

Beamex Case Story

Reliance Industries Limited
(Patalganga Manufacturing Division), India



Improving efficiency with a top-of-the-line calibration workshop solution

beamex

RELIANCE INDUSTRIES LIMITED IS A FORTUNE GLOBAL 500 COMPANY AND THE LARGEST PRIVATE SECTOR COMPANY IN INDIA.

The Reliance Group, founded by Dhirubhai H. Ambani (1932-2002), is India's largest private sector enterprise, with businesses in the textile, petrochemical, refining, oil & gas, energy and materials value chain. The Group's annual revenues are in excess of US\$ 27 billion. The flagship company, Reliance Industries Limited, is a Fortune Global 500 company and is the largest private sector company in India. Backward vertical integration has been the cornerstone of the evolution and growth of Reliance. Starting with textiles in the late seventies, Reliance pursued a strategy of backward vertical integration - in polyester, fibre intermediates, plastics, petrochemicals, petroleum refining and oil and gas exploration and production – to be fully integrated along the materials and energy value chain.

The Group's activities span exploration and production of oil and gas, petroleum refining and marketing, petrochemicals (polyester, fibre intermediates, plastics and chemicals), textiles and retail. Major Group Companies are Reliance Industries Limited (including main subsidiaries Reliance Petroleum Limited and Reliance Retail Limited) and Reliance Industrial Infrastructure Limited. Reliance Industries Limited operates world-class manufacturing facilities across the country at Naroda, Patalganga, Hazira, Jamnagar, Kurkumbh, Allahabad, Barabanki, Baulpur, Gandhar, Hoshiarpur, Nagothane, Nagpur, Silvassa and Vadodara. The Patalganga plant is a petrochemical production plant and one of the oldest Reliance Industries Limited plants. It was established in 1982. The Patalganga plant (PG) is spread over more than 200 acres on the banks of the River Patalganga, 70 km from Mumbai, the finance capital of India. Patalganga comprises seven production plants: PTA (Purified Terephthalic Acid), PX (Paraxylene Plant),

LAB, PSF, PFY, Utility and Energy Center. The plant employs 3,000 people. Mr Ranjan Bhattacharya is the Vice President of Instrumentation and Mr Keyur G. Vora is the General Manager of Instrumentation (PTA & PX) at the Patalganga plant.

The situation

Calibration is very important and one of the success factors in the Patalganga plant's operations. Mr Bhattacharya states, "it ensures that the end-product has high quality, as it is process control that ultimately determines the quality of the products produced". Calibration must also meet the plant's ISO9001, 14001, 18001 requirements. Overall, calibration requirements are considered high, as they need to meet the traceability requirements of quality for final products & governing bodies.

In total, the Patalganga plant has around 20,000 instruments. Process parameters mostly calibrated include pressure, flow and temperature. The Patalganga plant follows a calibration plan that determines the calibration frequency of each instrument. Mr Vora explains, "the calibration frequency of most instruments is between 1 and 3 years. According to criticality, instruments are classified into three categories that determine the calibration frequency: 1) Vital, 2) Essential, and 3) Desirable. For the instruments classified as Vital, the calibration frequency is 1 year. Some critical instruments, such as analyzers, are calibrated as much as once a week". Approximately 30% of the installations are calibrated per year; these include mainly switches and gauges. Because calibration is considered a critical task at the Patalganga plant, its own engineers and technicians perform all calibrations. Calibrations have not, therefore, been outsourced to external service companies. They are performed in workshops and out in the field, and the results are entered and documented into SAP® maintenance management system.

Mr Vora explains, "according to criticality, instruments are classified into three categories that determine the calibration frequency".

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The solution and main benefits

Reliance Industries Limited always looks for the best products and solutions in each category. And they were not going to make an exception when they decided to invest in calibration equipment. The number-one criterion for choosing their calibration equipment was accuracy. The stability of accuracy is the second most important issue. Other aspects included the flexibility of calibration by choosing appropriate master instruments to meet Reliance's day-to-day needs, as well as service support for recalibrating the master instruments. “The task was to search, choose and install a top-of-the-line calibration system that would ultimately work as a reference to other plants. Ideally, a similar system could be used in other Reliance Industries plants as well”, Mr Bhattacharya remarks. “The quality, accuracy, technical features and ease-of use made Beamex a strong alternative when assessing the different suppliers and calibration equipment”, Mr Vora continues. “Beamex was able to meet our demanding requirements”, Mr Vora adds.

The Patalganga plant has been utilizing several Beamex® MCS100 Workstations for the last three years. Once installed and in use, the results have been very convincing and provided the opportunity to substantially improve the efficiency of calibration operations. “The average time it takes to do one pressure calibration has dropped from 2 hours to 30 minutes using the Beamex® MCS100 system”, Mr Vora and Mr Bhattacharya affirm. This means that the calibration time required per pressure calibration has been reduced by 75%. The automated calibration functionality of the Beamex® MCS100 makes this possible. Performing calibrations is fast and efficient. In addition to this, the system is user-friendly and convenient, which means that no



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intensive training or unnecessary high skills is needed to operate the system. This is another way of achieving cost-savings.

The overall experience with the Beamex system has been very good at the Patalganga unit in several plants. Still, there is always room for continuous improvement. That is one of the principles that have made Reliance Industries Limited a powerful corporation in the world. The future trends and requirements in terms of calibration at the Patalganga plant involve even higher accuracy instruments and maintaining the traceability, smart digital instruments with advanced features, as well as the need to automate and simplify all calibration procedures and tasks.

CASE STORY IN BRIEF

Customer profile

Reliance Industries Limited (Patalganga Manufacturing Division) India

Business Situation

Reliance Industries Limited is a Fortune Global 500 company and is the largest private sector company in India. Patalganga plant is a petrochemical production plant and one of the oldest Reliance Industries Limited plants. It was established in 1982. Patalganga comprises seven production plants: PTA (Purified Terephthalic Acid), PX (Paraxylene Plant), LAB, PSF, PFY, Utility and Energy Center. The plant employs 3,000 people. The task was to search, choose and install a top-of-the-line calibration system that would ultimately work as a reference to other plants. Once the Beamex® MCS100 Workstations were installed and in use, the results have been very convincing and provided the opportunity to substantially improve the efficiency of calibration operations. The calibration time required per one pressure calibration has been reduced by 75%.

Solution description

- Beamex® MCS100 Workstations

Main benefits

- The average time for one pressure calibration has dropped from 2 hours to 30 minutes
- Performing calibrations is fast, thanks to automation
- The system is user-friendly and convenient
- Quality, accuracy and technical features meet the high requirements of Reliance Industries Limited

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