A DCS retrofit project or new installation usually includes training for plant operators and I&C technicians. Personnel turnover, major equipment changes such as a DLN retrofit, or a change in plant ownership may also prompt DCS training. Typically, operators are focused on the plant process: how to monitor and control it, and they want details about process graphic interfaces, alarming, and trending. I&C technicians on the other hand are interested in maintaining the DCS in good working order, troubleshooting, signal tracing, and system administration. Control logic functionality and historical data retrieval are also important topics.

Onsite Training

Onsite DCS training allows a large number of plant personnel to be trained on a flexible schedule using their own equipment, control logic, and operating procedures. Training materials, tests, and hands-on exercises organized around specific performance objectives can be customized to fit the specific needs of the trainees. Typical performance objectives are:

**Operator Training**

1. Perform operator selectable control functions from Process Graphic Screens.
2. Navigate the Data Analysis and Maintenance Menu and use its functions.
3. Use Point Information and the Point Search Functions.
4. Build and display Trend Groups.
5. Navigate the Alarm Screens.

**I&C Training**

1. Know basic functionality and location of all DCS hardware; be able to troubleshoot and replace faulty modules; be able to load controllers/DPUs.
2. Monitor control logic, correlate WDPF logic to the corresponding SAMA drawing, and be able to troubleshoot and correct faulty software configurations.
3. Navigate the directory structure, perform basic system admin tasks, and perform system back-ups.

**Self-Paced Training**

Computer-based, self-paced training is a useful complement to onsite training. It allows operators and I&C technicians to review DCS documentation and test their knowledge using “bite-sized” modules organized around specific performance objectives.
Field Service

Make it a standard maintenance procedure to take advantage of training opportunities whenever a field service engineer is onsite. In most cases field engineers will gladly share invaluable insights and experiences so integrate training with field service whenever possible.

“Cookbook” Procedures

Some DCS tasks lend themselves well to “cookbook” procedures. Procedures such as point directory update, software server back-up, and historical data collection can be customized and compiled into an illustrated procedure manual. For I&C technicians responsible for multiple DCS platforms, PLCs, CEMs computers, and plant instrumentation this can be a valuable reference.

Plant Simulator or Test-Bed

A plant simulator can be used by plant operators and I&C technicians to practice normal operating procedures, simulate process upsets, and debug control software modifications prior to implementation. The WDPF simulator using the same DPU and WEStation hardware as the plant control system can double as a “hot-spare” parts bin, improving plant availability when critical WDPF parts fail. A test-bed allows testing of DCS hardware components such as I/O cards, power supplies, processors, and communication circuit boards. However, it also provides the software tools needed to build/modify databases, control logic, and process diagrams.

Training is an ongoing process. In addition to the examples listed above, turbine or HRSG user’s group meetings, industry publications, and ISA certification programs present excellent training opportunities and can either complement or provide an alternative to OEM training.

About us...

Process Control Solutions specializes in control system engineering, project management, and commissioning support for Ovation system retrofits. We supply WDPF/Ovation software configuration, optimization, training, and perform logic reviews to insure SAMA drawings are “AS- BUILT” for Combined Cycle and Fossil Steam Power Plants.

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