

AMS Device Manager Simplifies Instrument and Valve Maintenance

RESULTS

- 400% reduction in removal of control valves for overhaul
- Up to \$16,500 saved per year through fewer control valve repairs
- Reduced annual shutdown period by one-half
- \$52,500 saved each year on instrument calibration
- 2,000 man-hours per year saved through a radical change to predictive maintenance



APPLICATION

The recent expansion of a biotechnology facility in the United Kingdom resulted in a new plant featuring 365 FOUNDATION™ Fieldbus devices, including a mix of temperature, level, pressure, flow, pH, and conductivity devices and 35 control valves.

CUSTOMER

Eli Lilly and Company Limited is the UK affiliate of Eli Lilly and Company of Indianapolis, Indiana. As one of the UK's top pharmaceutical companies, Eli Lilly and Company Limited maintains its own research and development center and a manufacturing site, including a biotechnology facility, in Speke, Merseyside.

CHALLENGE

Preventive maintenance proved to be costly and disruptive in the existing biotech production facility. Maintenance typically consisted of calibration checks on measurement devices and full overhaul of control valves at predetermined intervals. More than 80 percent of the calibration checks found the instruments to be within the acceptable tolerance level with no adjustment needed. Worse yet, 75 percent of the control valves removed for full overhaul during shutdown periods needed no maintenance at all! Lilly's expanded biotech manufacturing facility was designed to correct these issues by utilizing technology to improve instrument and control valve reliability and reduce time-based maintenance. To take advantage of the smart capabilities of the FOUNDATION Fieldbus instrumentation, company officials decided to implement state-of-the-art asset management software.

“We do not remove any valves now on a routine basis, only if AMS Device Manager alerts us to a problem. This has allowed us to reduce the number of control valves removed each year from 28 to 7.”

**Biotechnology Facility Automation Engineer
MI&CS
Eli Lilly and Company Limited**

SOLUTION

AMS Device Manager asset management software met the challenge, providing the basis for a predictive maintenance program by gathering the diagnostic information generated by the smart measurement devices and control valves. This information enabled facility managers to implement a radical change in maintenance strategy by eliminating time-based maintenance on most field devices.

This new maintenance strategy was applied to non-critical devices until sufficient experience was gained by plant personnel. Even so, nearly 300 non-critical instruments and control valves were covered by predictive maintenance as soon as the facility began using the asset management software. According to the automation engineer at Eli Lilly UK, "We relied on the smart capabilities and predictive diagnostics from these devices to determine when maintenance was required. The data they produced and continuous monitoring by AMS Device Manager enabled us to implement predictive maintenance in the new facility." Almost immediately, maintenance managers noticed a reduction in the amount of time required by technicians for instrument calibration. Paperwork was simplified and fewer calibrations were required, resulting in a saving of more than 2000 man-hours in the first year of operation. They found this "one of the most significant benefits achieved as a result of the new system." Eli Lilly also estimates a reduction of about 40 percent in time required for instrument maintenance, saving around \$52,500 per year, among other miscellaneous savings.

Applying predictive maintenance to the control valves was also economically beneficial. By utilizing the valve diagnostics obtained through AMS Device Manager and pulling valves only when maintenance was actually needed, the facility began saving about \$16,500 per year. Since valves are no longer removed routinely, only seven valves actually needed to be overhauled in 2008. And the amount of time needed for an annual shutdown was reduced by half, increasing plant availability and allowing for production of additional batches.

After more than a year of operation, teams from engineering and automation fully adopted the software technology for all Fieldbus devices and control valves. The facility now relies on continuous device monitoring to further reduce time-based maintenance.

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"We saved 2000 maintenance man-hours by streamlining instrument calibrations using AMS Device Manager."

**Biotechnology Facility Automation Engineer
MI&CS
Eli Lilly and Company Limited**

Note: All fiscal values have been converted from GBP, using the exchange rate at the time of going to press, for the purposes of this flyer.


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