Director’s Message

By Brad S. Carlberg, P.E.
BSC Engineering – Daphne, AL

Well; it’s already the second month of the new year and although business is still a bit slow in my neck of the woods, the first month has gone by quickly. How about you?

There’s only another week to submit an abstract for the fall conference this upcoming October 20 – 23 at the Reliant Center in Houston. I’ve already submitted two abstracts for the third edition of the “Web-Based HMI Panel” and a new panel on Ethernet I/O. Think of a hot topic to present and go to the ISA 2003 website and submit an abstract. We’d like to have all three days filled up with pulp & paper sessions again this year, so we need your help.

There’s only another three weeks until the 2003 PUPID scholarship deadline. If you know of any deserving student, urge them to go to the PUPID website, look at last years scholarship winners, fill out the application and email it to Mike Waller. UNLESS, of course, the $1000 isn’t worth their effort.

PUPID membership is maintaining the 1150 level that it has been for the last year and a half. How can we get back to the 1996 membership level of around 1900 members? I’ve tried to give you a lot of free information relying on “the honor system”; but I guess I’ll have to take it off of the non-member’s website and put it onto the member’s only website so people can’t get it for free, right? (I may be a bit slow to learn; but fool me once, shame on you, fool me twice shame on me.)

Anyway, I digress. Back to the news.

We are again partnering with the TAPPI Papermaking, Coating, Finishing, Microbiology, Process Control, Electrical & Information, Process & Product Quality and Engineering divisions for the Spring Symposium, PUPID will have four sessions at the Sheraton Chicago Hotel & Towers this May 11 – 15. (See the papers & presenters later in this newsletter.) The next two years’ TAPPI/PUPID events are already in place; in March of 2004 the TAPPI Paper Summit will be at the Georgia World Congress in Atlanta and in the spring of 2005 TAPPI and PUPID will be at the Adam’s Mark in Jacksonville, Florida. Mark those dates on your calendars.

Again at this year’s ISA Fall Conference, the ISA Joint A&T/I&S Luncheon will be on Monday and the PUPID Luncheon will be on Tuesday AND it will be FREE to the first thirty RSVP’ers again.

I’d like to thank Leoncio Estevez-Reyes for compiling this quarters’ Logger newsletter. Good job!

Well, I’ll sign off now until next time; keep watching the PUPID website for upcoming attractions!
Tuning Tip

Using the very fastest tuning, the feedback control loop will reduce or eliminate the effects of disturbances as quickly as possible. The problem with fastest tuning is that the loop is not very robust: it is very sensitive to relatively small changes in process dynamics. So, if your process interacts with other loops, or may change some, fastest tuning can be overly sensitive possibly causing the loop to oscillate or worse yet, go unstable. You need to use a safety factor. The safety factor is the amount that you back off from the fastest possible tuning. Doubling the safety factor will roughly double the robustness of the loop and at the same time decrease the performance by roughly a factor of 2. Changing the safety factor may change one or all of the tuning parameters in the controller (depending on the process type and the controller structure). The safety factor lets you adjust with one value, the trade off between tight tuning and sensitivity to process changes. We suggest starting with a safety factor of 2.5 if you feel the data collected for analysis is good and the process is mostly unchanging, then use a smaller safety factor. If you are tuning loops on Friday afternoon, you may want a larger safety factor!

(From the EXPERTUNE tuning tips on Page 8)

We've Found an ISA PUPID Newsletter Editor

Leoncio Estévez-Reyes has decided to try the position of newsletter editor. Please give him your support to maintain the quality of our newsletter.

Calendar of Events

March 4-6, 2003
ISA Industrial Network Security Technical Conference
The Industrial Network Security Technical Conference will cover industrial security challenges and solutions, including manufacturing information assurance, physical and cyber security integration, wireless network security, assessing industrial network risk, and more.
Crowne Plaza Hotel, Los Angeles Airport
April 27 - 30, 2003
PIMA 2003
VANCOUVER, BC
May 4-7, 2003
International Environmental Conference & Exhibit
with TAPPI, NCASI, PAPTAC, USDA Forest Service
OREGON CONVENTION CENTER, PORTLAND, OR
May 5-7, 2003
57th APPITA Annual Conference
Themes include: Managing Technology, Controlling Wastepaper Contamination and Quality, Coating and Printing, Water and Energy Conservation, and Systemised Troubleshooting
CARLTON CREST HOTEL, MELBOURNE, AUSTRALIA
May 11 - 15, 2003
2003 ISA PUPID Spring Symposium at the 2003 TAPPI Spring Technical Conference & Trade Fair with PCE&I, Paper & Board and Coating divisions
SHERATON HOTEL & TOWERS, CHICAGO, IL
Come & See the PUPID sessions!

ISA President’s Fall Meeting
RELIANT PARK, HOUSTON, TX
October 18 - 19, 2003
Come meet your leaders & get involved!
ISA 2003
October 20 - 23, 2003
RELIANT PARK, HOUSTON, TX

Upcoming ISA Conferences & Exhibitions

<table>
<thead>
<tr>
<th>Year</th>
<th>Date</th>
<th>Location</th>
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<tbody>
<tr>
<td>2003</td>
<td>October 20–23</td>
<td>Houston, Texas</td>
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<tr>
<td>2004</td>
<td>September 20–23</td>
<td>Houston, Texas</td>
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<tr>
<td>2005</td>
<td>October</td>
<td>Chicago, Illinois</td>
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<tr>
<td>2006</td>
<td>October 9–12</td>
<td>Houston, Texas</td>
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<tr>
<td>2007</td>
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<td>Chicago, Illinois</td>
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<tr>
<td>2008</td>
<td>October 20–23</td>
<td>Houston, Texas</td>
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<tr>
<td>2009</td>
<td></td>
<td>Chicago, Illinois</td>
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<tr>
<td>2010</td>
<td>October 11–14</td>
<td>New Orleans, Louisiana</td>
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ISA Pulp & Paper Industry Division 2003

You can see the online calendar at [http://www.isa.org/~pupid/ISA_PUPID_2003_Calendar.htm](http://www.isa.org/~pupid/ISA_PUPID_2003_Calendar.htm)
Networking Together—Creating a Web of Value:

The conference will offer Division-specific sessions spread over 3 ½ days. Dependent on the subject matter, topic integration will be designed to enhance the interactions among attendees. The multi-Division schedules will promote networking opportunities for all.

A broad range of industry experts will be available to train Mill Operations people and Supplier Sales/Service Team personnel in all aspects of paper manufacturing technologies from the high-density chest to the shipping department. This means that your operations people, or technical sales/service people that support the mills, will be able to learn in great depth about the topics that are most relevant to them, and to you. They will be able to meet and greet the industry experts that drive the technology that you are using now, or will be using in the future. Experiences will be shared and real actionable items will be taken away so that true benefits will be realized from you and your team taking part in this evolutionary new conference concept.

