

CASE STUDY

Maintenance Backlog Reduction in Seven Weeks at US Chemical Plant



Aim	Correct excessive maintenance backlog and overtime
Client	American chemical manufacturer
Status	Six Sigma Black Belt had identified an opportunity to reduce overtime by \$2 million USD
T.A. Cook	Selected due to significant international experience in the industry

Background

A US-based olefins and polypropylene manufacturer was having difficulties coping with their maintenance backlog and excessive overtime hours. The chemical company contacted T.A. Cook to conduct an analysis and implement a plan to improve maintenance efficiency.

Approach

After a two-week analysis, T.A. Cook worked closely with the manufacturer to implement a 10-week improvement plan to reduce the maintenance backlog and improve planning and scheduling. Following interviews with key personnel, underlying behavioral root causes were identified, namely, maintenance coordinators being assigned too many "additional tasks," which prevented them from properly reviewing and managing the work orders. By reassigning these tasks, they could focus on the backlog cleanup and eliminate redundancies.

The lack of planning and scheduling processes was also having a negative effect. After a Management Control and Reporting System (MCRS) was designed and implemented, the team worked with the maintenance manager to establish and communicate clear work expectations for planners,

schedules and maintenance coordinators; and then, to design and build a weekly schedule, update it daily and measure schedule compliance and schedule breaks.

With the site leadership team, T.A. Cook established and agreed on the critical key performance indicators (KPIs) at organizational and functional levels. Together, the terms of reference (TOR) for each MCRS review meeting were set up to specifically define the participants, timings and meeting inputs/outputs for an agenda. Action item logs were introduced to capture and manage agreed-upon actions. Finally, one-on-one coaching was used in follow-up sessions to ensure that everyone involved in the MCRS reporting process knew how to behave to drive optimum performance.

Achievements

With these improvements, the manufacturer was able to reduce overtime by three percentage points within 10 weeks. Across four different areas, the site backlog was reduced by 35% in seven weeks. Schedule compliance increased from 32% to 70% while unscheduled hours decreased from 45% to 30%. Utilizing the Six Sigma tools to focus on the "behavioral" aspects of the maintenance shortcomings will help the company's sustainable performance long-term.

Benefits

- Unscheduled hours reduced by \$2m USD, and overtime decreased by 30%
- Site backlog reduced by 35% in seven weeks
- Schedule compliance increased to 70%
- Overtime was reduced by 3% points in 10 weeks
- Percent past due PM work orders went from 28% to 26% in eight weeks

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