Well; it’s already the third week of August, where has the summer gone?

I really want to urge some of you to help give something back to the Pulp & Paper Division. Someone needs to “step up to the plate”. I enjoy putting out this newsletter (and I hope some of you enjoy reading it), BUT I have been the Director for too long, we need some new blood. Please give me a call to talk about what you can do for PUPID. As Director, you can get your expenses paid to the ISA Leaders Meeting & Expo each year AND meet the other division leaders and the ISA staff. I haven’t missed on since 1997.

If any of you out there are planning to attend the TAPPI conference, please let me know and consider being the ISA PUPID Conference Liaison so we can get back to partnering with TAPPI for the Spring conference. I did it for 2001 in San Antonio, 2002 in Atlanta, and 2003 in Chicago; but we haven’t partnered with TAPPI since then. ISA PUPID first partnered with TAPPI in 1962; let’s not let this tradition with TAPPI go away!

Speaking of ISA Expos, this years Expo 2007 is just around the corner – less than two months away, the ISA Leaders Meeting will be going on Saturday, Sunday, and Monday, September 29 – October 1 while Expo 2007 will be going on Tuesday, Wednesday, and Thursday, October 2 – 4 at the Reliant Center in Houston.

In fact, ISA Expo 2008 and Expo 2009 will also be in at the Reliant Center in Houston.

PUPID membership is slowly dwindling, it is now at 408 members. How can we get back to the 1996 membership level of around 1900 members?

Well, I’ll sign off now until next time; keep watching the PUPID website for upcoming attractions!
TUNING TIP: OPTIMIZATION: WHERE SHOULD YOU START?

Suggested approach:
1. Put all loops in service
   - Loops in wrong mode
     - Manual rather than automatic
     - Automatic rather than cascade
     - SP Local rather than supervision
   - Loops with configuration problems
   - Loops where an equipment does not work
2. Determine which loops do not perform
   - Oscillations
     - Tuning?
     - Valve?
     - Process?
     - Others?
   - Sticky valve
   - Loop is too fast? Loop is too slow?
   - Valve often at limit
   - Loops where the operator has to intervene often
3. Sustain performance
   - Measure performance
   - Alert or event triggering
     - Economic priority
     - Away from benchmark
   - Root cause analysis
   - Repair

Steps 1-2-3 are easily done with performance supervision software. Step 3 is a must, since you sustain your gains! You do your maintenance based on conditions, not on failures.

Steps 1 and 2 can be done without tools but this is time consuming. Step 3 cannot be easily done without tools. Your maintenance will be reactive, waiting for failures or for operators' complaints.

Contact us: our experts have applied this approach or trained plant personnel to do it successfully, in hundreds of plants!

This tuning tip was from the May 2007 Top Control newsletter at:


Calendar of Events

Get a quick overview of the ISA PUPID events for 2006 by going to the Calendar at: http://www.isa.org/~pupid/2007_PUPID_Calendar.htm

ISA PRESIDENT’S FALL MEETING
HOUSTON, TX
SEPTEMBER 29 - OCTOBER 1, 2007
Come meet your leaders & get involved!

ISA EXPO 2007
RELIANT CENTER, HOUSTON, TX
OCTOBER 2 - 4, 2007

TAPPI ENGINEERING, PULPING AND ENVIRONMENTAL CONFERENCE
HYATT REGENCY JACKSONVILLE RIVERFRONT
JACKSONVILLE, FL
October 21-24,2007
http://www.tappi.org/s_tappi/doc_events.asp?CID=9719&DID=553579

62st APPITA Annual Conference and Exhibition
Energy Events Centre
Rotorua, New Zealand
20 – 23 April, 2008
http://www.APPITA.com

54rd Pulp & Paper Industry Conference 2007
June 22 - 27, 2008
Grand Hyatt
Seattle, WA
http://www.pulppaper.org

TAPPI/PIMA 2008 CONFERENCE: SUSTAINABILITY FOR THE FUTURE
TAPPI PAPERMAKERS – TAPPI COATING & GRAPHIC ARTS - PIMA
INTERNATIONAL
DALLAS, TEXAS, USA
MAY 4-7, 2008

Upcoming ISA Conferences & Exhibitions

<table>
<thead>
<tr>
<th>Year</th>
<th>Date</th>
<th>City, State</th>
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<tbody>
<tr>
<td>2007</td>
<td>October 2 – 4</td>
<td>Houston, Texas</td>
</tr>
<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>
</tr>
<tr>
<td>2010</td>
<td>October 11 – 14</td>
<td>New Orleans, Louisiana</td>
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You can see the online calendar at [http://www.isa.org/~puid/2007_PUPID_Calendar.htm](http://www.isa.org/~puid/2007_PUPID_Calendar.htm)
WELCOME TO THE 10 NEW ISA PULP & PAPER INDUSTRY DIVISION MEMBERS SINCE MAY 2007