**CONFERENCE "HIGHLIGHTS"**

**Keynote Speaker, Monday, May 12, 2003**
Mr. Art Holst, former NFL referee and President, Promotivation, Inc.

He will present a highly targeted, motivational message interspersed with NFL football anecdotes and good clean humor. One of his favorite themes is "The Challenge of Excellence," drawn from his personal experiences during his long career in business, sports and civic affairs.

Versatility is a "trademark" as he talks about handling change, problem solving, discipline, teamwork, communicating effectively and how to laugh at yourself. When Art speaks, people listen, laugh, and leave with new expectations, and with the desire to put their talents to work, both on the job and in their personal lives.

"Advances in Variable Imaging Technologies"

**Roundtable Moderator: Dr. Margaret Joyce**
This interactive roundtable will include both short presentations and panel discussion regarding the latest advancements in variable imaging technologies and need for new substrates.

**The expected participants are:**

- Future of Digital Printing Technology: *Howard Baldwin* - Spectra Inc
- New liquid Toner & Indigo Printing Technology: *Lorretta Page* - Hewlett Packard
- Substrate Requirements for Digital Printing: *Rafik Loutfy* - Xerox Inc
- High speed Continuous Inkjet Printing: *Lutfar Rahnan* - Scitex Digital Printing

**Printing & Converting Common Interest Group Meeting "CIG Lunch & Learn"**
**CIG Leader:** Dr. Margaret Joyce

This CIG lunch and learn session will talk about "Issues in color measurement and the need for new SWOP guidelines to address these issues", from both a fundamental and practical viewpoint.

**Presentation speaker:**

- Paul D. Fleming III, Western Michigan University

**5K Run/Walk**

The 5K Run/Walk will be held Tuesday, May 13, 6:00 a.m. Potentials runners/walkers and sponsors should contact Jane Schulenburg at jschulen@protein.com or (314) 982-3929

**FREE Seminar for Paid 2003 Spring Technical Conference Registrants!**

*Improving the Business Impact of Product Development: Key Success Factors*

Sunday, May 11, 1 - 5 pm

Speaker: Ian McKenna, Sopheon

The workshop consists of a four-part presentation, with an interactive session after each part to enable participants to assess priorities and approach within their own organization. At the end of the workshop the findings will be presented back to the group for discussion.

In this live, classroom seminar, participants can be expected to attain the following learning outcomes:

List key success factors in product development grouped in the following categories:

- **Strategy** - Choosing the right balance (portfolio) of product development activities
- **Product** - Selecting products in terms of market focus, technical feasibility and financial attractiveness
- **Process** - Using a well-defined process to support efficient project execution and good commercial decision-making
- **People** - An interdisciplinary organizational structure with a mix of appropriate skills with strong innovation-minded leadership

**All paid registrants must reserve a seat in this session - This seminar is listed as an option on your registration form and through internet registration.**

If you have any questions or would like to reserve a seat in the session please contact TAPPI Member Connection:

1 (800) 332-8686 (US)
1 (800) 446-9431 (Canada)
+1 (770) 446-1400 (Worldwide)

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**Course Objective:**

Our objective is to teach the following fundamental aspects of instrumentation and control (I&C).

- Principles
- Methods
- Selection
- Application

1. Instruction is provided by highly qualified instrumentation and control professionals under the sponsorship and support of the Birmingham Section ISA.

**Who Should Attend:**

This course is directed toward engineers, technicians, I&C team leaders and other technical professionals who are responsible for instrumentation and control equipment and systems.
## Spring Symposium PUPID Session Schedule

Come see the four PUPID Sessions:

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<tr>
<th>Session</th>
<th>Title</th>
<th>Presenter(s)</th>
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<tr>
<td><strong>Wednesday, May 14, 2003 3:30-5:00</strong></td>
<td>Advanced Chemical Imaging Analysis Technology For The Paper Industry</td>
<td>John T. McDonald, Kevin Anderson, Brian Anderson, Sean Smith, &amp; David Garlie; Cargill Scientific Resources Center</td>
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<td></td>
<td>A Rapid Method To Measure Glycerides In Wood Chips: A Facile Method To Assess The Age (Seasoning) Of Wood Chips</td>
<td>Bruce Sithole &amp; Larry Allen; PAPRICAN</td>
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<td><strong>Thursday, May 15, 2003 8:00-10:00</strong></td>
<td>Sonar-Based Volumetric Flow And Entrained Air Measurement For Pulp And Paper Applications</td>
<td>Daniel L. Gysling &amp; Douglas H. Loose; CiDRA Corporation</td>
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<td>A Computational Model For Predicting Pulp Fiber Flocculation In A Flowing Suspension</td>
<td>Michael R Gosz, Illinois Institute of Technology</td>
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<td></td>
<td>Pulper Additive Maximizes Recycled Fiber Quality; Impact On Tissue Production</td>
<td>Timothy J. Fogarty, Clearwater Solutions &amp; Andy Fitzwilliam, SCA Tissue North America LLC</td>
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<tr>
<td><strong>Thursday, May 15, 2003 10:30-12:30</strong></td>
<td>An Integrated Pulp And Paper Research Center In North America</td>
<td>Marc F. Foulger &amp; Bruce Crossley, GL&amp;V USA Inc.</td>
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<td>Impinging Evaporation Hood Design With Non-Steady Gas Jets</td>
<td>Rob States</td>
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<td>How Temperature Fluctuations Around Primary Air Ports Being Generated</td>
<td>Jerry Yuan, Process Simulations Limited &amp; Martha Salcudean, The University of British Columbia</td>
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<td>Effect Of Location Of High-Intensity Dryer Drum On Drying Rate</td>
<td>Homero L. Noboa, Johnson Controls, Inc. &amp; Jamal S. Yagoobi, Illinois Institute of Technology</td>
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<td></td>
<td>Service = Results For Gulf States Paper Gulf States Paper And Honeywell Corporation Have Formed A Service Partnership That Is Yielding Benefits For Gulf States. This Paper Describes The Partnership And Presents Case Study Results Focusing On Innovative Techniques For Training Using The Internet.</td>
<td>Keith Masters &amp; Cindy Bloodgood, Honeywell Chuck Smith, Gulf States Paper</td>
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WELCOME TO NEW PUPID MEMBERS

2003 New PUPID Members for February

- Robert F. Sikora
- John Marriott
- Rick P. Carrasco
- Andrew S. Hoover
- Stephen I. Ogonek
- Harsh Parag Satyapantangi
- Robert F. Sikora
- Michael D. Scipioni
- Kurt M. Trefiak
- W. Cy Rutledge
- L. Rodney Doig
- Robert M. Green
- Kenneth M. Queeney
- Eric Paul Boulianne
- Salvador P. Aranda
- Rahul Ram Krishna Gupta
- Clinton Mote
- Michael Moses Skroch
- Kenneth B. Brewer
- Jeff Offermann
- Charles L. McDowell
- Jan Myhrvold

2002 New PUPID Members for January

- Ersal S. Baydar
- Steven A. Mattson
- John B. Fitch
- Christopher Demos
- Donald C. Trask
- Ms. Janet E. McKennedy
- Bren A. Davis
- Jason Haines
- Craig Longcor
- Francois Denis
- Michael Pegorari
- T. John Holmi
- Grant J. LiaBraaten
- David W. Head
- Ron Cornelius
- Keith D. Saltmarsh
- Richard Owen Cash, Jr.
- Elliott L. Bell
- Justin R. Kostekeley
- Brent Stuart Rivard
- Frank Eggleston

Come On Back!

