

1. In spite of electronic process control at the VAM plant in Clear Lake, Texas, the shift team has to know the actual plant by heart, both inside and out.

2. Plant operator Kevin Simmons (front) and John Ruiz (middle) report to Jim Conner (back) on their experiences with APC.



2

occurs in the reaction loop. That meant that it was impossible to optimize the use of energy and raw materials. With APC's precision and process manipulation, Celanese engineers and plant operators can successfully approach optimal reaction points without compromising plant safety.

Getting more with less

Efficient use of energy and raw materials to achieve cost savings is only one of APC's advantages. "The big returns will come from additional capacity," says Jim Conner emphatically. Based on experience in the industry so far, the benefit from extra capacity normally runs at a 3-5 multiple of the benefits from cost reduction alone. But to achieve this, it is necessary to move from an APC system to a

real-time optimizer system, or RTO. RTO incorporates the experiences from APC into a thermodynamic model, which uses greater computational power to simultaneously solve both mass and energy balances, that is, the variable costs for raw materials, energy and waste. The leading software company for process technology in the chemical industry, Aspen Technology of Cambridge, Massachusetts, is supporting Celanese in introducing APC and RTO. RTO will generate a significant amount of additional cost savings in VAM. Celanese is in the process of implementing MBC to control all the plants in its Acetyls chain and to train its staff in this system. ◀

Celanese is a global leader in vinyl acetate monomer

Vinyl acetate monomer (VAM), which is produced from ethylene and acetic acid using a fixed bed catalyst, is an important link in Celanese's strong Acetyls chain. With the help of its trademark VAntage™ technology, Celanese recently made significant increases in production efficiency at its six production sites in Bay City, Clear Lake, Frankfurt, Singapore, Tarragona and Cangrejera. Celanese produces around 1.2 million metric tons of VAM a year and has a global market share of around 25%. Nearly half of all VAM produced is a feedstock for emulsions, which, in turn, are used to manufacture paints, adhesives and coatings. Celanese is the largest producer of polyvinyl emulsions in Europe. Another 30% of VAM is processed into polyvinyl alcohol (PVOH), a chemical employed in a broad range of applications in the construction, film, polymer, paper and textile industries, etc. Celanese is the second largest PVOH producer worldwide.