WELCOME TO NEW PUPID MEMBERS

Evaldo Sangali
Joao Fraga
David Benjamin Hightower
Charles Judd
Brent Tidd
John L. Arnold
Jean-Bernard Chadrou
Carl Allyn Ekblad
Lyle Herrold
Warren Y. Scott

HERE’S A REMINDER TO THE 61 ISA PULP & PAPER INDUSTRY DIVISION MEMBERS WHO NEED TO RENEW THEIR MEMBERSHIP

Brian Anderson
Bruce E. Ayotte
Michael Barber
Andy Battler
Ersal S. Baydar
Emerson Lee Beach
William Beck
Dwight L. Boettcher
Gerard F. Brady
Frank R. Brooks
Danielle Cadorin
Jerry J. Cannon
Michael S. Cantor
Philip M. Cuberson
Ronald E. Daniel
William R. Dostmann
Jeff Downing
Frank R. Eggleston
Leoncio W. Estevez Reyes
Paul E. Feltz
Michael A. Flaster
Jerry Lee Fontenot
Crispin D. Fredericksen
Rick Guliuzza
Ronald P. Hack
David G. Hobart
R. H. Horton
Michael H. Kay
Mark Kayser
Alok Basanturam Kewat
Abrar Mohammed Khan
Gerald Glenn Lett
Rafael Lopes Venancio
Desmond A. Lowrie
Todd M. Lyden
Mohamad Masudy
John Kevin McKinley
Efrain Mora
Emilio Moralo
Helen Muth
Gene G. Nelson
Michael Pegorari
Kevin N. Persyn
James H. Poe
Andre Luiz Santana Porfirio
James Martin Robbins
Carlos R. Rodriguez
Ricardo Rojas
Ron Ruehlmann
Daniel Lee Sherman
Sandeep Prakash Singh
Mike Stephens
Darcy Tangedal
Ravi K. Theegala
Martin L. Timmons
Daniel M. Warren
John J. Wawrowski
Andrew Weber
Kenneth D. White
Gunter Wise
Timothy P. Yancy

DON’T FORGET TO RENEW!
Is the Lumber Industry Environmentally Friendly?

Global warming, Green house gas reduction. Hardly a day goes by that you don’t hear these terms in the media. What’s that got to do with the Lumber and Timber Industry (LTI)? It has been my experience over the past 30 years that the public’s view of cutting down trees and turning them into lumber is intrinsically bad for the environment. Therefore anyone involved in those industries is also evil.

As stated in a previous article this column is primarily focused on the technologies within the LTI. So why the apparent deviation from that topic? The reason being that it appears to me that the future of this industry and many others within the scope of PUPID are affected by the same biased environmental opinions, which in most cases are distorted at best and those biases are not going away in the near future.

To coin an old axiom “the alternative to getting old isn’t very attractive” in many ways is true of the LTI. Over the past centuries there has been a lot of abuse when it came to cutting down forests. After all, that was one of the motivations for investors who sponsored ventures coming to America. The prospect of abundant forests to convert into lumber in light of the fact that Europe had already exhausted theirs was very appealing in the 1600s. Keep in mind that builders in those past centuries did not have the alternative building products (aluminum, steel, plastics, composites, etc.) that are available to us today. At this point it should be noted that most of these alternative products are produced with non-renewable resources and require the use of fossil fuels to produce them. This is where the LTI becomes a whole lot more attractive.

It is common place to see bumper stickers in LTI regions that read “TREES: America’s Renewable Resource”. Congress established the Forest Service in 1905 to provide quality water and timber for the Nation's benefit. http://www.fs.fed.us/aboutus/meetfs.shtml It is the author’s opinion that if the American people as a whole were responsible with the management of our resources, that would not have been necessary. I fully acknowledge that most of today’s LTI companies are responsible for the management (at least within the U.S.) of the resources within their ownership and control. I believe that it is both for financial purposes as well as their recognition of the fact that the way in which they manage those resources affects the entire planet and those living on it.

This brings me to one of the main points which I feel is necessary to bring to the attention of the readers of this newsletter. That topic is Woody Biomass. Biomass is defined as: “Plant material, vegetation, or agricultural waste used as a fuel or energy source”. Biomass is classified by the federal government as a renewable resource. That means energy produced with it is classified as green just as much as wind, solar, water (which at times seems to get a bad rap) and ethanol.

I currently manage a 32 megawatt power plant that is completely fired by woody biomass. In the case of this power plant we are only able to use biomass material that is not painted or treated with any substances. The quality of the material burned in this facility is monitored by federal and state agencies (California Title V permitting) to ensure the renewable status of the facility.