2003 Dropped PUPID Members for February

- Charles A. Mazander
- Michael Eric Berube
- Michael J. Tucker
- Thomas A. Keenan
- Osmond H. Tsang
- C. Bruce Bradley
- Richard N. Kammer
- Richard Harlen Owens
- L. Jason Sowder
- Daniel M. Warren
- William Joseph Mallo
- Oh Sung Kwon
- Murray F.E. Sherwin
- Michael R. Platt
- David W. Hubbard
- Jarmo Koskinen
- Ms. Irene Roberson
- David W. Feder
- Dan M. Erickson
- Scott D. Isaacson
- Mr. Nicole Parent
- William E. Frank
- Francois Denis
- Donald R. Edwards
- John Tenkula
- Edward H. Bone
- Edward P. Watkins
- Charles R. Erickson
- Tony M. Palmer
- Ron Cumlander
- Peter J. Sifferlen
- Bart A. Riddle
- Wilber H. Rainey, Jr.
- Magnus Severin
- Ernest C. Sampson
- Thomas P. Barnett
- Henry Moore
- George H. Shahbazian
- Gary T. Whitehead
- Peter K. Anderson
- John E. O’Dell
- Ms. Eva Nelle Dice
- James E. Mitchem
- Vincent Laliberte
- Dave Barr
- Dennis L. Pesek
- Brian Emil Spranger

If any of you know any of these folks, urge them to renew their PUPID memberships.

2002 New PUPID Members for December

- C. Ross McDonald
- Charles J. Hardy
- Donald Edward Taylor
- James C. Batchelor, Jr.
- George R. Jacobs
- I. Blassberg
- Bill Drake
- Ms. Irene Roberson
- David R. Feder
- Dan M. Erickson
- Scott Eckerle
- Michael Tafler
- Scott Fox
- Ms. Nicole Parent
- Francois Denis
- Donald R. Edwards
- Otto Stier
- Dr. Serapio Byekwaso
- Miguel A. Chavez
- Mark A. Flag
- Stephen Orton
- Edward H. Bone
- Edward P. Watkins
- Robert Stanton
- Robert J. Plankey
- Dr. Stanley O. Santos
- Jerry C. Daiker
- Gunnar Wennerberg
- Bill Drake
- Metro J. Skyrpan

Come On Back!

If any of you know any of these folks, urge them to renew their PUPID memberships.

- Scott D. Martel
- Rudra Prasad Kotamraju
- Frederick B. Wagner, III
- Ronald J. Goetchius
- Jacobus P. Van Der Meer
- Brian Ingalls
- Scott Eckerle
- Michael Tafler
- Scott Fox
- Ms. Nicole Parent
- Francois Denis
- Donald R. Edwards
- Otto Stier
- Dr. Serapio Byekwaso
- Miguel A. Chavez
- Mark A. Flag
- Stephen Orton
- Edward H. Bone
- Edward P. Watkins
- Scott B. Hubbell
- Cody E. Kasten
- James L. Hollingsworth
- Raymond Edwards
- Raymond P. Stevens, PE
- Donald T. Frierson, Jr.
- Steven R. Wickesberg
- Robert Linkous
- Julius Mendoza
- William E. Frank
- Gary N. McCullough
- E. Kal Pettitari
- David A. Scott
- Wayne E. Shimantis
- Todd J. Stapleman
- David R. Leger
- Daniel R. Burk
- Joseph J. Wagszlis

If any of you know any of these folks, urge them to renew their PUPID memberships.
SAFETY FACTOR: THE MOST IMPORTANT TUNING PARAMETER
by John Gerry, P.E. john.gerry@expertune.com

You know there is a tradeoff between fast tuning and the process going oscillatory. The Safety Factor is the one tuning parameter that directly adjusts this tradeoff. You want the fastest response possible, but without going wild, oscillatory or unstable.

Fastest Tuning Removes Upsets
Using the very fastest tuning, the feedback control loop will reduce or eliminate the effects of disturbances as quickly as possible. As shown in the graph, the optimal or fastest tuning minimizes the area between the process variable and the setpoint when an upset occurs. This area is shown in blue on the graph. If the process dynamics are linear, and don't change, then optimal tuning is great and we don't need a safety factor.

Fastest Tuning is not Robust
The problem with optimal tuning is that the loop is not very robust: It is very sensitive to relatively small changes in process dynamics. So, if your process interacts with other loops, or may change some, optimal tuning can be overly sensitive possibly causing the loop to oscillate or worse yet, go unstable. Take a look at the robustness plot for this optimally tuned loop. The stability line is inside our blue safety margin box and the loop can only tolerate a small amount of gain or dead time change. Detailed explanation of robustness plots and how to use them are the subject of another presentation "Robustness Plots - The Other Side of the PID Tuning Story" available from the articles page at ExperTune.com.

What is the Safety Factor
The safety factor is the amount that you back off from the optimal, fastest settings. Doubling the safety factor will roughly double the robustness of the loop and at the same time decrease the performance by roughly a factor of 2. Changing the safety factor may change one or all of the tuning parameters in the controller (Depending on the process type and the controller structure). The safety factor lets you adjust with one value, the tradeoff between tight tuning and sensitivity to process changes.

In the above graphs, the blue lines are the response and robustness plots using a safety factor of 2. The time response is now less oscillatory and slower responding. The robustness plot shows the stability has increased. We can absorb a larger change in process dynamics than before.

The red line is with no safety factor, i.e. a safety factor of one or the fastest response. Overlaying the graphs this way makes it very easy to compare them. There is always a trade-off of fast tuning vs. sensitivity to process changes. The safety factor is the one direct adjustment of this trade-off.
Above is a family of time responses and corresponding robustness plots. With each successive increase in safety factor, you can see
the time response gets slower and the control loop becomes more robust.
We suggest starting with a safety factor of 2.5. If you feel the data collected for analysis is good and the process is mostly unchanging
then use a smaller safety factor. If you are tuning loops on Friday afternoon, you may want a larger safety factor!

