

# Emerson's QC<sup>3</sup> Service Saves Lucite \$335,000 During Commissioning and Startup of New Plant

## RESULTS

- Saved \$220,000 USD by cutting data entry time in half
- Saved about \$66,500 USD by avoiding errors and subsequent rework
- Saved \$35,500 USD by reducing time for report generation
- Saved \$13,300 USD through elimination of paper and printing

## APPLICATION

A world-scale chemical plant under construction in Singapore, designed to utilize the new patented Alpha technology for production of methyl methacrylate (MMA), remains on schedule to go online in the Fourth Quarter 2008.

## CUSTOMER

Lucite International, the world's leading producer of MMA - a building block polymer, is the only company with production facilities in Europe, Asia Pacific, and the United States.

## CHALLENGE

Commissioning the instrumentation and electrical components in a large chemical complex is a daunting task, requiring thousands of hours of manual labor for quality control inspections and documentation. The time-consuming job of data entry is tedious and often error-prone. Unless procedures are well-defined and consistent, erroneous and/or incomplete records may cause costly delays in starting up the plant.

For Lucite's new plant in Singapore, 8500 instrument and electrical tags had to be checked by quality control inspectors, and data entries made for each tag and each deficiency. With an estimate of nearly 15,000 entries, each requiring an average of 40 minutes (0.66 hours) to complete, data entry was expected to take about 10,000 man hours. At the prevailing labor rate, the projected cost for manually transcribing inspection results to reports and transferring deficiencies from a checklist to a separate record was nearly \$550,000.



***“Emerson understands the commissioning and startup process, which allowed them to complete our project on time and under budget and contribute to our peace of mind.”***

**John Noon**  
Project Manager

## SOLUTION

Lucite Project Manager John Noon wanted to employ Emerson's QC<sup>3</sup> quality control services, despite the construction team's opposition to replace the established method of inspections and documentation. As an experienced construction manager, Noon recognized the opportunity to use computer software to streamline the inspections and shorten data entry time — not only to save money, but to speed up the entire process of plant commissioning and startup. He felt QC<sup>3</sup> could accomplish these goals by automating inspection checklists and streamlining the entry of field inspection data into a central database.

QC<sup>3</sup> eliminates the guesswork of traditional inspection / commissioning methods by providing standardized procedures, which are completed by inspectors in the field using a personal digital assistants (PDAs). Progress reports are generated immediately upon synchronization of the PDAs with the database. Features of the software include PDA checklists, provisions for sign-off on completed items, deficiency records, quality assurance documentation, and synchronization to eliminate manual data entry.

The QC<sup>3</sup> service at the new Lucite MMA plant began in December, 2007 and was completed the following July. An Emerson expert supervised preparations at the site and the training of inspectors. Emerson also provided an onsite QC<sup>3</sup> administrator for the duration of the project and other support as needed.

The actual benefits of the QC<sup>3</sup> project included savings in data entry, elimination of rework due to errors, fast and easy report generation, and up-to-the-minute project status reports enabling the project management team to know what was happening at all times and what deficiencies needed to be corrected. In this way, the allocation of work and the efficiency of the inspectors were easily monitored. Project quality was ensured through standardized data collection and storage, providing accurate documentation for quality control audits at any time.

Best of all, commissioning was completed on time and under budget, enabling the plant to start producing MMA without delay.



***“QC<sup>3</sup> is a good tool for planning and control of onsite inspection and commissioning activities. I would want to use it again during construction of the next Alpha manufacturing facility.”***

**John Noon**  
Project Manager

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