

## Cooling Water Systems Automation (CWSA) Upgrade

A major refinery in the southeastern U.S. needed to upgrade their cooling water treatment systems. The project required that each of the refinery's seven cooling systems be updated separately, a process that would take several years.

### Main Objective

In addition to the cooling systems, the customer needed improvements in chemical treatment program performance and flexibility, as well as the measurement of tower make-up water flow. It was also necessary for MAVERICK to provide an overall redesign of the cooling system sampling, chemical handling, monitoring and control systems.

### Customer Results

The first of seven areas in the refinery is complete. The project execution plan was designed to require customer involvement and approval at various steps along the way, ensuring that the final outcome met the performance parameters and satisfied the goals of all major parties.

### Application Description

- Maverick Technologies delivered the following to the customer:
  - Operating philosophy and simplified process flow diagram (PFD)
  - Detailed mechanical engineering
  - Detailed civil engineering for concrete structures
  - Detailed instrumentation and electrical engineering
  - Preliminary bill of materials (BOM)
- The upgrade improved operator ergonomics, automated the control of both chemical addition and cooling system blowdown, enhanced personal and environmental safety and provided continuous online monitoring of water quality parameters.
- MAVERICK engineers interfaced with a myriad of departments within the customer's organization throughout the project, including:
  - Project Engineering
  - Technical Services
  - Electrical, Instrumentation and Mechanical Engineering
  - Process Engineering
  - Refinery Operations
  - Construction Management
  - Safety Management
  - CAD Design Group
  - IT and Network Infrastructure
- Following the engineering phase, Maverick is also contracted to assist the customer with procurement assistance, programming of PLC and OIT, FAT testing of skids and construction and startup support.