How to choose the Safety Factor
Choose your safety factor based on several items:
1. 2.5 is a good starting place and appropriate for many processes.
   (This is the default in ExperTune's PID Tuner)
2. How comfortable are you with the data collected for tuning? If the
data you collected is rated as good or better, the condition for
smaller safety factor is possible. You can tell this by looking at
either the PID grid or hovering the mouse over the Analysis
button in the ExperTune PID Tuner.
3. Do you think the process dynamics will change? If the process
ill-behaved then lean towards a larger safety factor.
4. Finally, look at comparison simulations of both time response
   and robustness plots. Simply click the analysis button in
   ExperTune's PID Tuner to see both of these plots.

Conclusions
You can use the safety factor as the one and only tuning parameter. It is the value that directly lets you set the tradeoff between fast
response and stability or sensitivity to process changes.
The ExperTune Tuner lets you adjust the safety factor and quickly compare the time response and robustness plots.
Go to http://www.expertune.com/r2.asp?f=ISAspeake&l=Jan 03&l=present.asp?name=Safety to see the complete presentation in more
detail as a web-cast.
**Weyerhaeuser Names Richard E. Hanson, Chief Operating Officer; Promotes Susan M. Mersereau to Senior Vice President**

Feb 14, 2003 - Business Wire  
**Author(s): Business Editors And High-Tech Writers**

FEDERAL WAY, Wash.-- Weyerhaeuser Company (NYSE:WY) today announced that the company's board of directors has elected Richard E. Hanson to the position of executive vice president and chief operating officer (COO), and Susan M. Mersereau to senior vice president, Information Technology and chief information officer (CIO).

Both positions report directly to Steven R. Rogel, chairman, president and chief executive officer, and are effective immediately. Hanson, who has served as executive vice president, Timberlands and International, since February 2002, will continue in that role until a successor is named. During his 32-year career with Weyerhaeuser, Hanson has held numerous key operational positions in the Timberlands, Wood Products, and Pulp, Paper and Packaging organizations. He also served as the integration team leader following the acquisition of Willamette Industries.

Mersereau had been named vice president, Information Technology and CIO on Jan. 8. She joined Weyerhaeuser in 1980 as a program manager and held various information system management positions before assuming the position of vice president, Weyerhaeuser Information Systems, in 1988. Since then, Mersereau has held numerous leadership positions in Business Services and Aviation and in Containerboard Packaging and Recycling before assuming her current position.

"Although I will continue to work closely with all members of our senior management team, having Rich serve as COO will allow me to spend more time focusing on future growth strategies, resolution of critical external issues, enhancing customer relations and developing future company leaders," Rogel said. "Elevating Susan's position to the senior management team demonstrates the strategic importance information technology will play in Weyerhaeuser's continued success."

Hanson will oversee Weyerhaeuser's timberland and manufacturing operations, research and development activities, and procurement and transportation functions. Reporting to Hanson will be:

- William R. Corbin, executive vice president, Wood Products;
- James R. Keller, senior vice president, Containerboard Packaging and Recycling;
- Michael R. Onustock, senior vice president, Pulp and White Paper;
- Marvin D. Cooper, senior vice president, Pulp, Paper and Containerboard Manufacturing and Engineering;
- George H. Weyerhaeuser, Jr., senior vice president, Research and Development, Procurement and Transportation;
- A senior vice president, Timberlands, to be named;
- Gary W. Drobnacl, president, Weyerhaeuser Forestlands International;
- Rory Kirwan, vice president, European Composites; and
- Michael K. Thompson, president, Weyerhaeuser Asia, Ltd.

In addition to Hanson and Mersereau, those reporting directly to Rogel include:

- William C. Stivers, executive vice president and chief financial officer;
- C. William Gaynor, senior vice president, Canada;
- Steven R. Hill, senior vice president, Human Resources;
- Mack L. Hogans, senior vice president, Corporate Affairs;
- Sandy D. McDade, when he becomes senior vice president, Canada, on March 3;
- Patricia M. Bedient, vice president, Strategic Planning; and
- Robert A. Dowdy, vice president and general counsel;
- Dan S. Fulton, president, Weyerhaeuser Real Estate Company.

Weyerhaeuser Company, one of the world's largest integrated forest products companies, was incorporated in 1900. In 2002, sales were $18.5 billion. It has offices or operations in 18 countries, with customers worldwide. Weyerhaeuser is principally engaged in the growing and harvesting of timber; the manufacture, distribution and sale of forest products; and real estate construction, development and related activities. Additional information about Weyerhaeuser's businesses, products and practices is available at [http://www.weyerhaeuser.com](http://www.weyerhaeuser.com).
Sappi Fine Paper Chooses Sterling Commerce's Gentran Integration Suite to Globalize Order Management Systems

Feb 10, 2003 - Business Wire
Author(s): Business Editors

COLUMBUS, Ohio--(BUSINESS WIRE)--Feb. 10, 2003--Customer Cites Sterling Commerce as the 'Perfect Partner' for Integration Project
Sterling Commerce (NYSE:SBC) announced today that Sappi Fine Paper, a leading producer of coated paper, has chosen Gentran Integration Suite to integrate its North American Order Management System with its global Warehouse Management System. Currently, Sappi's North American operations use internally developed order management and distribution software based on mainframe technology, while the global warehouse management system runs on client server technology. Gentran Integration Suite offers Sappi a cost-effective and efficient way to integrate these two systems together on a real time basis leveraging Sappi's existing infrastructure. Gentran Integration Suite's integration broker is at the core of Sappi's EAI project, providing both the connectivity and intelligent routing between Sappi's two systems. By integrating the systems, Sappi expects a significant reduction in storage costs at its North American regional distribution centers.

"We recognize it is going to be a sizable challenge to bring North America on board with Sappi's global warehouse management system, particularly in light of the condensed timeframe," said Rick Dugas, senior IT manager of Commercial Systems for Sappi Fine Paper North America. "We need a reliable partner that understands our business and the systems we are currently using, while offering a competitive, cost-effective solution. Because we've relied on Sterling Commerce's Gentran translation software and network services for more than 10 years, and Gentran Integration Suite was the easiest and least-invasive option for this project, we saw Sterling Commerce as the perfect partner to turn to."

Gentran Integration Suite is a modular software suite designed to provide businesses with a scalable, strategic integration platform. Users can deploy its state-of-the-art integration broker architecture tactically for both internal and external business systems integration while incrementally adding expanded capabilities as needed over time.

