

BLENDING SIMULATION: A TANK MANAGEMENT APPLICATION

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ABSTRACT

This Industrial Case Study explores a proposed automated tank management system that simulates a continuous blending process feeding multiple production lines. With a tight process window on raw material age (“too young” and the product does not set up properly; “too old” and product quality becomes unacceptable), the simulation evaluates a multitude of easy-to-deploy operating policies that maintain tight age- and level-control of the fluid in a pair of new, integrated bulk storage tanks in this around-the-clock operation. The development of the blending policies and pumping strategies that maintain stable system control will be explained. The importance of input data collection, cleansing, manipulation, and fitting of historical data using stochastic distributions to efficiently and accurately model system behavior will also be discussed.