



**VESDA®**

Very Early Warning  
Smoke Detection

## Power Generation

Protecting power supply from the threat of fire is a key priority of any power generation plant:

Nuclear

Fossil Fuels - Oil, Coal, Gas

Hydroelectric

Geothermal

Biomass

Cogeneration

Solar Power

Wind Power



 **xtralis®**

# Protecting energy supply from the threat of fire

The constant generation and supply of electricity is critical to all sectors of the community. Industrial, commercial and domestic dependency on a continuous source of power cannot be compromised by the risk of fire.

## Expensive consequences

A fire in a power generation facility will:

- Cause enormous damage to equipment and buildings.
- Disrupt the supply of electricity that is central to the lives of millions of commercial and residential customers.
- Potentially affect the health and welfare of neighbours and employees.
- Have long-term implications on the environment.

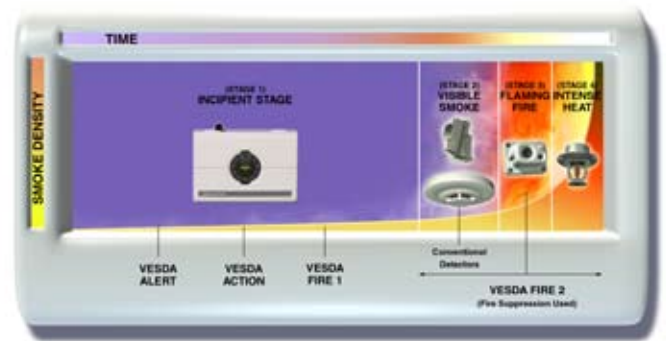
*A fire originating from a ruptured seal in the bearings of a turbine can result in damages of up to 25 percent of the turbine generator unit's cost. Fire damage to even a small area of cable can cause extensive disruption to electricity supply.*

## The Risks & Challenges

- The dusty environment in a coal bunker makes it difficult to detect smoke and causes traditional detectors to become contaminated, resulting in false alarms and reduced sensitivity.
- The large open spaces in generator halls and nuclear spent fuel halls means that smoke may stratify, not reaching detectors on the ceiling.
- Some facilities are located in remote areas with minimal staff, increasing the time it would take for a fire to be controlled.
- Smoke originating from within electrical equipment or mechanical systems is difficult to detect and can cause extensive damage to equipment.
- The large quantity of stored fuel and combustible materials means an undetected fire would spread rapidly.

## How do you overcome these risks & challenges?

Use an Air-sampling Smoke Detector (ASD) that provides flexibility in sampling hole location, multiple configurable pre-alarms and a wide sensitivity range for a performance based design approach to fire protection.



A VESDA smoke detector can be configured to detect a fire at the earliest stage. The multiple alarm levels can be configured to initiate an appropriate response.

## Why use a VESDA ASD system?

VESDA detectors buy time. Time to respond to a fire threat, minimizing damage and business downtime. The key advantages are:

- Superior performance in harsh or toxic environments and a high resistance to contamination through the use of our clean air barrier technology that protects the detection chamber.
- The ability to locate sampling holes where smoke will travel and to position the detector in a location that is easily accessible for maintenance.
- Multiple configurable pre-alarms to provide, for example, very early warning for investigation and subsequent warnings to initiate automated fire department notification, evacuation and suppression.
- Remote monitoring and configuration of detectors in unmanned sites.
- The installation of sampling points in or near critical equipment, providing the earliest possible warning of a threat.
- The wide sensitivity range of a VESDA detector ensures the earliest possible warning of a fire caused by an electrical fault.

## Examples of areas that can be protected by a VESDA system.



### Hydroelectricity Generators

The windings, rotor, turbine and other mechanical parts can be protected by positioning VESDA sampling pipe around the exhaust vents of the generator. The VESDA detector can be positioned for easy maintenance.



### Nuclear and Coal Generators

When equipment should not be penetrated an alternative to placing VESDA sampling pipe inside generators is to position it on or near the equipment, to ensure the earliest detection of smoke.

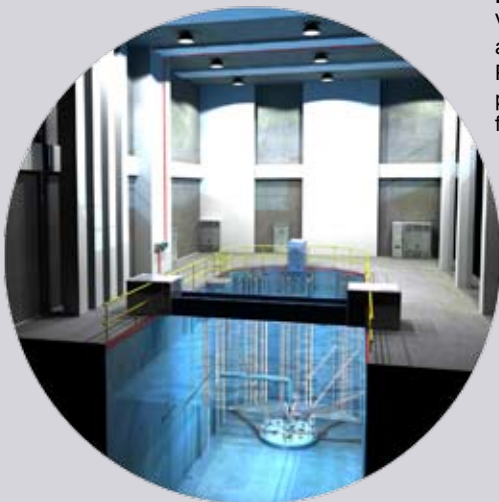
### Central monitoring

The VESDA System Monitoring (VSM) software can be used in the control room to monitor and control VESDA devices across the entire VESDA network and from remote locations.



### Control & switch rooms

VESDA sampling points can be installed inside or above equipment cabinets. Pipework can also be located in the ceiling void, floor void and at the return air grille of the Air Handling Unit.



### Nuclear Spent Fuel Pools

VESDA sampling pipes can be placed across the high ceilings of the Spent Fuel Pool and the VESDA detector can be positioned in an area that is accessible for maintenance.



### Cable Tunnels and Chambers

VESDA sampling pipe should be installed above cable trays or along the ceiling of tunnels. The VESDA detectors can be installed at a central service point for easy access.

Other areas which can be protected by VESDA are salt-spray rooms, reactor water clean-up rooms and training simulator rooms.

Our global network of offices and representatives means that help is soon at hand



## Power generation facilities that are protected by VESDA smoke detectors

Loy Yang A & B	Vastar Resources	Berkeley Nuclear Power Station
Hume Weir Power Station	Taiwan Power Company	Lower Colorado River Authority
Hazelwood Power Station	Enron	Bukit Indah Power Station
EEL – Energy Electric	Southern Hydroelectricity	Sellafield Nuclear Power Station
Elsam Power Station	Ontario Power	National Power Corporation
Heysham Nuclear Station	Savannah River Power	Malaysian Natural Gas Project
Illinois Department of Nuclear Safety	Snowy Mountains Hydroelectric Authority	
Bruce Power Nuclear Station	Baywater Power Station	

## Global Approvals



CCCF

УП 001

## Need more information?

VESDA detectors are also used to protect Wind Power Generation plants and Power Transmission facilities. To obtain copies of VESDA application brochures visit our website or contact our nearest office.

[www.xtralis.com](http://www.xtralis.com)

**The Americas** +1 781 740 2223 **Asia** +852 2297 2438 **Australia and New Zealand** +61 3 9936 7000  
**Continental Europe** +41 55 285 99 99 **UK and the Middle East** +44 1442 242 330



The contents of this document is provided on an "as is" basis. No representation or warranty (either express or implied) is made as to the completeness, accuracy or reliability of the contents of this document. The manufacturer reserves the right to change designs or specifications without obligation and without further notice. Except as otherwise provided, all warranties, express or implied, including without limitation any implied warranties of merchantability and fitness for a particular purpose are expressly excluded.

This document includes registered and unregistered trademarks. All trademarks displayed are the trademarks of their respective owners. Your use of this document does not constitute or create a licence or any other right to use the name and/or trademark and/or label.

This document is subject to copyright owned by Xtralis AG ("Xtralis"). You agree not to copy, communicate to the public, adapt, distribute, transfer, sell, modify or publish any contents of this document without the express prior written consent of Xtralis.

Document: 11652 Version:01