"Our customers continue to produce incredible business results - cutting costs, increasing efficiency - as they turn to integration as a long-term strategy to alleviate IT headaches and establish a solid foundation for more productive, responsive business processes," said Sam Starr, president and chief operating officer, Sterling Commerce. "Our integration solutions allow a company to leverage its existing technology investments and improve the way it does business overall."

Gentran Integration Suite is the centerpiece of Sterling Commerce's integration product portfolio. The company matches its business integration product capabilities with its Sterling Information Broker network services to provide enterprises with complete capabilities to strategically and modularly implement integration solutions designed to maximize business performance.

Built in the J2EE (Java 2 Enterprise Edition) architecture, Gentran Integration Suite gives organizations unmatched flexibility to incorporate existing and future interoperability technology standards, such as EDI, Web Services, ebXML, BPML and emerging XML-based B2B standards. The integration platform is designed to support a wide range of application and technology adapters, including support for popular packages such as SAP, PeopleSoft, i2, and Siebel, and messaging middleware such as IBM MQSeries, Oracle AQ, and the Java Messaging Service (JMS). In addition, customers can also connect to proprietary legacy systems, by building their own adapters via a software development kit.

For more information about Gentran Integration Suite, call 800/873-7945 and ask for code S-03NR or visit www.sterlingcommerce.com.

About Sappi Fine Paper North America
Sappi Fine Paper North America is the pre-eminent manufacturer of coated fine paper in North America. The company is headquartered in Boston, with four paper mills located in Skowhegan and Westbrook, Maine; Muskegon, Michigan; and Cloquet, Minnesota. Sappi Fine Paper North America is a division of the global company, Sappi Limited, the world's largest producer of coated fine paper.

About Sterling Commerce and SBC
Sterling Commerce, a wholly owned subsidiary of SBC Communications Inc. (NYSE:SBC) is one of the world's largest providers of business integration solutions. For Global 5000 companies and their customers, suppliers and partners, Sterling Commerce software and services help maximize business performance and improve business metrics through integration of applications, external partner systems and people. With more than 25 years of experience serving more than 30,000 customers in a vast range of industries, Sterling Commerce is a recognized pioneer in electronic commerce through its longstanding expertise in EDI. Today, as customers explore new ways to improve business performance via the Internet, Sterling Commerce continues to innovate its software and services to further the global adoption of e-commerce while offering its customers strategic solutions that leverage existing technology. For more information, visit www.sterlingcommerce.com.

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PPG, Entergy Start up Louisiana Cogeneration Plant

Feb 11, 2003 - Business Wire

LAKE CHARLES, La.--(BUSINESS WIRE)--Feb. 11, 2003--RS Cogen LLC, a cogeneration power plant that is a joint venture of PPG Industries and Entergy Corp., has begun commercial operations here.

Half of the electrical output generated by the 425-megawatt natural gas-fired, combined-cycle power plant is used by PPG for producing chlorine and caustic soda at its Lake Charles complex. The balance produces electricity marketed to the wholesale power market by Entergy-Koch Trading, L.P.

Built at a cost of $242 million, the RS Cogen plant also provides up to 425,000 pounds/hour of process steam to PPG's Lake Charles complex, and up to 600,000 pounds/hour of process steam that is being sold to Lyondell Chemical Co. for its nearby facility.

"With RS Cogen providing power to our Lake Charles complex by 100 percent combined-cycle cogeneration, we will make the most efficient use of fuel available," said David B. Church, PPG vice president, chlor-alkali and derivatives. "This will enable us to reduce costs and strengthen the position of our Lake Charles facility as one of the most cost-effective chlorine plants in North America."

The RS Cogen plant, which is operated by PPG, uses two Siemens Westinghouse 501FD advanced-technology natural gas-fired turbines and an Alstom steam turbine to generate power. The technology used by RS Cogen is efficient, while also producing lower levels of environmental emissions than other fossil fuel power plant technologies.

The new cogeneration plant displaces older PPG on-site power generation facilities consisting of three boilers and two steam turbine generators. Church said the steam turbine generators will be placed on standby.

Entergy Corp., a major integrated energy company, owns, manages or invests in power plants generating more than 30,000 megawatts of electricity and serves about 2.6 million customers in portions of Arkansas, Louisiana, Mississippi and Texas. Through Entergy-Koch, L.P., it is also a leading provider of wholesale energy marketing and trading services, as well as an operator of natural gas pipeline and storage facilities.

Pittsburgh-based PPG is a world leader in production of chlorine, caustic soda and related chemicals for use in chemical manufacturing, pulp and paper production, water treatment, plastics production and many other products. The company also produces specialty chemicals as well as coatings, glass and fiber glass for global markets. PPG had sales of $8.1 billion in 2002.

Level of proof argued in coho clearcut injunction

Feb 13, 2003 Columbian (Vancouver, Wash.) Page C7 (Copyright 2003)

PORTLAND -- Environmental groups seeking an injunction to limit clearcut logging and landslide risks on private timberland in the Coast Range wrapped up their arguments before a federal judge on Wednesday, claiming they need only to show the potential for harm to threatened coho salmon and not actual dead fish.

"There's been a suggestion that we need a dead fish," said Patti Goldman, an attorney representing the Pacific Rivers Council and other conservation groups. "But that's not the case."

U.S. District Judge Anna Brown, however, questioned whether evidence of potential harm to fish would be enough.

"We don't have a direct piece of evidence linking a specific clearcut site producing a specific slide," the judge said. "There isn't one piece of direct evidence."

The environmentalists have asked Brown to issue a preliminary injunction against the state forester to prevent approval of any clearcuts near coho salmon streams.

Goldman said scientific evidence, studies and field data can be taken together to show a pattern of potential harm to coho salmon that would violate the Endangered Species Act. Oregon coastal coho are listed as threatened under the federal act.

But attorneys for the state and the timber industry say there must be stronger proof that fish are being killed or injured before a federal court can intervene in state forestry regulation.
ALARM SYSTEM PERFORMANCE MONITORING

By TIM MONTGOMERY
CHEVRON RESEARCH AND TECHNOLOGY COMPANY (From Honeywell’s users group)

Introduction
“How would you know?” That was the question that Dr. W. Edwards Deming kept putting to his audience back in the early 90’s when giving his famous quality seminars. It was the question that my colleagues who had attended one of these seminars came back reciting as a mantra for continuous improvement. And answering that question through careful analysis of process data was the beginning of attaining the “Profound Knowledge” that Dr. Deming said led to superior quality that, in turn, helped create devoted customers.

“How would you know” that your alarm system was operating effectively? That it would provide the operator the necessary information to deal with unusual or abnormal situations and not be prone to overload the operator just when the situation called for focus and clarity.

