

# RWD Works with Mobil in Successful Texas Olefins Plant Startup

## Employees Benefit from Complete Human Performance System

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When Mobil Chemical Company expanded their Olefins Plant in Beaumont, Texas they saved approximately \$6.6 million because of a world-class documentation and a training system created by RWD Technologies. The entire effort included shutting down, rebuilding, and restarting the entire plant.

To ensure a successful turnaround, Mobil approached RWD with the following project goals in mind. Mobil wanted to:

- Achieve an incident-free startup
- Reduce the time to competency for operations personnel
- Maximize profits by eliminating human errors and increasing worker confidence
- Implement a world-class human performance support system

### Client Challenge

Mobil first had to address several personnel-related challenges. A normal level of retirement and turnover meant that more than three-fourths of the workers were not involved in the previous major shutdown and startup. In addition, the project called for replacing several major systems and adding new technology for the workers to learn. Safety is always a big concern when handling large amounts of hydrocarbons, and downtime is tremendously expensive. Mobil could only afford a first-class human performance effort.

Mobil's Training Director, Joe Jordan, had to ensure that all things went according to the plan. "Several years ago, we built a documentation system that was the best in the industry. Then while we stayed at that level, everyone else improved and surpassed us." Jordan's goal was simple. "We wanted to be the best again." Mobil turned to RWD for help. "We investigated RWD's background, and they had a good reputation in the industry. We were confident they could help our workers do the job right," said Jordan.

*"We had a lot of operators who had never been through a major turnaround before. We had to do everything to make sure our people were prepared."*

-Duane Forrest  
Outage Coordinator for Mobil

### What Our Client Said...

*“By the end of the shutdown, we were five days ahead of schedule. This ultimately put our startup five days earlier, resulting in about 27.5 million pounds of ethylene production. This RWD effort was a good investment for Mobil Chemical.”*

—Joe Jordan  
Training Director for Mobil



RWD offered a multi-faceted solution with proven human performance tools. Mobil experts partnered with an RWD team, and together they devised a performance support package that included:

- **Large Control Diagrams (LCDs)** - These diagrams clearly convey the function of the unit from feed to products. They include all of the instrumentation, equipment, and process flows that are encountered. These diagrams serve as a common mental model of how the new system would operate.
- **Procedure Sequence Flow Diagrams (PSFDs)** - These diagrams summarize numerous complex startup or shutdown procedures into an easy-to-follow, one-page format.

### Results

The LCDs helped during planning meetings and training sessions. By laying out all of the process flows and controls in an easy-to-read format, the LCDs were an instant hit. Mobil used them to teach people the system, learn the interrelationships of equipment and processes, and to train operators on possible scenarios. Operator Kirk Guidry stated, “These LCD drawings are the best training tools I’ve ever used.”

PSFDs helped the turnaround team to coordinate shutdowns and startups. PSFDs identified procedures that could be performed simultaneously and accelerated the startup and shutdown schedule. Mobil printed the diagrams in poster size and used them as a roadmap. “By using the PSFDs, we shut down as smoothly as we ever have,” said Mr. Forrest.

“By the end of the shutdown, we were five days ahead of schedule. This ultimately put our startup five days earlier, resulting in about 27.5 million pounds of ethylene production,” added Mr. Jordan. At the open market price, that would equate to about \$6.6 million. “This RWD effort was a good investment for Mobil Chemical.”