HARNESSING DATA POTENTIAL

Jason Rigg, Solutions Architect, Quorum Software, USA, describes how gas and liquid measurement software solutions can increase operational efficiency.

Digital transformation efforts continue to be top of mind for many industries, but while some organisations have a plan in place, many remain in the dark. McKinsey[1] reports that while many companies have been running digitisation projects across various parts of their operations, 70% of them have not moved beyond the pilot phase due to management that is unwilling to commit necessary resources.

Without data analytics tools in place, employees waste valuable time on manual tasks, an ongoing challenge in the upstream and downstream markets. One of the costliest issues is human error, which can easily occur when manually inputting data and having to analyse datasets.

The best way to ensure organisations meet their operational efficiency is with a robust gas and liquid measurement

data management system. Gas and liquid measurement software helps streamline the measurement process and optimises data integrity. Let's take a look at several key issues that the oil and gas industry is currently facing, and the role gas and liquid measurement software can play in alleviating them.

The way it has been done

To this day, many operators do not have robust measurement software in place and continue to utilise decades-old home-grown databases to source their data. This is true for companies of all sizes – but they cannot keep up with it forever as the amount of data exponentially increases. Major pain points relate to Excel entry, which is overly manual and doesn't reflect rapidly changing industry regulations. These systems need to reflect those updates, which can be very time-consuming if they are manually handled.

Therefore, implementing a robust measurement software helps power a data warehouse capable of serving the needs of the entire organisation. Most employees are not meant to stay in the same role forever, meaning those who initially built the system are faced with the challenge of having to teach the next person overseeing it. Companies who have robust measurement software in place, backed by third-party expertise, automatically have their systems updated based on new industry standards, saving time and effort. From upstream to midstream markets, ensuring compliance and accuracy for gas and liquid measurement data is critical.

Compliance with industry standards and regulations

Maintaining compliance with industry standards is a priority for oil and gas companies, including compliance with the Bureau of Land Management (BLM

Figure 1. Quorum's industry-leading solution for hydrocarbon, biogas, and carbon capture and storage measurment ensures data integrity to provide peace of mind.

Figure 2. FLOWCAL increases operational efficiency by reducing data management complexity through automation, including a single source of truth for physical volume data throughout the organisation.

Regulations) and the liquid and gas industry calculation standards of the American Gas Association (AGA), American Petroleum Institute (API), and the GPA Midstream Association. Compliance audits are especially strenuous for oil and gas companies, and when using software that isn't up-to-date with industry standards, they become even more challenging. Both midstream and upstream products have different density ranges and diverse ways they act through different pressures and temperatures.

American Petroleum Institute (API) MPMS Chapter 11.1 is the established industry standard outlining the procedure for crude oils, liquid refined products, and lubricating oils for the correction of temperature and pressure effects on the density and volume of liquid hydrocarbons. The API standard ensures that transactions are performed dependent on calculations, and also provides a high level of participation for both parties. Implementing a gas and liquid measurement software helps validate and identify errors and anomalies, as well as offering tools to run recalculations according to these standards. This global standard is updated at least once every five years, and it's imperative to ensure accuracy is met at all steps of the way.

Having robust measurement software solutions in place helps organisations ensure that industry standard calculations from API, AGA, and GPA Midstream Association remain up to date to help to consolidate, validate, correct, balance, and report gas and liquid measurement data.

Connecting the field to the office

According to the American Geosciences Institute (AGI), the US has over 200 000 miles of pipelines for crude oil, refined products, and natural gas liquids, 300 000 miles of pipeline for gathering and transmitting natural gas, and 2.2 million miles for distributing gas to various businesses and industrial sites. Operators are focused on moving materials to production as quickly as possible to fill these pipelines, but many are sending out data from production to operations without even validating it. Unfortunately, this causes a potential communication gap between the various departments production data passes through, leading to inaccurate calculations and silos of information.

Having a sole source of truth for all measurement data is vital and helps eliminate the constant pressure for operators to communicate with the back office, a process that is also prone to personnel errors. Additionally, it helps minimise risk and ensure compliance with data transparency, and avoids costly errors with validation routines that flag faulty data.

Conclusion

For some of the top issues facing upstream and downstream markets today – from complying with industry standards and regulations to inaccurate data due to manual errors – it is integral that organisations take the time to find a trusted, third-party vendor who can help increase operational efficiency with an all-in-one oil and gas measurement software. Home-grown systems that many companies rely on are inefficient, often provide inaccurate measurements, and waste valuable time. A trusted vendor can help tailor the software to your business, so that you no longer have to take a one-size-fits-all approach.

That's why 80% of North American midstream operators trust Quorum Software's FLOWCAL gas and liquid measurement software to ensure data integrity in this fast-paced market. Additionally, Quorum Software has partnered with the American Petroleum Institute (API) as the only authorised distributor of the API 11.1 calculations and standards for temperature and pressure corrections for liquid commodities. The global measurement community relies on these calculations everyday as the established industry standard for liquids measurement. The FLOWCAL application comes standard with the API 11.1 tables to ensure measured fluids are as accurate as possible prior to financial settlement.

Those who get ahead now are better positioned to remain compliant with rapidly changing industry standards and manage hydrocarbon measurement data to maximise revenue by efficiently gathering, validating, storing, and distributing a company's volume and energy data. ⓦ

References

1. https://www.mckinsey.com/capabilities/operations/our-insights/harnessing-volatility-technology-transformation-in-oil-and-gas