Underperforming Refinery Moves from Poor Functionality to Second-Quartile Performance

A phased Performance Excellence Process™ approach from Solomon identified specific areas to improve operational efficiency, reduce costs, and upgrade information systems.

**CHALLENGE**
A company acquired an underperforming North American refinery and sought to improve its operational efficiency.

**SOLUTION**
Solomon applied its Performance Excellence Process methodology with a phased approach, making specific performance improvement recommendations.

**RESULTS**
The refinery moved mechanical availability from the fourth to the second quartile, with turnaround costs also reaching into the top half for availability, scope, and maintenance costs.

An uphill battle, downstream
A company that was a previous Solomon client acquired a mid-sized North American refinery whose performance was in significant decline due to waning mechanical availability, rising costs, and poor overall utilization. Having more extensive experience in the upstream sector, the company turned to Solomon to assess its new acquisition and make recommendations on how to optimize its operational and maintenance efficiency. The company also engaged Solomon to evaluate refinery management roles in order to make recommendations regarding organizational restructuring.

Phase 1: Identifying inefficiencies
Solomon’s approach was carried out in three phases using its Performance Excellence Process™ (PEP), a methodology that is tailored to the specific needs of each client. The Solomon Advisory Services team for this refinery assessment immediately launched into Phase I of the PEP, focusing specifically on operations, maintenance, oil movements, and Environmental, Safety, and Health (ESH) management. It also developed an assessment methodology to determine whether all expected functions within the refinery were being addressed, ensuring there were no duplicated efforts.

Among the most significant findings were the following:

- No standardized process existed to address reliability issues.
- More than 60% of maintenance was reactive and performed on an emergency basis.
- Little to no formal planning or scheduling of work took place.
- Preventive maintenance was often postponed in favor of emergency work.
- No backlogs had been developed.
- Maintenance materials were poorly managed.
- Accounting systems were not discrete and did not allow for analysis and improvement.
Phases II and III: Closing the gaps

With key inefficiencies identified, the Solomon team moved into Phase II, developing specific recommendations to address these opportunities for performance improvement. To help the company close gaps in refinery processes, Solomon assisted it in prioritizing its recommendations and detailing implementation plans for each issue.

In addition to addressing the refinery's functional and organizational inefficiencies, Solomon noted that the information systems in place were extremely dated and required significant upgrades. As part of its shift into Phase III, in which Solomon acted as a trainer and partner to the company, it also recommended specific actions to the board of directors, helping to guide the selection, configuration, and implementation of new information systems.

A successful partnership

Now acting as a partner to the company, Solomon provided training sessions in best practices for reliability and maintenance to refinery management, engaging them in the performance improvement process. Solomon continues to support this client through a continuous service contract as the refinery continues its journey to increased efficiency.

The refinery has skyrocketed from the bottom of the fourth quartile in mechanical availability to healthily within the second quartile. Its turnaround performance also sits in the second quartile for availability, scope, and maintenance costs. Non-turnaround costs continue to be below average, but are trending upward.