CUSTOMER SUCCESS STORY

WORLD RENOWNED MEDICAL SUPPLIES MANUFACTURER UPGRADES FIRE DETECTION AT QUEENSLAND FACILITY WITH NEW **VESDA-E VEU** VERY EARLY WARNING SYSTEM

Introduction and Overview

Cook Australia is part of an American privately held company founded in 1963 and is ranked as one of America's largest private companies. With many facilities located throughout the world 'Cook Medical Brisbane' is involved in the manufacturing of medical devices at their facility at Technology Park, Eight Mile Plains. Cook Medical now employs about 600 people in Australia.

Cook Medical was approached by Xtralis and asked to become involved in a trial program involving a new advanced VESDA-E product, VEU. Cook management recognised the advantages of the VEU and after some initial discussions agreed to be involved with this new product and the beta trial.

The trial application presented itself in the form of the main warehouse where Cook manufactures high value medical devices, packages these and distributes to end-users. The warehouse is a highly managed and strictly controlled operation where the environment is extremely clean and dust particulates within the warehouse are regularly monitored. However the risk of fire in a facility of this nature is always present. The trial was undertaken to compare VEU performance to two existing FastSense Plus systems already installed at the Eight Mile Plains warehouse.

Meetings were held with the Cook Medical and the Cook fire services maintenance contractor (Creative Fire - Brisbane) to discuss the trial objectives. Upon final agreement with all parties the installation commenced.

PROJECT:
Cook Medical

END USER/LOCATION:
Australia

INDUSTRY:
Manufacturing

PARTNERS:
Creative Fire, Fire Services Maintenance Contractor

SOLUTION:
VESDA-E VEU

Cook Medical Warehouse

The warehouse is approximately 2470 m^2 (65 m x 38 m) with a ceiling height of 8.5 m (max point). One VESDA VLX-100 protects the sterilization area of approximately 495 m^2 with the balance of the warehouse covered by two FastSense Plus HSSD2 detectors. Both detectors are mounted on the mezzanine level about 2 m from the ceiling and comprise identical sampling pipe layouts providing area coverage of approximately 1975 m^2. Detectors, pipe layouts and smoke transport time requirements are in accordance with AS1670.1-2004.

Warehouse view

Mezzanine view

Warehouse – Beta Trial

The purpose of the trial was to demonstrate that both existing FastSense detectors can be substituted for one VEU ultra high sensitivity detector, which, although mounted at ground level (as opposed to the FastSense Plus on the mezzanine level) could provide improved detection coverage and performance (i.e. sensitivity, smoke transport time, system balance).

Maintenance was also a consideration for the trial and the VEU was located away from the direct staff working areas in a location that would provide ease of access for the fire maintenance technicians, yet not interrupt warehouse operations.

Fig. 1 - VEU in situ in Warehouse
The VEU detector was mounted approx. 1.5 m from floor level (6.8 m from ceiling level) and supported a 4-pipe layout. Sampling holes were arranged similar to the existing installed pipe network, providing and enabling identical area coverage whilst allowing convenient mounting for ease of maintenance.

VESDA-E VEU & Fast-Sense Plus Settings

Despite the ultra high sensitivity capability of the VEU the sensitivity thresholds of the VEU were initially set much the same as the factory default settings. This was done primarily to monitor stability and gain some performance data to compare between the existing two FastSense Plus detectors and the VESDA-E VEU. The FastSense Plus detectors were not altered and the settings of both were those as set at the time of the original commissioning - Table 1.

	FASTSENSE Obs/m	VESDA-E VEU Obs/m
Fire 1	1%	2%
Fire 2	0.15%	0.14%
Aux	0.19%	0.08% (Action)
Pre-Alarm	0.13%	0.03% (Alert)
Delay	5 seconds	10 seconds

Table 1 - FastSense Plus and VEU operating Settings

Final commissioning, including smoke testing of the system was completed with the fire contractor.

After the first two months of the trial, data was obtained from the VEU for evaluation. The data showed that the detector remained very stable over the period with no issues. It was also noted that background obscuration level in the warehouse (monitored by the VEU) was surprisingly low, well below that of the default VEU alarm sensitivity settings.

Whilst fire is certainly a major concern for Cook Medical smoke contamination from a potential incipient fire would have a significant impact on their operation if one were to occur. The high sensitivity capability of VEU to detect any potential smouldering fire at the very earliest possible stage presented a significant advantage. An interesting aspect of the warehouse, which was noted in the event logs following several months of trial, was how clean this facility was. The background level continued to remain surprisingly low hovering between 0.0002 %Obs/m and 0.008 %Obs/m. This information showed that any dust/contamination

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Creative Fire Feedback

present in the environment was negligible.

The VEU's advanced (Flair™) detection chamber coupled with new improved dust rejection technology provided the opportunity to further test the detector capability. With enhanced sensitivity (up to 15 times greater than current VESDA detectors) and with considerably longer linear and branched pipe networks to protect greater area coverage the VEU was the ideal solution for Cook Medical.

