MITSUBISHI ELECTRIC
Changes for the Better

Automating the World

Maintaining Sustainable Plant Performance

Manufacturing plants face production maintenance challenges daily, as a fact of life. Chris Evans, Strategic Development Manager at Mitsubishi Electric Automation Systems, explains how adopting a life cycle management strategy can mitigate these issues, and deliver increased production quality and sustainable plant performance.

It would be easy for automation vendors to simply see their role as suppliers of equipment that automates plant assets and be happy that, with that, their journey ends. However, it can be argued that a shift in perspective is needed in the supply chain, with manufacturing plant stakeholders increasingly looking to work with suppliers throughout equipment lifecycles. Indeed, this relationship, as a lifecycle partner, should reach beyond the initial point-of-purchase and should extend to the plant's entire lifetime.

Yet before discussing how that could work, there needs to be consideration of the critical maintenance challenges facing manufacturing plants to maintain continuous production.

Maintaining plant assets and increasing asset availability

It would be easy to simply deploy intelligent digitalisation techniques, such as predictive maintenance, to solve these problems. Whilst this should undoubtedly be the long-term goal, let's not lose sight of the fundamentals of maintenance – the day-to-day task of maintaining critical plant assets and minimising production downtime.

This will always continue to involve people – highly skilled, multi-disciplined maintenance staff with a deep knowledge of the production plant, who are usually seen as the cavalry who 'get us going again.' The challenge facing many manufacturing plants stems from economic pressure over recent years, where maintenance teams have tended to be downsized.

As such, retaining key personnel has been a challenge. Even more difficult has been replacing people with an equal skill set and the experience to 'hit the ground running.' This lack of retained skilled maintenance people increases the likelihood of unwanted downtime and puts continuous production at risk.

Obsolescence and legacy automation equipment

It is critical to understand the plant automation landscape because obsolescence poses a significant risk to production. It is often the case there is a lack of awareness that the problem even exists at all.

'The plant keeps going and we have some spares parts in the stores,' is a well-worn rallying cry. Whatever level of obsolescence exists on plant, and this will continue to exist due to the reliability and longevity of most automation platforms. In turn, this will eventually lead to higher costs, significant downtime and production losses.

When equipment becomes obsolete, spare parts become increasingly difficult to get hold of and, if you can get them, you pay a significant premium to purchase them. So, when the last spare part has been used from the stores and cannot be found via the internet – or only with the risk of it coming from an unauthorised source with no warranty and no guarantee it will actually work – serious problems may arise. The way out of this is to adopt a legacy migration strategy long before reaching this critical stage.

Spare parts inventory management

Production plant stakeholders should consider multiple initial questions when developing an effective spare parts inventory management strategy. Foremost among these is whether they have enough spares on-site and that they are the right spares profile.

From here, further questions can be asked over whether a test interval is required for these spare parts and, importantly, whether they will work if needed. Clearly, availability and accessibility of correct working spare parts is critical should something fail on plant.

However, holding spare parts is costly, and managing the inventory can pose even bigger challenges. Are records up to date? Do parts get replenished when used? These are questions that must be addressed.

Effect on business

Not staying on top of these critical maintenance challenges will inevitably increase unwanted downtime and affect overall plant efficiency and performance. Alongside this, the knock-on effect of interruptions to a particular shift's performance can have a detrimental effect on morale and lead to increased sick days and staff churn. An inefficient operating plant will also consume greater amounts of energy, which increases costs and affects a company's carbon footprint and green credentials.

Working with a life cycle partner

Taking these challenges into account, it is imperative that key plant personnel evaluate their supply chains and ensure they are working with a trusted life cycle partner that can work with them throughout the manufacturing lifecycle. As part of this, decision makers in this area need to review prospective partners and analyse the range of added value services they can offer to deal with these critical maintenance issues, and offer related services to help maintain production, develop people and drive down

costs.

One crucial aspect of this is ensuring contracted, 24/7 telephone support and engineer callout is available to help alleviate the potential lack of resource within stretched site maintenance teams. Obsolescence reporting and legacy migration solutions should also be delivered as part of an agreed upgrade plan, that will, over time, remove the risk of obsolescence from the plant.

Concurrently, flexible inventory management options can improve business cash flow and reduce carbon footprint, as well as provide availability and accessibility to the correct profile of tested spare parts.

Energy also continues to be a major cost to any business, and understanding a plant's energy footprint and highlighting 'hot spots' can be achieved through power quality measurement and energy audits. Solutions can then be deployed to mitigate the problem areas and deliver a more energy-efficient plant. Finally, developing and retaining people is extremely important, so evolving training programmes to meet the needs of the individual and the business are essential to creating a motivated and driven workforce.

A way forward

Maintaining a production plant requires significant investment in trained personnel and an extensive spare parts inventory. At a time when business costs are rising, leveraging the expertise of the supply chain to develop and adopt a life cycle management strategy can help mitigate these pressures.

This strategy will help increase the efficiency of a maintenance team by offering extra added value services outside the scope of what they have the capacity to deliver. By doing so, production plant decision makers can better navigate and adapt to today's maintenance challenges.

Further information about the topics raised in this article can be found by contacting Mitsubishi Electric at automation.serviceteam@meuk.mee.com.

ENDS

About Mitsubishi Electric Corporation

Follow us on:

youtube.com/user/MitsubishiFAEU

twitter.com/MEUKAutomation

linkedin.com Mitsubishi Electric – Automation Systems UK

Press contact:
Mitsubishi Electric Europe B.V.
Automation Systems Division
Melanie Bright
Marketing Communications Manager
Mob: +44 (0)7738 483859
automation@meuk.mee.com
gb.mitsubishielectric.com/fa

Story/Editor:
WPR Agency
Andy Williams
Senior Client Services Director
Mob: 07880 381 665
Andy@wpragency.co.uk

With more than 100 years of experience in providing reliable, high-quality products, Mitsubishi Electric Corporation (TOKYO: 6503) is a recognized world leader in the manufacture, marketing and sales of electrical and electronic equipment used in information processing and communications, space development and satellite communications, consumer electronics, industrial technology, energy, transportation and building equipment. Mitsubishi Electric enriches society with technology in the spirit of its “Changes for the Better.” The company recorded a revenue of 5,003.6 billion yen (U.S.$ 37.3 billion*) in the fiscal year ended March 31, 2023.

For more information, please visit www.MitsubishiElectric.com

**U.S. dollar amounts are translated from yen at the rate of ¥134=U.S.$1, the approximate rate on the Tokyo Foreign Exchange Market on March 31, 2023.*