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Challenges

Modern processing plants are becoming more automated and for good reason. A well automated plant can not only improve efficiency, consistency and quality, but can also reduce energy consumption, waste and emissions. As crucial elements in this automation chain are field instruments and process analyzers, devices which are only useful if you can rely on the readings they provide, yet frequently suffer from lack of maintenance.

Unlike many instruments, process analyzers require frequent maintenance and re-calibration as the measuring element is in direct contact with the process. As a consequence, the process will have an influence over the performance of the analyzer with the nastier the process, the more frequent the maintenance requirement.

Analyzers are used for many applications; product quality, chemical dosing, regulatory monitoring etc. So perhaps it's not too difficult to imagine the implications of not maintaining the analyzer.

Over-dosing of chemicals lead to high operating cost, damage to plant and equipment. Under-dosing chemicals causes reduced yield, lost product and consequently reduced profitability.

The long term effects of a decline in product quality and consistency can result in a bad reputation and lost customers. Similarly, environmental excursions = bad reputation and can be an expensive mistake!

Let us consider the humble pH analyzer. It is probably the most common of process analyzers and used in a wide variety of applications. However, it is also one of the most maintenance intensive analyzers because the process so easily influences the measuring elements causing drift and non-responsive elements.



Solutions

We've established that maintenance must be performed, our next challenge is to find someone willing to perform that task! Experience tells us that few people relish this task on an industrial plant. Also, few people understand why it is required and can become quickly frustrated. The risk here is that they leave the analyzer unmaintained and adopt a stance of "it never worked anyway".

Does the process have to be shut down to access the sensor? Is there high temperature/pressure to be wary of? These are a few things that might otherwise promote procrastination, or reasons to not maintain.

When a decision is made to use a process analyzer it's accepted that quality and relevance of measurement remain the primary areas of interest. After all, there is usually a good reason the measurement is required. However neither of these can be achieved without maintenance.

Summary

Maintenance and calibration will provide confidence and trust in the measurement, enabling operators and engineers to make appropriate decisions about process changes and contribute to the overall health of your plant and operation.

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