Wind Turbines

FireNET Vapor®

BY HOCHIKI

Uptime, The Critical Component…

Traditionally, wind turbines were protected by thermal trace cables and point smoke detectors. The issues identified by end users with these systems included poor alarm response times, false alarms due to large temperature changes within the generator housing and the inability to properly handle and prevent nuisance alarms during emergency stop functions when large amounts of airborne contaminants are generated.

FireNet *Vapor*® aspirating smoke detection systems provide superior protection and overcome the issues associated with conventional smoke detection systems.

Vulnerabilities Within Wind Generators

- Emergency and operational braking causing elevated smoke and dust levels
- High voltage cabling
- High and low voltage controls and equipment
- Overheating electrical control equipment (usually cabinet-enclosed)
- Internal PC control equipment
- Overheating of mechanical components that wear
- Arcing, lightning and static electricity
- Different air speeds within the generator
- Different environmental conditions
    - Sub zero to extreme heat
    - Heat, cold, wet, dry, ice
- No nuisance alarms tolerated
- Early warning required for controlled shutdown
- Inaccessibility for maintenance
- Minimal servicing time window
- Limited space-compact detection is critical
- Cost and complexity of retrofitting

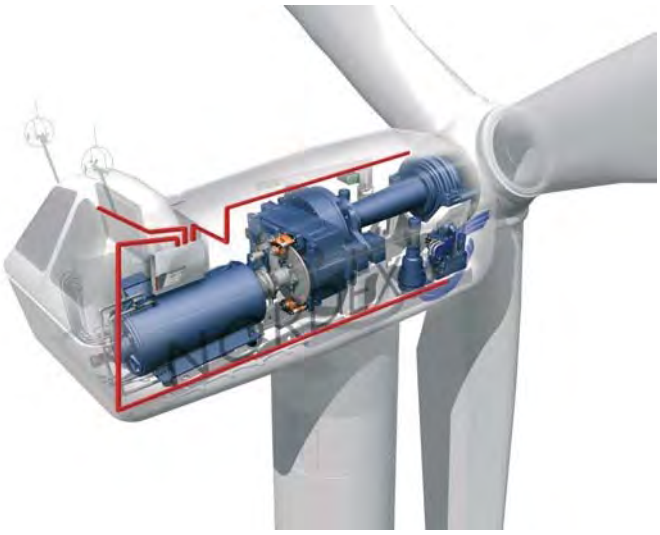
Standard, Yet Unique Solutions!

VPR-1P, VPR-1, VPR-SD1 and VPR-SD2
High sensitivity aspirating smoke detectors

How It's Done…

The air from the area is actively drawn to the detector through a network of pipes.

The pipes, which can be rigid or flexible, are routed along the critical areas of the wind generator housing and connected to FireNet *Vapor*® detectors. Sampled air can be drawn through a series of filters to a laser detection chamber where the smoke level is determined.



Different alarm levels can be linked to individual outputs to provide responses to each alarm level. An input from the braking mechanism is provided to the detector to avoid alarm activity during emergency and operational braking therefore providing a highly sensitive system that prevents unwanted nuisance alarms. The system can be connected to fire alarm control panels via relay contacts and modules, and /or remotely to the FireNet *Vapor*® Explorer management software via a TCP/IP network, allowing full monitoring and control of the whole site.

FireNet *Vapor*® Explorer has the system at your fingertips...

FireNet *Vapor*® Explorer management software provides full and comprehensive integration of your fire protection systems. FireNet *Vapor*® Explorer configures, monitors and troubleshoots your fire systems. It is easy-to-use and has been designed to provide you, the operator, with complete control. The user-friendly interface allows you to quickly assess and respond to system events - all from one convenient location. FireNet *Vapor*® Explorer is a total solution for integrated control and monitoring of your Very Early Warning smoke detection system.

Other Industries

Unmanned Sites

- Fully self-contained
- Additional environmental parameters monitored
- Web access

Warehouses

- Pipes can be placed within the racking
- Minimize maintenance costs
- Access difficult to reach areas which cannot be monitored by normal detection

Correctional Facilities and Detention Centers

- Tamper proof air sampling
- Central Maintenance facilities

Cold Stores

- No heated detector bases
- Very Early Warning
- Unaffected by high airflows
- Simple installation

Mines

- Individual protection of high-voltage switchgear cabinets
- HV cabinets are bolted and cannot be opened easily
- PLC and control rooms
- Electrical substations

Historic Buildings/ Museums

- Discrete monitoring
- Rapid response
- Monitoring valuable assets

IT Rooms

- Extremely high sensitivity
- Individual cabinet identification
- Unaffected by high air speeds

Exclusive Residences, Apartments, Hotels, Shops and Offices

- Aesthetic, invisible
- Remote web monitoring

Utility Providers

- Large area coverage 2,000 sqm (20,000 sq ft)

Transport

- Ideally suited to long compartments
- Concealed detection
- Automatic air pollution compensation
- Multiple sectors for carriage sets with integral cabs

Significant Religious Buildings

- Unobtrusive detection
- Earliest detection

Wind Turbines

- Smoke detection control during braking both Emergency and Operational
- Unaffected by arcing, lightning and static electricity
- Unaffected by air speeds within the generator
- Insensitive to environmental conditions







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