Fortunately, the Engineering Equipment and Materials Users Association (EEMUA) of the United Kingdom (UK), has recently published an alarm systems guide that can help control system professionals answer the question, “How would we know... that our alarm systems are performing effectively?”

This paper will discuss a number of the alarm system performance metrics recommended in the EEMUA alarm systems guide. Several examples will be discussed including some used within Chevron. Other alarm system performance considerations will also be reviewed as will potential qualitative benefits from an alarm system performance monitoring program.

EEMUA Alarm Systems Guide
Most of the information in this paper comes from the Engineering Equipment and Materials Users Association (EEMUA) Publication No. 191: “Alarm Systems; A Guide to Design, Management and Procurement” (1999). This guide includes information on alarm system design, purchasing and implementation in addition to information on alarm system performance monitoring.

The guide was developed by EEMUA with the input of users based in the UK from BASF, BP Amoco, Dow Corning, Esso/Exxon, ICI, Mobil and Shell among others. The guide was written under contract by Bransby Automation, Ltd. The alarm systems guide was co-sponsored by the U.S.-based Abnormal Situation Management™ (ASM™) Consortium and includes considerable input provided by ASM Consortium “User Members” including BP Amoco, Celanese, Chevron, Equilon, Exxon and Nova Chemicals.

Anyone who is involved with alarm systems should have a copy of this guide. The guide costs around US$125 and can be ordered by fax by accessing the EEMUA publications web page at http://www.eemua.co.uk/publications/.

Configured Alarms
Knowing what alarms are configured is the first step towards understanding your alarm system. Others might want to get quickly to more dynamic data. But since you are going to have to know about the configuration eventually, it might as well be early. Looking at the configured alarms will give you a very good idea of the total job scope ahead of you. It will also give you a benchmark to measure against as improvement efforts progress.

The EEMUA guide recommends that the total number of configured alarms be related to three system components: 1.) control actuators (typically indicated by the analog outputs that drive the control valves and other control devices); 2.) analog inputs; and 3.) digital inputs. Historically, people have just used control valves as the parameter for normalizing the number of alarms, but the technique for including analog and digital inputs facilitates the comparison of configured alarms between plants with vastly different point type mixes. The following targets are suggested:

Alarms Configured per Operating Position
• per controller: < 6; preferably < 4
The EEMUA guide recommends a hierarchical prioritization scheme with fewer alarms at each progressively higher level of priority. A target priority distribution is recommended as follows:

* The 5% target includes no more than 20 critical priority alarms.

Quoting the EEMUA guide, “[these] numbers… should be taken as approximate indicators of effective discrimination between priorities rather than exact targets.”

**Worst Actors**

Worst actors typically result from improper settings and/or equipment problems. The most common worst actor is the chattering alarm that goes in and out of alarm hundreds of time per hour because the alarm deadband is not set outside the measurement’s normal range of variation. Targeting operating points too close to alarm trips settings is another common cause of worst actors.

Monitoring and addressing worst actors is probably the most impactful action that can be taken to reduce alarming. In fact, the EEMUA Guide recommends worst actor monitoring coupled with alarm flood analysis as the primary activities for alarm system improvement when resources are limited to improve an existing alarm system.

The EEMUA guide includes a typical Pareto chart of tags in alarm as shown in Figure 1. In this example, the top 12 worst acting alarms accounted for over 50% of the alarms recorded for 4 hours following an upset. In many cases, the top 10 worst actors account for as much as 60-80% of the recorded alarms.

**Peak Alarm Rate**

Peak alarm rate is obviously the most significant parameter for indicating potential overloads on the operator. The EEMUA guide makes the following observations:

- Under 10, should be manageable
- 20 to 100, hard to cope with
- More than 100, definitely excessive

The example shown in Figure 2 shows a typical method for analyzing peak rate by plotting incoming alarms per minute over time. Unfortunately, this data is fairly typical for many of our industries. The example shows that following a trip in the plant, the operator’s ability to manage his plant was significantly taxed soon after the indicated upset (>100 alarms/10 min alarm rate between minute 5 and minute 25). I am sure that there are many of us who can think of cases from our own experience where this degree of loading might actually look trivial.

Most companies are just now looking at their operations from a peak alarm loading viewpoint and they are formulating targets under which to operate. The EEMUA guide indicates 10 alarms/10 minutes following a major upset would be a safe target and that a rate of <20 alarms/10 minutes would likely be safe. These are fairly ambitious targets when one considers that a Health and Safety Executive (UK) survey of alarm rates indicated that the average alarm rate measured was 5 alarms/10 minutes.

One can easily get caught up in arguing what a reasonable number should be, and there are many factors that would influence how safe a given peak alarm rate would be. These factors would include:

- what the priority distribution of the incoming alarms were (10 emergency priority alarms are much more significant than 100 low priority alarms);
- whether the operator can get assistance in processing alarms during peak load (Some would argue that the alarm processing rate can be tripled by bringing in another operator to assist with the alarm processing);
• what the safety risks are associated with the plant (Is the risk mainly with major equipment damage or are personnel endangered?)
• what types of automated systems are in place to take the plant to a safe state should the operator be unable to correct the situation.

For most companies starting out in looking at alarm loading, it is less important to target a specific numerical objective than it is to start to understand when high alarm rates occur and what the operator does in response. Quoting from the EEMUA guide in reference to peak alarm rate: “Whilst the above metrics provide an indication of usability of the alarm system, in themselves they do nothing to improve that performance.” The peak alarm rate metric has its highest value as a (hopefully) near-miss situation indicator that will help plants look more closely at their operations and work to prevent high-load situations in the future and even avoid the initiating events altogether.

**Average Alarm Rate**

The peak alarm rate is a valuable tool for understanding some of the most important opportunities for improvement within a given plant. It is less valuable for indicating chronic problems or slowly developing problems with the alarm system. The average (steady operation) alarm rate is a much better metric to indicate these kind of problems. The average alarm rate is also more useful (and easier to develop) for comparing results between plants.

The EEMUA guide lists the following guidelines to assess average alarm rate:

**Long Term Average Alarm Rate Acceptability for Steady Operation**

- 1 every 10 min Very likely to be acceptable
- 1 every 5 min Manageable
- 1 every 2 min Likely to be over-demanding
- > 1 every min Very likely to be unacceptable

As mentioned in the peak alarm rate discussion, the UK’s Health and Safety Executive (HSE) found that the average alarm rate for the sites they surveyed was one every 2 minutes indicating that most of these plants had over-demanding alarm systems or worse.

An interesting thing to consider in regard to the HSE’s survey results is that these operators are apparently spending much of their time responding to alarms. They probably have little time left to analyze the operation of their processes and equipment. And they probably have even less time to make moves to optimize the operation. This kind of situation makes it very harder to anticipate to potential problems. By reducing the average alarm rate, we can make more time available to the operator to do higher value activities.

