge when designing a system as the gases can exhibit certain properties upon discharge that require special consideration to avoid potentially damaging pressurisation effects within the protected enclosure. In conventional systems, these relatively high storage pressures can cause the agent flow rate to reach a peak in the first three to five seconds of the discharge.

This results in the need for pipework to be sized to handle the peak flow rate before it rapidly reduces. This means the piping may be much larger than needed to handle the average flow rate. The peak flow rate is then also used to calculate venting arrangements to reduce the potential for over-pressurisation of the enclosure that can, if not considered, cause structural damage to the enclosure.



GEM has introduced its latest development in engineered fire suppression to provide an innovative solution for Power Generation facilities.

iFLOW technology enables engineers to reduce the space requirements, the complexity of the pipework system and other effects such as pressure relief systems, through component innovation. iFLOW features three separate components – the iFLOW valve, the iFLOW check valve and the iFLOW matrix container racking system for 80-litre containers.

- The iFLOW valve regulates the agent discharge flow, eliminating the peak pressure spikes associated with conventional systems.
- The iFLOW check valve enables the connection of multiple containers without the need for a manifold and maintains the systems integrity by preventing leaks.

- The final component in the system, the iFLOW matrix container racking design, offers greater flexibility to position the storage containers in conventional rows or around objects, such as structural columns, to fully exploit the space available. Containers are offered in offered in 80 or 140-litre capacities and, along with the other features, these give the designer further flexibility in the way the system is designed.

iFLOW systems deliver exceptional environmental credentials when used in conjunction with INERGEN, IG-55 and IG-100 to safely and effectively suppress fires with minimal environmental impact.

GEM inert gas systems carry many international approvals providing the user with the confidence they have been thoroughly and independently tested to ensure the highest standards available in the industry today.

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