



FIRETRACE[®]

AUTOMATIC FIRE SUPPRESSION SYSTEMS

WIND ENERGY

Fire Protection Solutions



Fires account for 7% of wind energy insurance claims and 9% of insurance losses according to Royal Sons Alliance.



\$750,000 - \$6 million is the range of property damage loss from equipment and down time, based on reported incidents.

THE PROBLEM

With the height of many wind turbines nearing 300 feet (91 meters) and a cost of roughly \$1 million per MW, when a fire occurs the only option is to wait patiently for the fire to burn out. This is very expensive and dangerous for employee safety, equipment down time/ replacement and debris management.

The ever-increasing awareness on the renewable energy sector has made it more important than ever to be prepared and protected against known fire hazards. As of January 1, 2010 NFPA 850 includes wind turbine and out building fire protection recommendations identifying typical hazards specific to the wind industry. Frequency of reported fire incidents are on the rise and with the renewable sectors continued growth it is important to take the first steps in being proactive versus reactive to fire safety.

Until now, there have not been good fire suppression options available to the industry. Traditional fire suppression systems have been impractical due to the complexity, weight of the system and environmental impacts including vibration, temperature extremes, dust and airflow. The result — ineffective detection and suppression of a fire.

FIRETRACE ADVANTAGES:

- ✦ Protects multiple critical enclosures with one system
- ✦ Requires no electricity offering uninterrupted service 24/7
- ✦ Allows for inexpensive installation, maintenance and recharge

THE FIRETRACE SOLUTION

Firetrace offers a fully automatic fire suppression system ideal for the wind industry. In the nacelle and base of the tower there are specific areas Firetrace recommends protecting, which are also identified by NFPA 850 including:

- ✦ Control Cabinet
- ✦ Converter Cabinet
- ✦ Hydraulic Station
- ✦ Transformer
- ✦ Brake
- ✦ Capacitor Cabinet

Firetrace protects these areas with targeted fire suppression solutions. As these areas are considered micro-environments within the larger nacelle or tower, much smaller amounts of agent are required, resulting in systems that add a few pounds, minimal space requirements, and safety for equipment and staff in the event of a fire.

Be sure to ask for Genuine Firetrace equipment in protecting your investment!

- ✦ Initiates shut down or sends an alert to your monitoring system
- ✦ Eliminates concern for false alarm or false discharge
- ✦ Provides immediate detection and delivery of agent at the heart of the fire

TAILORED SOLUTIONS



Direct Release Systems

The Direct Release System utilizes the Firetrace Detection Tubing as both the fire detection device and the fire suppressant delivery system. The portion of the tube nearest the hottest point of the fire ruptures, forming an effective discharge “nozzle”. The pressure drop in the tube releases the entire contents of the cylinder through this nozzle.



Indirect Release Systems

With the Indirect Release System, the Firetrace Detection Tubing is used only as a detection device. The fire suppression agent is delivered via copper tubing, stainless steel tubing or braided copper hose. Once the tube “bursts”, the suppressant is discharged through strategically placed nozzles within the protected enclosure.

HOW IT WORKS

Firetrace is a totally self-contained fire detection and suppression system. It requires no electricity to operate and offers automatic 24/7 protection.

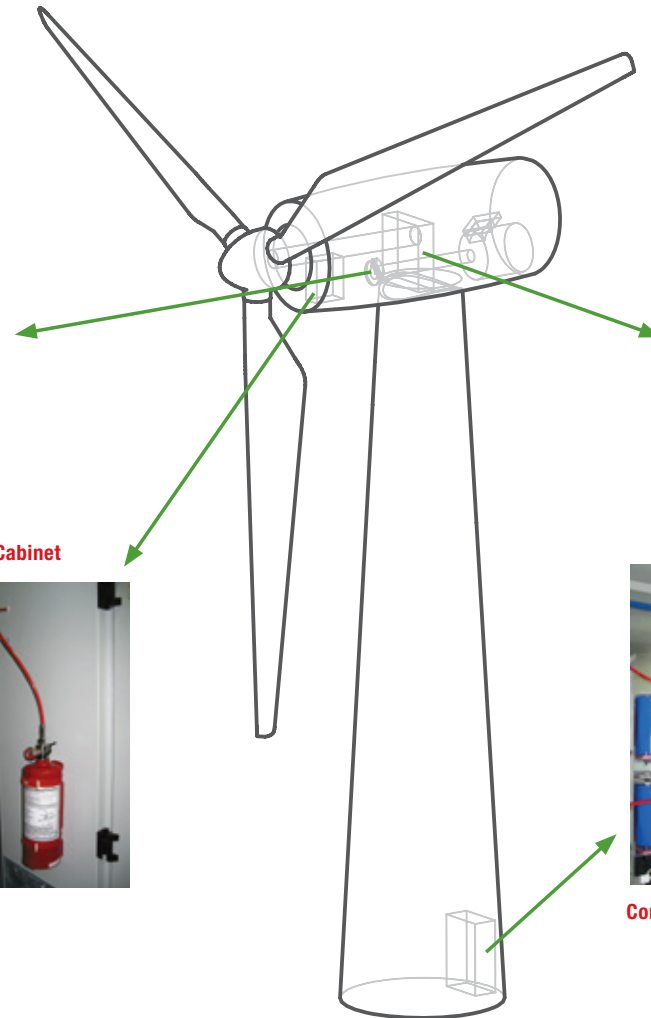
The proprietary red Firetrace Detection Tubing is the key to detecting fires where they start. By routing the tubing through the areas to be protected, Firetrace’s detection can get right to the source of the fire.

Firetrace tubing is constructed from a proprietary polymer composition; it is immune to the dirt, temperature extremes, vibration and shocks associated with wind turbines. When the tubing is exposed to the heat and radiant energy from a fire, the tubing bursts and delivers the fire suppressing agent directly to the source of the fire.

Firetrace can also be integrated with system controls to activate an alarm and initialize the turbine’s shut down.



Hydraulic Station



Control Cabinet



Capacitor Cabinet



Converter Cabinet

FIRETRACE®

AUTOMATIC FIRE SUPPRESSION SYSTEMS

FIRETRACE® Wind Power Applications

Firetrace has more than 150,000 systems installed protecting critical equipment worldwide. Firetrace has its origins in the late 1980's in the United Kingdom as a special hazard fire suppression system and has continued its growth protecting military vehicles, data centers, power generation facilities, fume hoods, machining equipment and electrical cabinets worldwide.

Firetrace solutions are installed on some of the most popular wind turbines globally and are able to be fit without void of manufacturer warranty on new or existing wind turbines. Firetrace will conduct a fire assessment and provide a customized method of protection, required combination of systems and the most cost-effective fire suppression solution available on the market.

Request fire suppression by Firetrace during your next operations and maintenance visit or for your future wind turbine developments.

Distributor opportunities are available. Please contact Firetrace to learn more.

Firetrace is available exclusively through our worldwide distributors, each of which has been properly trained in the installation and maintenance of Firetrace systems. To locate the Firetrace distributor nearest you please contact us at:

World Headquarters

Firetrace International

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Firetrace currently has more than 20 international approvals and listings, including: UL, CE, FM, ULC & ISO9001. Approvals and listings vary by system type and agent.