



Process Control Troubleshooting for Pulp and Paper Operators

Your technical resource for improving Pulp and Paper process control performance

Topics covered include:

- Control loop fundamentals and terminology
- Function of the control loop
- Loop Dynamics
- Understanding Control Loop Performance
- Loop performance targets
- Analytical control loop troubleshooting procedures

Operators are the first point of attack in identifying and troubleshooting pulp and paper process control problems. However, they often lack the understanding of control loop performance issues to be effective in dealing with these problems.

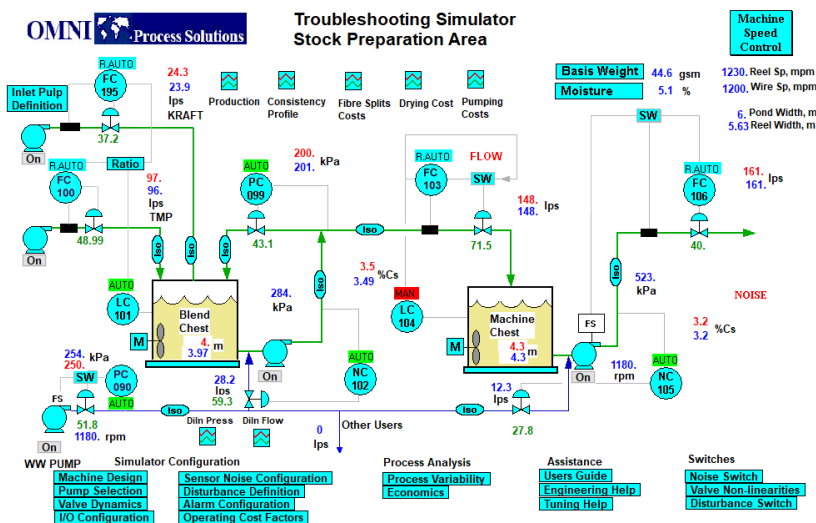
The one-day operator course is practical and results oriented. It is designed to give operators the basic skills and tools to identify and communicate process control problems. Approximately 30% of the course is devoted to a computer-based DCS-like process simulator, where the attendee practices the concepts presented during the lectures.

Course Fees

CDN	\$1000.00
USD	\$800.00

(Canadian Taxes Included.) Fees include a full set of course notes.

The course is limited to 10 participants to provide individual attention and allow our expert instructors to address specific attendee issues.



Course Schedule

Lecture 1 08:00 – 9:00	Process Control and Variability Overview Sources of process variation Impact of variation on process performance Role of the control loop in reducing variability
Lecture 2 9:00–10:00	Control Loop Basics Basic Control loop functioning Overview of Loop Components Controller modes and terminology Introduction to loop dynamics Common control loop problems
Lab 1 10:00-11:00	Recognizing Control Loop Problems Open Loop bump testing Identifying sensor and valve response problems
Lecture 3 11:00 - 12:00	Understanding control loop performance Attributes of good Setpoint and Load response Impact of tuning on setpoint and load response Limitations of the control loop Symptoms of poor control loop performance
Lab 2 12:30 – 1:30	Investigating Control loop performance Evaluating setpoint response Impact of Tuning on Setpoint and Load response Impact of Control Valve problems on loop performance
Lecture 4 1:30 – 2:30	Advanced Control Strategies Definition of Cascade, Ratio, Feedforward Control Opportunities in Pulp and Paper
Lecture 5 2:30 – 3:30	Troubleshooting control loop problems Diagnostic procedures Documenting the problem Auto/Man Test, Open Loop and Setpoint Response testing
Lab 3 3:30 –4:30	Troubleshooting control loop problems Identifying problems / solutions of control loop problems
Wrap-Up and Discussion 4:30 – 5:00	

Course Location

The course is being held at a conference facility. Attendees are responsible for arranging their own accommodations.

Accommodations

For convenience, we recommend that registrants stay at the hotel course site.

About ProNamics

Omni Process Solutions, a division of Omni Continental, is based in Vancouver, BC. The company conducts process and control optimization surveys and provides a range of training courses related to process control optimization. Visit our web sites at www.omniprocesssolutions.com for more information about our services.

About the Course ...

The course begins with an overview of process variability and its impact on pulp and paper processes. The functioning of the feedback control loop and its role in minimizing variation is covered next. The open loop bump test procedure is reviewed as a method to measure loop dynamics and diagnose loop performance problems such as poor sensor and valve performance. The impact of controller tuning on loop capability is explored.

Analytical techniques to identify and correct process control problems is the final topic. Approximately 30% of the course is devoted to a computer-based lab, where the student demonstrates that they have understood the main concepts.

Who Should Attend...

The overall course objectives are to strengthen the operator's ability to recognize poor loop performance, and diagnose / communicate process control problems to engineers and technicians. The course is designed for process operators, shift supervisors, operations engineers.

Instructor – Doug Nelson

Doug has over 30 years of industrial process control experience. He has extensive experience in process control training of operators, E/I techs and process control engineers.