Proving the VEU's detection sensitivity capability in an environment where cleanliness was of paramount importance and the reliability to detect any potential incipient fire was a critical factor for Cook. Given the detectors stability within the environment and having consideration to the background the fire thresholds were adjusted further based on the event log history

Spikes shown in the graph below, Fig.2 can be associated with loading dock doors being opened. The Alert level was adjusted to 0.0400 %Obs/m to cater for this factor.

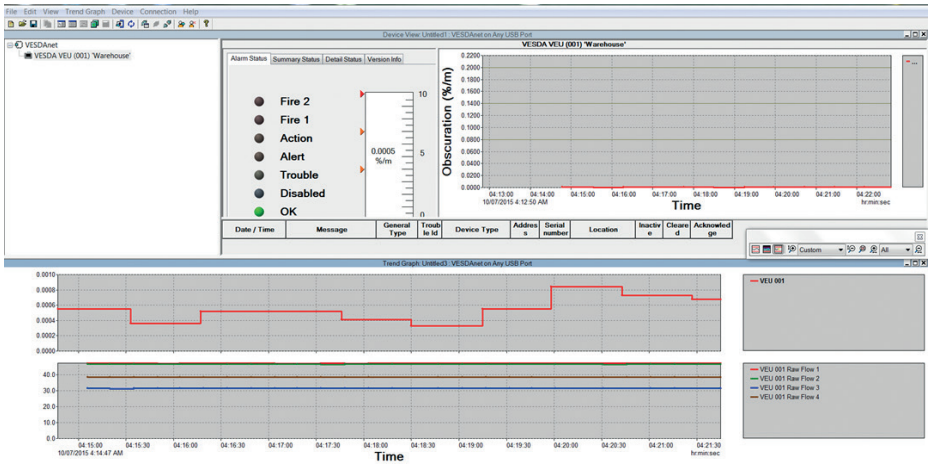

Fig 2 - VESDA-E VEU background event log recording

VESDA VEU Trial Results

Following several months of stable performance Cook Medical Facilities Manager (Ms Kelly Francis Grieg) was impressed by the VEU performance. It was agreed that the two FastSense Plus detectors should be disconnected from the fire system and the VEU take their place.

The VESDA-E VEU detector now installed at the COOK Medical Warehouse in Brisbane offers "State-of-the-Art" technology to effectively detect the earliest possible fire threat in this world-class medical facility.

Conclusion

This trial shows that one Xtralis VESDSA-E VEU system can be successfully substituted for two detection systems (FastSense) protecting the Cook Medical warehouse, whilst allowing convenient detector mounting for ease of maintenance. VESDA-E VEU provides superior detection performance over the two existing systems in the following manner:

- VEU coverage area equals to the sum of two existing FastSense Plus detectors
- Improved smoke transportation time
- Similar system balance
- Greater minimum hole and overall system sensitivity
- Greater operational stability over time

The key value proposition of the deployment of VEU in the Cook Medical warehouse is summarised as follows:

"... As a leader in the field Cook Medical embrace new innovations and technology. We were very impressed with the capability of the VEU and particularly with its ability to chart the background environment within the warehouse..."

Cook Medical Feedback

1. Greater detection performance, reliability and stability through the Flair detection technology
2. Service and maintenance requirements are limited to one detector instead of two. Lesser materials, labour time, and callouts (unscheduled) will be required for the VEU system as opposed to existing FastSense Plus translating to a VEU lower total cost of ownership (TCO).
3. The VEU installed at ground level allows for ease of maintenance since less time is required to access the detector further reducing VEU's TCO.

Finally, Xtralis would like to acknowledge Ms Kelly Grieg (Facility Manager- Cook Medical) and Glen Hendrix (Creative Fire Managing Director) for their great support throughout the VESDA-E VEU trial period.

Cook Medical feedback

We were a little hesitant initially when first approached by Xtralis to conduct a trial here at Cook, however after the system was thoroughly explained together with the advantages of this new detector we were keen to proceed. Our current Fire Service Contractor who has been providing our company with excellent service for some years also showed their support to the new Xtralis product which provided increased confidence in the system.

As a leader in the field Cook Medical embrace new innovations and technology. We were very impressed with the capability of the VEU and particularly with its ability to chart the background environment within the warehouse.

This unique detector feature clearly demonstrated that our warehouse was maintaining a very high standard of cleanliness as required by health bodies.

The significant advantage of VEU as opposed to the original detectors installed is that one VEU detector will now cover the same area once required by two detectors. This represents a cost saving in terms of initial outlay as well as ongoing fire service maintenance.

We are very pleased we chose to move down this path with Xtralis and the VEU.

Cook Fire feedback

After discussions with Xtralis and familiarising ourselves with the new VEU detector we were quite excited when given the opportunity to be involved with the installation at Cook Medical. This stylish looking detector does just what Xtralis says it can.

Programming was easy and in all the trial went without a hitch. The biggest benefit to the client was that one VEU took the place of two other detectors thus providing a considerable saving in terms of equipment and of course labour. It was also able to be mounted at a more convenient location away from the areas where access would not interrupt business operations.

The improved features, sensitivity and stability of the VEU have certainly put this Xtralis detector at the forefront of ASD technology.

We will certainly be looking to use the VEU where opportunities present.