



# Power generation



## Challenge

Protecting substations, electrical switch rooms, control rooms, data communications and other critical areas.

## Solution

GEM® SAPPHIRE® PLUS Clean Agent Fire Suppression System.

## Application

Protecting critical operational infrastructure in cramped conditions.

Power stations and power generation facilities incorporate a wide range of critical and ancillary services and buildings to ensure continued operations and plant uptime. Away from the primary power circuit, boiler and turbine system, vital facilities such as substations, cable voids, control rooms, data communications and backup systems must be effectively protected against fire risk. Selecting the right solution to protect this critical plant infrastructure is key.

We understand the challenges of fitting fire suppression systems in the space-limited infrastructure of power generation facilities, and our solution is twofold: a time-proven clean agent delivered to the protected area using state-of-the-art SAPPHIRE PLUS suppression system technology.

SAPPHIRE PLUS clean agent systems contain 3M™ Novec™ 1230 fire protection fluid, an effective fire suppressant designed for special hazard, high-value applications. This environmentally-friendly halocarbon liquid is a replacement for halon as an alternative to HFCs, HCFCs and PFCs. SAPPHIRE PLUS clean agent systems provide the right balance of fire suppression performance, end-of-use safety and environmental sustainability. The agent is a clear, colourless, low-odour liquid that is super-pressurised with nitrogen and stored in high-pressure containers. Although it is stored as a liquid, it will turn to gas upon discharge, making it an effective total flooding agent for power generation fire hazards. As a clean agent, it leaves no residue behind and will not affect sensitive, high-value assets such as electronic switchgear and machinery.

Advanced SAPPHIRE PLUS system technology enables engineers to reduce storage container footprint, complexity and size of the pipe network. Its innovative electric actuator contains a built-in placement indicator, eliminating the need for a secondary device. The system is approved for use with selector valves, allowing a single container bank to provide fire protection to multiple hazard areas. The technology also provides a storage pressure of 70 bar (1013 psi), enabling greater agent capacity in fewer containers. The increased storage pressure also facilitates extended pipe run capabilities.



## Effective fire suppressant designed for special hazard, high-value applications



The SAPHIRE PLUS system is most effective when used with an AUTOPULSE automatic detection and control system to release the clean agent rapidly. The detection system is used to either directly actuate a fire suppression system or to notify personnel that the system should be actuated by manual/pneumatic means.

The GEM SAPHIRE PLUS system is UL listed and carries FM and EN approvals. The system can be designed to meet the requirements of NFPA 2001, EN 15004 and ISO 14520 with components approved to provide top-quality fire suppression.

SAPHIRE PLUS technology expands system flexibility so engineers can accommodate the fire suppression system in a less obtrusive way by addressing many of the concerns previously associated with halocarbon systems.