

FIRETRACE INTERNATIONAL (EMEA)

FIRETRACE® fire protection for Australian wind turbines

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37 wind turbines installed at the new Waterloo wind farm project in South Australia have been equipped with self-contained, automatic detection and suppression systems that ensure fast acting, around-the-clock fire protection.

Each of the transformer rooms and electrical cabinets in the nacelles of the 3 MW Vestas V90 turbines have been fitted with FIRETRACE® systems that have shown themselves to reliably withstand the vibration, dirt, dust and temperature extremes known to cause traditional systems to fail in these challenging environments.

The decision to entrust fire safety to FIRETRACE® followed extensive field trials undertaken in wind turbines in Tasmania by Hobart, Tasmania-based Roaring 40s Renewable Energy – a partnership between China Light & Power Group and Hydro Tasmania – which is operating the AUD\$330 million, 111 MW Waterloo farm. The farm is located near the Clare Valley, about 100 km north of Adelaide on a rocky ridge surrounded by gently sloping farm land.



The Waterloo wind farm fire suppression systems were supplied and installed by Delta Fire Australasia Pty Ltd, the authorised distributor for Firetrace International's FIRETRACE. The company supplied three systems for each turbine. A single direct-discharge FIRETRACE system was chosen to protect the turbine's three electrical cabinets, while two indirect discharge systems were selected for the transformer room. All use 3M™ Novec™ 1230 Fire Protection Fluid, a fast, reliable and environmentally sensitive suppression agent that has been used extensively by Firetrace International in the 150,000 FIRETRACE installations around the world.

Genuine FIRETRACE from Firetrace International is the only UL [Underwriters Laboratories] listed and FM [Factory Mutual] approved tube-operated system in the world that is tested as an automatic fire detection and suppression system. Significantly for wind turbine applications, it is intrinsically safe, requiring neither electricity nor external power. It is what is called a self-seeking system, where the extinguishing agent cylinder is connected to a specially developed polymer tubing via a custom-engineered valve. This leak-resistant and temperature-sensitive proprietary Firetrace Detection Tubing is a linear pneumatic heat and flame detector that is routed throughout the area being protected.

Immediately a fire breaks out, this tubing ruptures and the suppression agent is released automatically nearest the point where the most heat is detected, extinguishing the fire precisely where it starts and before it can take hold. In the FIRETRACE Direct Release System protecting the three electrical cabinets in the Vestas turbines, the Firetrace Detection Tubing acts as both the detection device and the suppressant delivery system. When the tube ruptures it forms an effective spray nozzle that releases the entire contents of the cylinder to suppress the fire in whichever cabinet the fire breaks out.

The two Indirect Release Systems protecting the transformer room use the tube as a detection and system activation device, but not for the agent discharge. The rupturing of the tube brings about a drop of pressure causing the indirect valve to activate. This diverts flow from the Firetrace Detection Tubing and the agent is discharged from the cylinder through diffuser nozzles, flooding the entire transformer compartment.

Commenting on the installation, Bob Grieve, Managing Director of Delta Fire says: "The area around Claire Valley can be very dry and Roaring 40s felt it was essential to ensure that a fire would be extinguished quickly, before there was any opportunity for burning embers spread from the 80-metre high turbine." He continues: "The Danish-manufactured turbines were delivered to Roaring 40s at Port Adelaide, where Delta Fire fitted the FIRETRACE systems before they were transported by road to Claire Valley. The final commissioning of the systems took place once the turbines were erected on site."

Genuine FIRETRACE is available only via Firetrace International's global network of authorised distributors. These trading partners are skilled in hazard analysis, agent and system selection, installation, commissioning and support, and use only genuine FIRETRACE components. Details of these authorised distributors are available by contacting Firetrace International at info@firetrace.com. Further information on FIRETRACE is available from Firetrace International's EMEA head office in the UK on +44 (0) 1293 780390, or from Firetrace International's global headquarters in Scottsdale, Arizona USA on +1 480 607 1218. The company's website is at www.firetrace.com. Additional information on the Waterloo wind farm installation is available from Delta Fire Australasia Pty Ltd on +617 3349 7817 or via email at sales@deltafire.com.au.

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