

DuPont Gains Low-Cost Startup, Predictive Maintenance Supported by AMS™ Suite: Intelligent Device Manager



RESULTS

- Saved 20 days of technician time through more efficient commissioning
- Reduced loop checkout time from 700 to 100 hours
- Plant was up and running 10 days earlier than predicted due to efficient interlock validation
- Savings during startup and commissioning on one project paid for all asset management software and hardware



APPLICATION

Startup and ongoing operation of some 250 new transmitters and valves in two expansion projects completed in 2002.

CUSTOMER

DuPont Fayetteville Works, North Carolina

CHALLENGE

During planning for two expansion projects at the DuPont plant, it became apparent that a means was needed to access information generated by smart field devices being installed there. It was also deemed important to have a central database on the condition of these devices, providing a useful source for maintenance personnel to consult before engaging in various startup and maintenance procedures.

SOLUTION

Control Systems Engineer Warren Way was aware that Emerson's AMS™ Suite: Intelligent Device Manager technology was designed to obtain and make use of the large amount of diagnostic information generated by intelligent, microprocessor-based field instrumentation. This software, which is an element of Emerson's PlantWeb® digital plant architecture, can interface with smart instruments via an RS485 communication network, making it possible to communicate with these devices and examine their condition in a way never before possible.

“In an operating plant, AMS Device Manager remains a valuable tool. For troubleshooting, when operations reports an instrument problem, the first step is to check AMS Device Manager. Since startup, we have not pulled an instrument or control valve that we did not know there was a problem with beforehand.”

Warren Way,
Control Systems Engineer,
E.I. DuPont deNemours Company

AMS
Suite

For more information:
www.assetweb.com


EMERSON
Process Management

Calibration checks, function checks, and loop checks were done using the AMS Device Manager software, making the commissioning process more efficient. "By a conservative estimate," Way said, "we saved 20 days of technician time. Because this software communicates directly with each device in the field, our rigid loop checkout and interlock validation requirements could be satisfied without technicians having to physically locate some 250 newly installed transmitters, attach test instruments, and implement established test procedures."

Loop checkout tests proved to be extremely efficient, since all field transmitters could be polled in sequence from the control room. The integrity of each loop could be confirmed in just minutes, because technicians no longer had to venture into the field with radios to find and open each device, clip on handheld communicator leads, force outputs, and communicate with another technician back in the control room. One person was able to do everything. "Loop checkout took about 100 hours using this system," Way said, "versus what could have been 700 hours of technician time without the software."

Interlock validation was conducted with the process in simulation mode and not actually running. A technician systematically manipulated the output of each transmitter to exceed process conditions and then watched for the plant to respond, indicating that the safety interlocks were working properly. This procedure took place right in the control room alongside the control console, saving large amounts of time while effectively validating the interlocks. This approach "probably enabled us to be up and running 10 days sooner than if we had used traditional methods on these two projects," Way said.

Now, the AMS Device Manager is the basis for a predictive maintenance program, providing valuable "heads up" warnings if any field devices begin to deteriorate. In such a case, maintenance technicians can evaluate the situation to determine how long the device can be expected to perform satisfactorily and when it should be replaced. Advance knowledge of the condition of field devices is especially useful where chemical hazards can make it difficult for technicians to get to an instrument and break into a line while the plant is operating. Most importantly, decision-making regarding maintenance is based on *factual information and not supposition*.



Warren Way (standing) Control Systems Engineer at DuPont, Fayetteville, N.C., points out a Status Alert on the AMS Device Manager console to Instrument Technician David Bailey.

Emerson Process Management Asset Optimization Division

12001 Technology Drive
Eden Prairie, MN 55344 USA
T 1(952)828-3022
F 1(952)828-3033
www.assetweb.com

©2004, Emerson Process Management.

The contents of this publication are presented for informational purposes only, and while every effort has been made to ensure their accuracy, they are not to be construed as warranties or guarantees, express or implied, regarding the products or services described herein or their use or applicability. All sales are governed by our terms and conditions, which are available on request. We reserve the right to modify or improve the designs or specifications of our products at any time without notice.

All rights reserved. AMS, PlantWeb, CSI Machinery Health are marks of one of the Emerson Process Management group of companies. The Emerson logo is a trademark and service mark of Emerson Electric Company. All other marks are the property of their respective owners.



AMS Suite: Intelligent Device
Manager powers PlantWeb
through predictive and proactive
maintenance of intelligent
field devices to improve
availability and performance.