

SMOC applications on the Aubette steam cracker

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This article deals with the use and the contributions of SMOC (1) for the control and the optimization of equipments such as separation / purification columns and compressor for the SHELL Aubette / Berre steam cracker .

Five multivariable control applications are implemented on the main columns of the cracked gas separation section: Deethanizer, ethane / ethylene splitter, depropanizer, debutanizer, propane / propylene splitter.

One economic optimization application is also implemented on the propylene cold cycle compressor .

Four applications are implemented on the HDT unit (separation section of the pyrolysis gasolines with hydrogenation of the C5 and C6 cuts): depentanizer, dehexanizer, propane / propylene solvent grade stabilizer and one to maximize the global throughput of the unit inside its constraints.

The SMOC applications on columns control mainly the top and bottom product quality under set points, constraints and economic objectives of maximization or minimization.

These controllers are running successfully for more than ten years.

A migration from the Vax computer towards the new CS3000 Yokogawa system is in progress.

The earnings brought by the SMOC applications are around 1.3 M€ / year.

1 Shell Multivariable Optimising Control.