**System Integrity Metrics**

These metrics relate more to the maintenance aspects of the alarm system. Operating practices greatly influence their impact.

- Number of standing alarms – alarms that are active at a given time. Standing alarms are important to consider for their impact as visual noise that distracts the operator from seeing what is really going on. They are often caused by out-of-service equipment. Tools are just now emerging to help manage standing alarms effectively. The EEMUA guide recommends keeping standing alarms to 10 or less.
- Disabled and Inhibited Alarm Monitoring – usually indicates problems with sensors or other instrumentation and equipment. A well-designed and well-maintained alarm system operating at normal conditions has little need for disabled and inhibited alarms. However, exceptions occur that make disabling and inhibiting necessary. Standing alarms are sometimes disabled to lessen their distraction potential. Alarms are typically inhibited for out-of-service equipment and for problems that can’t be addressed in a short time frame. Monitoring disabled and inhibited alarms is important because it often turns up configured alarms that are unexpectedly and undesirably inactive.
- BADPV Monitoring – indicates a questionable measurement. Without a good measurement, the ability to detect an alarm condition is lost. While BADPV’s for sensors used in control loops and used to drive high and emergency priority alarms are typically alarmed within Chevron, we need to monitor BADPV status on those measurements that drive low
priority alarms. An undetected BADPV on any measurement going to the operator is a latent fault that can have
significant consequences.

• Database Validation – validates that the alarm system is operating as it was designed. Within Chevron we are mostly
interested in knowing whether differences between the design and the actual operating system exist (see Figure 3).
Some companies go even further and automatically re-institute the design database on a pre-defined frequency. This
metric is also valuable for detecting glitches in the alarm system management of change process.

Other Performance Considerations
While more difficult and/or complex to measure, there are a number of other factors contributing to alarm system
performance that merit consideration. I list them here more as a result of my Chevron experience than what is
recommended by the EEMUA guide. They are:

• Operating Display Design – How does the display design support the operator in identifying, interpreting and
managing the alarm system? Does it reduce the risk for operator error that could lead to an event that would trigger an
alarm condition? Is the system responsive enough to handle all situations that can be imagined? (And, if it is not, are
there supporting systems in place to handle these situations?)
• Alarm System Documentation – Is the documentation up to date and readily available to the operator? Does the
format and style match the operator’s informational needs?
• Sensor Testing – Is there a defined program for sensor testing beyond that suggested by ISA S91 for critical
instrumentation? Is this testing done at a frequency commensurate with the demonstrated reliability of each sensor
and the potential risk associated with a failure of that sensor?
• Alarm Journal Archival – Is frequent archiving performed to ensure that no alarm information is lost? Has this been
evaluated for all anticipated alarm loads including a major fire? (See Figure 4 for what could happen as a result of
inadequate journal archiving. Several Chevron sites schedule archive updates every 15 minutes to ensure that alarm
journals are not over-written.)

A Warning
Metrics can be powerful drivers to change or influence behaviors. That is the primary reason for using metrics.
However, metrics can drive undesired behaviors and results. Two examples come to mind:
• Time to acknowledge an alarm
• Number of disabled alarms

The justification for the former metric was to encourage prompt operator attention to incoming alarms. However, little
thought was given to how single-minded pursuit of this metric might lead to premature acknowledgement of alarms
such that the operator would not notice or would be more apt to forget about alarms that had come in.

Cases involving the latter metric have actually led to sites inhibiting alarms on points that they would normally disable.
This has the net effect of totally hiding the alarm state from the operator. Information about the problem point is not
collected and progress towards improvement is slowed. The EEMUA guide recommends keeping disabled alarms to
less than 30. I believe it is better to monitor disabled alarms regularly (daily) and maintain a log that is reviewed by
plant management describing why each point is disabled and under what conditions re-enabling the alarm is
appropriate.

The over-riding goal of the alarm system – to prevent incidents – must not be compromised by short-sighted metrics.
One can imagine that an unceasing drive to continuously reduce the number of reported alarms could eventually lead
to a situation where an operator is not warned of a significant event and serious consequences occur as a result.

Summary and Benefits
Alarm system performance monitoring is important to maximize the effectiveness of your alarm system. While this
monitoring will not ensure that the alarm system will be totally effective, it is a powerful process for detecting when the
alarm system will likely be less effective.

Tools are now available to assist the control system professional in this monitoring. As the EEMUA alarm system guide
gets wider distribution, many of these tools will be more tailored to address the EEMUA metrics. Besides the metrics
discussed above in this paper, a number of other EEMUA performance monitoring techniques are worthy of
consideration. Most notable in this regard are the operator and usefulness questionnaires included in the guide as
Appendices 12 and 13. These techniques appear more focussed on alarm system usability and will have more value as we eliminate many of the problems identified with the techniques described in this paper.

There will be a lot of learning associated with alarm system performance monitoring and this will take some time. This is the “Profound Knowledge” promised by Dr. Deming. While we are starting out to understand and reduce alarm loading, we will eventually be improving our operations in a number of ways. Key parameter relationships will be better defined. Operating goals will be better communicated. Procedures will be improved. People will be better trained. So not only will our sites be safer, they should be more profitable as well.

Acknowledgements
I would like to acknowledge the excellent work of the EEMUA Alarm Systems Guide sub-committee. Dr. Matthew Bransby’s efforts in integrating the various contributions on this subject into such a compelling document are particularly noteworthy.

I would also like to acknowledge the various Chevron alarm management advocates representing Chevron’s six U.S.-based refineries and a number of chemical plants worldwide as well as those from Chevron Research and Technology Company in helping to develop my interest and knowledge on this subject.

Finally, I would like to acknowledge my Abnormal Situation Management (ASM) Consortium colleagues for their energy and dedication to sharing experiences and improving knowledge on the topic of alarm management. Ian Nimmo, formerly Program Director of the ASM Consortium, deserves special mention for originally making the connection with the EEMUA Alarm Systems Guide effort and for convincing the consortium’s membership that contributing both monetarily and intellectually to the EEMUA project would bring commensurate value.

