

Managing operational risk with proactive maintenance

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Buildings and business operations rely on critical equipment to function. While this may differ between industry sectors and business operations, for instance within manufacturing where machinery is mission critical or within a high-rise office park where air-conditioning is vital, the fact remains that without this equipment, the business would be unable to function.

Maintaining this equipment, then, is a matter of some importance, and a proactive building-maintenance strategy can not only help to manage expenses by prolonging the life cycle of equipment, but can also reduce the likelihood of this equipment failing without warning, causing loss of productivity and potentially causing disruption, depending on the nature of the machinery.

Infrared testing

However, intrusive equipment maintenance may not be necessary, as it can cause problems of its own, including loose connections, shortened equipment life and actually introducing points of failure where they may not have existed before. Infrared testing is one method of proactive maintenance that circumvents this issue, as it is non-invasive and can help to identify if there are any problems with equipment without physically examining it.

This method can be used on any equipment that generates a heat profile when in operation, including the main electrical infrastructure, critical electrical equipment, transformers, switch gear, transmission lines, distribution boards, motors, compressors, boilers, air-conditioning systems, lighting and other electronic devices. Using infrared testing, it is possible to run diagnostics and identify points of failure through variations in temperature profiles without physically touching the equipment.

Several advantages

This has several advantages. Testing can be conducted in real time at peak operational times, without the need to switch equipment off and disconnect it, enabling inspectors to verify and monitor operational aspects of equipment. The infrared testing also provides a visual overview of the status of the equipment. Being highly sensitive, it can pick up even the smallest anomalies that may indicate points of failure. These can then be checked against benchmark thermal profiles for particular equipment to determine if action needs to be taken.

This method can be used effectively on equipment that is dangerous to get physically close to, such as high-voltage equipment. It allows diagnostics to be conducted on a wider variety of machinery. It also enables remote inspections of critical equipment and equipment that is difficult to access, as an infrared tester can be installed on the machines

themselves for constant monitoring.

Infrared and other non-invasive techniques are more cost- and time effective than traditional maintenance methods, and enable proactive programmes to be developed. PLEASE QUERY THIS, IT DOESN'T MAKE SENSE based on the data obtained from monitoring equipment. This can then help to identify future points of failure, improve the longevity of equipment, and create a managed environment that is far more effective in the long term than a reactive approach.

A tailored maintenance strategy

However, proactive maintenance should always be combined with a tailored maintenance strategy that is specific to the needs of an individual building or the business as a whole, linked in with the financial performance and strategy of the organisation. There is no "one size fits all" approach when it comes to building maintenance and this strategy should balance the risk associated with failing equipment with the cost associated with maintenance.

Some organisations require constantly running equipment, whereas others can withstand a certain amount of downtime, which should be considered in the maintenance strategy. In some instances, running equipment to failure may be the most cost-effective option, so this must also be taken into account, along with legislated scheduled maintenance on certain equipment, such as fire-prevention systems, elevators and escalators, vessels under pressure and load equipment. These must be maintained at specified intervals for insurance, warranty and legal purposes.

When it comes to developing a maintenance strategy, it is useful to work with a specialised outsource provider that can help the organisation to determine how to maintain equipment and drive this. Each client and environment is unique, so the approach should be tailored based on a basic strategy outlined, which can then be refined by the service provider to deliver the best solution for an individual environment.

Complex and expensive process to bring in-house

Proactive monitoring and maintenance can be a complex and expensive process to bring in-house, due to the cost of labour and equipment, the specialised skills needed and the part-time nature of this type of job. Outsourcing this process to an experienced service provider will not only ensure that organisations can leverage economies of scale and access a cost effective service, but will also provide assurance that the provider will have the most up-to-date knowledge of what points of failure to look for across different equipment, as well as the latest information, equipment and technology to provide the best levels of service.

Maintenance of buildings and the variety of equipment they contain is a vital part of running any successful business. By defining the maintenance strategy correctly and adopting the right mix of proactive and reactive maintenance, organisations can save money, prolong the life of equipment, managing both operational and reputational risk through an intelligent process that matches the finances, needs and strategy of the business as a whole.

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