Beamex Case Story

CEPSA Química (Factoría de Huelva)
Spain

Improving efficiency by integrating the calibration system with maintenance management system.

beamex

CEPSA QUÍMICA IS THE SECOND LARGEST EUROPEAN MANUFACTURER OF PHENOL AND THE FOURTH LARGEST IN THE WORLD.

CEPSA Química, which belongs to CEPSA, is the only Spanish company that manufactures phenol, acetone, methylamines and derivatives. It is today the second largest European manufacturer of phenol and the fourth largest in the world. Phenol is an intermediary product for the production of epoxy and polycarbonate resins, used in plastics, automation, building, electronics, telecommunications, electricity, medicine, pharmaceuticals and decoration. CEPSA Química's production center is located in the Huelva province, in the industrial polygon Nuevo Puerto de Palos de la Frontera and close to the port terminal "Reina Sofia", used for the reception of raw materials and shipping of finished products. The industrial installations use state-of-the-art technologies because of the complexity of the productive processes and the strict quality controls required for its products. The employed workforce is required to possess high technical qualifications.

"We chose Beamex because their products are designed to facilitate the work of the technician who calibrates", Juan José Mora Mora describes.

CEPSA Química's quality system has been certified since 1992, and covers the reception of raw materials, and the production, storage and sales of the various products. This activity was certified by AENOR, under the international standard UNE/EN/ISO 9002. In 1999, it obtained the environmental certification under the international standard UNE/EN/ISO 14001, certified by AENOR. In 2001, it obtained the Occupational Risk Prevention System certification, according to the OHSAS 18001 norm, certified by Audelco.

The situation

Since the certification of the Quality Assurance System in CEPSA Química in 1992, the calibration system was managed by using tailor-made computer tools with spreadsheets and databases applying traditional statistical formulas. This system required dedicating many hours to creating and filling in table sheets and generated an excessive amount of written documents. Calibrations and management control were carried out manually, with a high probability of making errors.

With the launch of maintenance management systems, some generic tools appeared, which were more or less adaptable to each specific application, but they did not bring anything new, as they had to be tailor-made.

At CEPSA Química, calibration is a tool to warrant the accuracy of the critical measures for the plant processes, the environment and safety. Calibration management in CEPSA Química is the responsibility of the Instrumentation Maintenance Department, headed by Juan José Mora Mora. Their responsibility goes from the management of documentation, the management of computer application, the calculation and definition of uncertainties, the setting of calibration intervals, the management of standard equipment, the planning, programming and execution of calibrations, to the validation of results and the control of non-conformities. Any internal of external audit is defended by the Head of Instrumentation Maintenance who is responsible for the management, follow-up and control of the system.

In 2006 CEPSA Química studied the purchase and installation of a calibration management system. The company ultimately chose the Beamex® CMX Calibration Software.

For the calibration software, the first requirement was its integration capability with SAP®.

The solution and main benefits

Juan José Mora Mora explains, “we were looking for a management system, which combined three fundamental requirements. First requirement was simplification of the calibration management system and audits. Second requirement was reduction of the number of working hours for execution and management, making calculations not only of deviations but also of uncertainties. Third requirement was possible integration with the SAP® Maintenance Management System.”

Nowadays when doing calibrations, the main objective is to guarantee that the critical equipment measurement value stays within an acceptable range of uncertainty for the processes, the environment and safety. Typical calibrated process variables include flow, pressure, level, temperature and ph. In addition to instruments, all calibration and measuring equipment are re-calibrated on a regular basis.

The Instrumentation Maintenance Department, within into the Maintenance Department, determines the calibration process for each instrument and the maximum uncertainty which the process admits. In view of these characteristics, the maximum calibration intervals are set and all the information stored in the CMX. In collaboration with the Maintenance Planning Department, annual calibration plans are established and integrated as a CMX report. All the equipment data are entered into the CMX database, which is connected with the SAP® system implemented within the whole Cepsa group. On the first day of each month, CMX launches the work instructions in SAP® for all the calibrations to be carried out during the month. The Instrumentation workshop employees plan and execute the field calibrations, and later enter the data into CMX so that the supervisors can approve the calibrations. The calibration certificates are then printed on paper and archived.

Calibrations are made in the field most of the time. For most of the calibrations, CEPSA Química uses the Beamex® MC5 Multifunction Calibrator. For the calibration software, the first requirement was its integration capability with SAP®. It was also important that the calibration software auditable according to international standards. Another requirement is that it calculates not only errors but also expanded uncertainties.

The Beamex® MC5 Multifunction Calibrator serves CEPSA Química’s purposes well, as it integrates electrical, temperature and pressure measurement into one device. In addition, the communication between the calibrators and CMX Calibration Software reduces the duration of calibration and data entry. Third benefit is that Beamex provides also calibration equipment that is suitable for potentially explosive environments.

“We chose Beamex because their products are designed to facilitate the work of the technician who calibrates”, Juan José Mora Mora describes.

“The main benefit with the Beamex integrated calibration system has been reduction of the number of hours dedicated to calibration and information management, which means a reduction of costs”, Juan José Mora Mora reveals. Also, the computerized management of calibration data is more reliable as the possibility of making errors is reduced. “The interconnection with SAP® allows us to integrate the system of work instructions, planning and programming of tasks with calibrations”, Juan José Mora Mora explains. “We can now assert that we have a calibration management system which is simple, efficient and adapted to our particular needs and requirements”, Juan José Mora Mora summarizes.

Case Story in Brief

Customer profile

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The situation

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Solution

- Beamex® CMX Calibration Software (with SAP® Connector)
- Beamex® MC5 Multifunction Calibrator

Main benefits

- Calibration software provides integration capability with SAP® Maintenance Management System
- Simple and efficient calibration system adapted to specific needs
- Cost savings from reduction of the number of hours dedicated to calibration and information management
- Multifunctional calibrators replace several individual measurement devices

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