References

![Figure 1 – Illustration of Worst Actor Pareto Chart](Reference: EEMUA Alarm Systems Guide; Publication No. 191 (1999))

![Figure 2 – Illustration of Peak Alarm Rate Analysis](Reference: EEMUA Alarm Systems Guide; Publication No. 191 (1999))

![Figure 3 – Exception Report from Chevron’s database validation tool](Reference: EEMUA Alarm Systems Guide; Publication No. 191 (1999))

![Figure 4 – What happens when the Alarm Journal Archive is over-written](Reference: EEMUA Alarm Systems Guide; Publication No. 191 (1999) –modified)
**Letters To The Editor**

Robert F. Sikora, P. Eng. rsikora@brockssolutions.com writes:

I finally got around to reading the Fall issue of the Logger and found that MY name was amongst those whose memberships had supposedly lapsed. I have been a member for many years now and have renewed again. Anyone reading the newsletter might think I have dropped out of PUPID. I understand the need to encourage people to maintain their professional memberships, however, I suggest that you perhaps wait a few months after memberships have lapsed before posting a request for them to be contacted to renew - there may be some glitches with the systems at ISA headquarters. There also appeared to be an unusually high number of lapsed members which leads me to believe that this was a systems problem.

Personally, I think it is better to wait until people’s memberships have definitely lapsed, since, as you indicate, there is a 1/3 chance of having your name appear as a lapsed member. Ask yourself the question: If Brad Carlsberg appeared in the list of lapsed members, would you manually remove your name from prior to publication? If you answer Yes to that, then the answer is obvious (to me at least): Do not mention people who ‘might’ be in the process of being renewed.

Other than this complaint, keep up the good work with the division. It seems more useful in recent years.

**Director’s Note:** I apologize for mentioning your name as having lapsed (and for any possible embarrassment it might have caused). Don’t you think that it would be better to remind people SOONER rather than LATER about lapsed membership (it saves a lot of reinstatement issues); and I think that since we ONLY put out the newsletter four times a year (one newsletter every three months), it’s a “crap shoot” (1/3 chance) if a persons renew month coincides with the newsletter release month otherwise the announcement is already 2 months old.

Send your comments on this newsletter to the ISA PUPID Technical Discussion Forum & “get something started”!

You can reach the site at http://216.27.72.194/shellcgi/lyris.pl?enter=pupid&text_mode=0&lang=english or by going to the PUPID or the main ISA websites and looking for the “ISA Technical Divisions”

**Quickies**

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Anybody (not necessarily an ISA or PUPID member) can subscribe to the PUPID Pulp & Paper Technical Discussion Forum. To subscribe, go to the PUPID homepage at http://www.isa.org/~pupid/ and select “Pulp & Paper Technical Discussion Forum” in the pick box, click “Go”, and enter your email address and a password.

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**ISA PUPID Calendar**

Get a quick overview of ISA PUPID events for 2002 by going to the Calendar at: http://www.isa.org/~pupid/2002_PUPID_Calendar.htm
**CANADA CORNER**

An interesting development has been the early settlement of labour contracts. The majority of pulp mills in the province of B.C. are unionized. The practice has been to target a single mill for negotiations which then sets the pattern for the rest of the mills. One company reached a new 5 year collective agreement months before their existing contract expired affording them stability with their operations and their customers. This has spread around the province with most contracts now settled. B.C. mills and its customers should enjoy a stable, uninterrupted climate through to May 2008 when the next contracts expire.

Brian Plamondon  
Production Shift Superintendent  
Celgar Pulp Company

**Review for 2002: Shipments up, earnings decline**

The Canadian pulp and paper industry increased its shipment by 2.3% in 2003, to reach 30.5 million tonnes. Although volumes were up, the industry's financial performance weakened as a result of weaker pricing.

Based on preliminary data, it is estimated that the industry earned $475 million on its pulp and paper operations, compared to net earnings of $1.4 billion in 2001.

Sales in Canada rose 3%, reflecting the relatively strong performance of the Canadian economy. Shipments to the United States increased 2.5%, while shipments offshore advanced 1.7% due almost entirely to increased deliveries of market pulp to China and other Asian markets.

**EUROPEAN CORNER**

**NBSK in Europe.** Although no clear demand-pull can be seen in paper sector, the pulp market is tight. Low inventories and supply losses, mostly seen in the U.S. but also in other markets including Canada and Indonesia, have led to attempts to restock in anticipation of the price increases. Purchasing needs by integrated North American producers have added to the tightness. Several suppliers have joined the ranks of those who are already attempting a new round of increases effective March 1. NBSKP spot price in Asia has reached $450 USD net. FOEX's pulp indexes confirm the clear upward momentum.

For NBSKP PIX benchmark in Europe, quotes were now within the range of $460-480 USD/ton with $480 already in clear majority. Index jumped up by $20.40, or 4.5%, to $477.04 USD/ton.

**CENTRAL & SOUTH AMERICAN CORNER**

Contracts worth $5.3 million (US) have been awarded by Celulosa Arauco y Constitucion S.A. to Emerson Process Management, an Emerson business (NYSE: EMR), for process automation systems, equipment, and engineering services for what will be one of the world's largest pulp mills. Already under construction near the city of Valdivia, Chile, the new mill will use a state-of-the-art process control network with Emerson's PlantWeb digital plant architecture. The PlantWeb architecture will include more than 3,500 FOUNDATION fieldbus instruments and the DeltaV™ control system, making it the largest such installation of the fieldbus technology in the pulp and paper industry.

Located 500 miles south of Santiago, the new mill will produce 600,000 tons of bleached softwood and hardwood market pulp per year from pine and eucalyptus logs beginning in late 2004.

Metso Paper opened a service technology center in Brazil

Metso Paper inaugurated a new service technology center in Brazil on February 11th, 2003. The center operates at Metso Corporation's joint premises in Sorocaba, Sao Paulo, and serves the needs of the pulp and paper industry in Brazil and in other Latin American countries.

The scope of services offered by the Sorocaba center is from spare parts and roll services to maintenance services. In addition to supplying comprehensive process improvement projects, the center also provides local support for new installations and rebuilds in Latin America. The center is part of the Metso Future Care concept whose goal is to maintain the competitiveness of customer processes throughout their lifecycles.

The Sorocaba center has a modern roll service workshop with 3800 m2 floor space. It is capable of servicing the largest paper machine rolls in use. It can manage growing future demands of the industry with e.g a crane lifting capacity of 120 tons. The center also includes facilities for parts logistics, testing and customer training. With the new center Metso Paper, one of the largest suppliers to the pulp and paper industry, wants to clearly demonstrate its dedication toward its customers in Latin America.

The considerable investments being made in infrastructure development in Brazil offer good growth opportunities for Metso. Recently, the country's pulp and paper industry has not only been modernizing, but also increasing, its production capacity.

**FAR EAST CORNER**

**Sun Paper building 4th machine**

Sun Paper of China is building its 4th paper machine. The machine, Yanzhou mill PM 19, will be started up in September 2004, and will produce mainly offset paper. The machine is being installed at the Yanzhou mill, in the eastern province of Shandong. The machine features a SymFlo headbox, a SymFormer MB forming section, a SymPress press section, a SymRun dryer section, a ValSizer surface sizer, a 2-nip OptiSoft calender, and a ValReel.
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