

CASE STUDY

CHEMICAL PLANT EMBRACES A HOLISTIC OPERATING SYSTEM

Chemical companies face strict regulations and exacting customer specifications, along with increasing demand for customized products. These require rapid line changeovers while still maintaining quality, cost, and safety and environmental standards. Performance Solutions by Milliken, the consulting division of Milliken & Company, offers chemical executives a systematic framework to engage employees — leadership to frontline associates — in ongoing problem-solving and continuous process improvement that boosts critical performances and the bottom line.

CLIENT

This Performance Solutions client is a business unit of a multibillion-dollar, global chemical firm producing acrylic and methacrylic monomers and oligomers (used in coatings and inks). The batch-chemical manufacturer has four production sites, including two in the United States. Each site has 100 employees or fewer; two are unionized; and the facilities range in age from 20 to 50 years old.

PERFORMANCE-IMPROVEMENT OPPORTUNITY

Performance Solutions has worked with the client for approximately two years. Leaders from the company traveled to Performance Solutions headquarters in Spartanburg, SC, where they learned about the potential improvement from a consulting engagement via the accommodate, educate, and demonstrate (AED) program: executives meet with Performance Solutions leadership, learn about the Milliken Performance System (MPS), and tour high-performance Milliken facilities. “They had a good AED experience and decided to contract with Performance Solutions for a plant assessment, and then began an implementation at a single site,” says Cara Thompson, a Performance Solutions senior practitioner.

This “model” site runs multiple products on individual lines, requiring numerous

changeovers. “The plants have decent operations,” says Thompson, “With outstanding safety and environmental processes and well-maintained equipment.” Management of the business unit sought Performance Solutions’ assistance in deploying and sustaining a management system to:

- Increase and measure employee engagement
- Routinely capture and visually present key performance indicators (KPIs) to ensure improvement activities align with business strategy
- Develop methodical, systems-based thinking for continuous improvement

“There had been a lot of management ‘muscling through’ to make things happen at this site, along with individual heroics,” says Thompson. “They wanted

to move toward a more standardized operating system.” This is especially important in the chemical industry, as many experienced employees are now retiring; companies face the prospect of losing these workers’ tacit process knowledge. With a standardized system, new employees can be onboarded into specific, well documented roles and responsibilities, and gradually increase their skill sets over time.

The company’s 20-year-old model site was particularly vulnerable, given that half of its employees had been there since startup. Explains Thompson, “They’re facing an enormous potential brain drain on how to safely and effectively operate their organization.”

WORKING WITH PERFORMANCE SOLUTIONS PRACTITIONERS

Performance Solutions helped the client in systematizing best practices so that, as people are promoted or retire, the organization maintains disciplined processes and improvement strategies. This required Thompson and Performance Solutions practitioners to transform the plant's continuous improvement approach from being simply project-focused into a holistic, integrated system.

This type of transformation can be difficult if there's no "burning platform" for change, notes Thompson. "And it can be difficult to achieve those early wins that get people excited and engaged. But we were able to demonstrate financial wins through our focused-improvement projects. In doing so, a lot

of the new processes also made it easier for operators to do their jobs, so the client enjoyed intangible wins with the operators and employee buy-in as well."

Thompson and other Performance Solutions practitioners started with a model area at the site, teaching standard MPS methodologies/pillars — e.g., daily management system, continuous skills development, 5S, daily team maintenance. They then formed pillar teams to implement the standardized process, learn the methodology, and become local experts who communicate their pillar activities and the management system to others. The model area improved over approximately six months, after which practitioners coached the

pillar teams on how to expand the system across the plant (system replication). Practitioners also challenged teams "in a constructive way — their pace, their results, their drive to integrate," says Thompson.

The final six months of the 24-month engagement includes leadership coaching on how to embed the operating system while creating accountability for sustained process and KPI improvements. Special emphasis is given to connecting operators with daily performance measures, spur problem-solving, reinforce safe work behaviors, and recognize top performers.

THE FIRST-YEAR RETURN ON INVESTMENT FROM WORKING WITH PERFORMANCE SOLUTIONS WAS APPROXIMATELY 4.5-TO-1.

POWERFUL IMPROVEMENTS

The work of Performance Solutions practitioners has helped the model site improve and sustain performance by building in accountability throughout the workforce for the targeted KPIs. "Management is using their performance data daily to inform the workforce of how things are going, how they did on their shifts, how they did for the week, for the month," says Thompson. "They are also using that performance data to make better decisions about how

to respond to issues, select upcoming improvement objectives, and prioritize limited resources. Leadership processes have evolved to a daily management system — they have established the right visual management tools, performance feedback conversations, and meeting cadence to run the plant more effectively day to day."

Even though the plant had enjoyed solid performance prior to the engagement, the first-year return on investment from

working with Performance Solutions was approximately 4.5-to-1. The plant's KPI scorecard also shows that cost, safety, environmental, and quality performance either stayed the same or got better. For example, quality yield increased from 99.5% to 99.9%, and the plant has now gone three years without a recordable injury. Because of the continuous improvement projects, the plant's financial measures for variable and fixed spending improved as well.

FUTURE SUCCESS

Performance Solutions is finishing the two-year engagement at the model site and will continue to monitor progress and sustainability as internal experts manage the system. In addition, two more plants (one in the United States and one in China) have undergone Performance Solutions assessments, and are now starting engagements.

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