

Benefits of the CIPM MRA for the National Physical Laboratory of India

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Mass Standards

M/s Fresenius Kabi Oncology Ltd. (FKOL), Solan, India, is a pharmaceutical company that exports drugs and other pharmaceutical products to the USA and countries around the world. Recently, the U.S. Food and Drug Administration (USFDA) audited the company. Usually, FKOL calibrated its mass standard artifacts against the National Physical Laboratory of India (NPLI) standards, and NPLI provided them with the corresponding certificates as per the CIPM MRA.

While going through the documentation, the USFDA wanted to check the NPLI certificate No. 07040028/1.01/C-0163 corresponding to the calibration of FKOL weights in June 2008, and asked FKOL to collect the information for traceability of the standards used by NPLI in this calibration process. A letter from FKOL including this request was sent to the NPLI administration on 13 November 2009.

NPLI acted immediately, providing all the calibration certificates for the artifacts used by NPLI to calibrate their standards. It also provided FKOL with the details of the [Calibration and Measurement Capabilities \(CMCs\), declared by NPLI in the field of Mass Standards](#), as they were published in the Key Comparison DataBase ([KCDB](#)), maintained at the BIPM, and thus internationally recognized under the provision of the CIPM MRA.

FKOL later informed NPLI that they had been successfully qualified in their USFDA audit.

India is slowly becoming a hub for the global pharmaceutical industry and this success is being attributed to the benefit of the CIPM MRA – making it unnecessary to send instruments overseas for calibration.
Tested once, accepted every where!

Force Standards

Simultaneous measurement of longitudinal and bending strains in bolts used in wind turbines – M/s Suzlon Energy outsourcing calibration work to NPLI

Specialized work for calibration of the bolts used in wind turbines was carried out by NPLI for M/s Suzlon Energy, The Netherlands, a company that has started operating in India as M/s Suzlon Energy (India). This calibration work was outsourced by the company to NPLI, which was a direct benefit gained by NPLI as a signatory of the CIPM MRA.

M/s Suzlon Energy (India) is engaged in setting up wind energy power plants in India. The M36 x 30 cm bolts, which are used to fix the blades to the rotors, form a critical component for reliable and efficient operation of the wind turbines. Until recently, Suzlon

Energy had been using bolts manufactured and calibrated at their factory in the Netherlands, but the company has started manufacturing the bolts in India.



Set-up used for measurement of longitudinal and bending strains in bolts.

In an effort to establish an in-house calibration and testing facility, the company outsourced a consultancy project to NPLI to explore the feasibility of calibrating the bolts at NPLI. The task involved simultaneous measurements of longitudinal and bending strains at three different angles under 450 kN force and 200 Nm bending moment on specially designed metallic bolts to reduce the maintenance cost of the wind turbines. The project was carried out successfully, and Suzlon Energy was extremely satisfied with the measurement results.

Acoustics and ultrasonic standards

Construction of the Delhi Metro, which is operated by the Delhi Metro Railway Corporation (DMRC), was a project of national importance in India. The construction and engineering work complied with all the international standards for a project of its type and many internationally recognized companies participated in the venture. NPLI, a signatory of the CIPM MRA, was entrusted with studying the noise and vibration generated by the Delhi Metro and its impact on the surrounding environment, in particular the barrier design for DMRC. The project was completed successfully and on schedule and this has allowed NPLI to go on and undertake other noise and vibration impact studies, including the Bangalore Metro and also for other Historical Monuments in India.

