

**Control strategies improve Louisiana NGL plant operations**

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A comprehensive package of advanced regulatory control and optimization strategies has been commissioned at Enterprise Products Co.'s Baton Rouge Fractionator in Port Allen, La.

Relying entirely on the distributed control system (DCS) for computing and control functions, these strategies improved process stability and decreased operator workload. The variability in compositions was also significantly reduced (standard deviation or Sigma reduced by a factor of 3-6), permitting much closer operation to product specifications.

Targeted set points were maximized. This allows increased plant throughput, a yield of higher-valued products, or better energy efficiency, as economics dictate. The reduction in variability alone resulted in an estimated payout of less than 6 months.

Enterprise was convinced that additional benefits were achievable with advanced composition and separations control. A project was commissioned and a team assembled consisting of control specialists from Enterprise and from Barry D. Payne & Associates Inc. The engineered solutions employed included:

- Dynamically compensated, model-based estimates of product compositions using tray temperatures and tower pressures.
- Control of integrated energy and material balance models.
- Strategies to "push" against multiple constraints, maximizing inlet rate, propane rvp, and hot oil system efficiency.

The implementation took place during normal operations, with only a limited amount of testing. Operators said the plant was much easier to run with the improved controls.

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