Simulation Testing

Factory Acceptance Testing of Every System Shipped

One of the most critical and time consuming phases of an automation/control project is the startup. The combination of many sensors and pieces of equipment involved, complex sequencing requirements, and sophisticated software creates a tremendous potential for multiple glitches that have to be worked out on-site. This can produce costly delays in getting a project on line, a major headache for plant managers, and potential for contentious finger pointing among the various vendors on the project.

Simulation testing is a way to avoid all these problems. With simulation testing, the systems integrator recreates the working environment, relative to all of the system's inputs and outputs, in the integrator's facility. Using specially constructed hardware and custom software, the system's engineers can simulate actual working conditions and perform the extensive quantity and type of tests needed to identify and fix and potential problems before the system arrives at the job site.

The result is significant benefits to the customer:

- A thorough check out of all functions and operating sequences is performed without imposing undue wear on in-place equipment that would otherwise be turning on and off many times during the testing process. This extends the operating life of equipment and reduces maintenance costs.

- The simulation testing virtually eliminates the control hardware and software as a source of trouble during startup testing, meaning any problem sources are easier to locate and correct, and costly schedule delays are minimized, or avoided altogether.

Integrators who perform simulation testing on their systems are not always the low-cost provider. But the total value–excellent return for the dollars spent–provided to the customer far exceeds any additional up-front costs. And isn't value what we all want in the products and services we purchase?

Such pre-installation testing was responsible for what customer personnel called "the smoothest startup we've ever seen" at a reverse osmosis water treatment plant. Glitch-free transfer from old equipment and systems to new was accomplished in half a day.

PC-based programs allow test engineers to assign simulated inputs/outputs to individual PLC cards and to specify parameters and operational status for each I/O.