

Marathon Ashland Petroleum

Client Overview

Marathon Ashland Petroleum (MAP) is a combination of the major elements of Marathon Oil and Ashland Inc.'s refining, marketing, and transportation operations. It has seven refineries, which account for approximately 6 percent of the total U.S. refining capacity, and has a combined in-use crude oil refining capacity of 935,000 barrels per day. The seven refineries are located in Garyville, Louisiana; Catlettsburg, Kentucky; Robinson, Illinois; Canton, Ohio; St. Paul Park, Minnesota; Texas City, Texas; and Detroit, Michigan.

Marathon's original four refineries at Garyville, Robinson, Texas City, and Detroit are integrated via pipelines and barges to maximize operating efficiency. The transportation links that connect the refineries allow the movement of intermediate products to optimize operations and the production of higher margin products.

The Challenge

For ten years Marathon had operated a very capable legacy system for computerized maintenance management (from a mainframe networked from corporate headquarters in Findlay, Ohio). The company commissioned Tompkins Associates to provide a Computerized Maintenance Management System (CMMS) Needs Analysis and develop a recommended strategy to improve maintenance practices and to implement new CMMS technology at its refineries.

Marathon also asked Tompkins to provide a recommended CMMS solution that included the ability to predict and prevent failures by analyzing existing critical information and reliability data not currently being used by the legacy system.

The Solution

Tompkins' solution included a Scoreboard for Maintenance Excellence assessment at the four original Marathon Oil refineries, with specific recommendations for improvements at each location. A complete definition of functional requirements for a future CMMS and a recommended performance measurement process were needed. Tompkins' combined team effort with Marathon staff provided a true Marathon solution. Results over the course of the project included:

- Developed functional requirements for a corporate-wide CMMS
 - Established reliability management needs for enterprise reliability management system (ERMS)

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- Established a method to evaluate vendors quantitatively and qualitatively
- Evaluated the legacy system for upgrades
- Established a recommended Marathon CMMS/ERMS strategy
 - Recommended ERMS vendor and legacy CMMS upgrades
 - Established CMMS implementation plan
- Conducted benchmark assessment at four refineries
 - Developed a Scoreboard for Maintenance Excellence benchmark rating
 - Defined improvement opportunities of over \$6 million
 - Developed specific improvement opportunities for each category
- Developed recommended improvements to existing planning and scheduling process
 - Introduced work measurement techniques
 - Measurement of planning effectiveness
- Recommended a corporate-wide performance measurement process
 - Developed corporate-wide metrics and performance goals for each
 - Created a Marathon Maintenance Excellence Index (MEI)

The Results

Tompkins helped Marathon achieve its corporate-wide goal for an ERMS. These results led to upgrades of the company's legacy systems as an interim step before a new business system. Key results include:

- Best practices with potential savings of over \$6 million identified for implementation
- A corporate-wide strategy developed to integrate a best-of-breed ERMS with an upgraded legacy CMMS
- An overall maintenance excellence strategy established as a result of the total maintenance operations assessment
- A world-class CMMS and standard best practices in place for implementation at all four Marathon refineries and ready to apply at three new Ashland sites
- A method for greater accountability and productivity of all craft labor and material resources
- A renewed focus on effective planning and scheduling processes