



## Pharmaceuticals & Biotechnology

### Client

Searle Pfizer

### Location

Barceloneta, Puerto Rico

## Searle Pfizer's Bulk Pharmaceuticals Plant

### Project Description

CH2M HILL Lockwood Greene provided planning, engineering, procurement, accounting, configuration, scheduling, validation, environmental, construction field support, and start-up and commissioning services for the expansion of Searle's bulk pharmaceuticals plant. Other services included technology transfer and detailed design.

The project involved retrofitting an existing facility to produce two new drugs, Celebrex® and Orbofiban, one of which Searle was in a "first-to-market" race with another major drug manufacturer. Specifically:

- Flash Track Project Planning – The design and construction activities were coordinated concurrently with laboratory development and pilot plant testing.
- Design Team - A dedicated design team was mobilized using resources and pharmaceutical expertise from multiple CH2M HILL offices. The design was executed out of three offices and with a large on-site team.
- Phase - The automated system is used to generate, organize, house, and print the master information for the station design modules, cost data, bid documentation, and construction, enhancing the organization of the design process and its speed.
- Schedule Driven Activities – Design packages were segmentally issued prior to completion of co-requisite tasks. Over 95% of all equipment was purchased prior to design approval. Design and management teams, in real time, modified process scenarios to meet target start-up dates.
- Significant Cost Minimization – A structure under construction was converted into a DCS control/rack room. Simultaneously, "changing areas" were consolidated into existing facilities, resulted in a savings of more than \$1 million and decreased the schedule two months.
- Sub-Projects – Three sub-projects were executed separate from the main production designs, in order to achieve FDA registration goals.
- Flexibility - The design of a 50%- complete production train was altered when equipment failures threatened to delay start-up two months.
- Total Integration – Design criteria was integrated from technology and research teams, corporate engineering-safety-QA, and plant operations, and management. Design concepts were communicated to operations via process control and DCS training, materials handling guidelines, cleaning procedures, validation protocols, and commissioning support.

The Celebrex® and Orbofiban expansion included complete building layout modification, several vertical building expansions, utilities additions, primary and secondary power expansions, ancillary upgrades in truck loading, tank farms, and RCRA waste storage. The process is controlled by a Fisher Provox DCS, and numerous integrated Allen Bradley PLCs. Three sub-



projects were executed in separate equipment: Registration Runs I & II, and Milling.