Historically wood fired power plants similar to the one that I manage were built as a means to get rid of waste material (sawdust and bark) created in the processing of logs into lumber. Actually the material was burned to make steam to dry the lumber in kilns before it was later used to produce the steam required to run generators for the electricity needed to run the sawmill machinery. In most instances the operations were restricted to the material produced by the sawmill and the power plants fueled by the waste material were independent of the local utility grid. In the later part of the 20th century these power plants were connected to the utility grids to capture additional revenue from the excess fuel produced by the sawmill. In more recent years with the advancement of technology and automation the amount of waste material coming from sawmills has decreased as the technological advancements turn more of the raw material resources into usable lumber.
Another factor that has caused a reduction of available biomass for power is the use of wood chips for pulp production. The current value of wood chips more than exceeds the value of power that can be produced from the same material if it were used as fuel for power plants. I’m sure this is no new revelation to those involved in the pulp and paper industries. So once again, what’s my point?

Recently I was driving through northern California in the Lassen National Forest and was appalled to see the amount of dead and dying trees throughout the forest. Although this example of residue is not typical in the areas of the forest where there are residences; there are unfortunately thousands of acres of the more remote portions of the forest like the picture shown.

If this condition continues to exist it is only a matter of time before there is a forest fire and thousands of acres of our natural resources simply go up in smoke not to mention the cost of fighting and containing the fire as well as eventually reforesting the land.
It would seem to me that this resource could be better utilized in sawmills and power plants in particular, and at the same time reduce the fuel for a forest fire in the event that Smokey the Bear isn’t able to stop all those that may start. I have no doubt that the people that manage our public forest would agree, but they are undoubtedly faced with the obstacle of the cost of removing the problematic material. The problem with using the fuel for power is getting the fuel to the power plant. Gathering the fuel up and converting it into a form that is easily transported to a power plant using portable hogs is a very costly endeavor.
There is also the cost of hauling the fuel. The trucking costs alone make the project virtually price prohibiting if calculated strictly on an electrical power sales perspective. This is where there needs to be a change in our thinking of value. If we believe that we want to preserve the planet and its resources then we have to help in the cost of that preservation. In watching and listening to the hype that is associated with the phrase quotes at the beginning of the article “global warming “ and “reduction of green house gases” I hear lots of talk and little actual substance that is practical. We can have rock concerts to save the earth or we can channel our energy in directions that get results. Turning dead and dying forest residue into green renewable energy I propose as one of those efforts. The cost of accomplishing this task does not have to fall directly on us as taxpayers but can be accomplished in various creative methods if we simply put our minds to it. A few examples:

- Use prison work crews to gather material into manageable piles.
- Organize civic groups to gather material.
- Partner with high schools and colleges in the form of educational programs to gather the material.
- Solicit the support of elected officials to solve the problem with legislative support. This could mean special taxes or incentives to help subsidize contractors to gather and deliver the material to power plants.
The last bullet is shifting the cost to the public, but if the public truly wants to save their planet then maybe they would be willing to cut back on items that are of lesser importance (i.e. ring tones, super sized meals, five dollar cups of coffee; you fill in the blank). As in the case of California; part of Governor Schwarzenegger’s EXECUTIVE ORDER S-06-06, targets 20 percent of the state’s electricity be produced through biomass energy by the year 2010. This again is not to minimize other forms of renewable energy but to encourage the readers of this column to get involved when the opportunity arises and raise their hand in support of using biomass as an alternative to our pressing environmental challenges. If you have comments please feel free to contact me at fwilson@palco.com or 707-764-4360.

My next article will return to technology within the LTI (I promise).

Respectfully,

Frank R. Wilson
WHO’S DOIN’ ANYTHING?:

Paper Industry Fears Worker Shortage

WATERVILLE, Maine (AP) - Despite a major decline over the past two decades, Maine's paper industry remains the largest manufacturing sector in the state. But pressures persist.

One perplexing question: Where will a new generation of paper workers come from? According to Mike Barden of the Maine Pulp and Paper Association, the industry will see 2,200 workers turn 63 within the next 10 years.

"If we are going to survive as an industry," said Glenn Saucier of Millinocket's Katahdin Paper, "we better damn well make some good paper workers very quickly."

Paper mill employment fell from 17,200 in 1990 to 10,200 in 2003, according to a study done for the Maine Future Forest Economy Project.

The drop has continued in the past four years, with the work force now standing at an estimated 7,000 workers, based on the latest information from the pulp and paper association.

When Saucier attended a meeting at Kennebec Valley Community College in Fairfield last month, he was joined by seven other executives from the industry.

The college's Pulp and Paper Technology Program is the only program in the state that teaches the skills needed to become a machine operator or technician. The University of Maine has a Process Development Center that is part of a program aimed at developing engineers for the paper industry.

Together, the two programs are the only Maine source of qualified new workers for an industry whose work force is rapidly growing older, with an average age of 54.

And the number of graduates they are producing is not nearly enough to meet the coming demand, industry executives say. Bob Barnes, 66, got a job at what is now Madison Paper Industries 32 years ago, and even though he loves the profession, the machine tender plans to retire in the next few years.

"I just appreciated being here," he said. "I just loved it. It's been a super career for me." But the number of paper mills has dwindled, with only 11 active among nine companies. Among the closures: the Kimberly-Clark mill in Winslow, Statler Tissue in Augusta, Gardiner Paperboard, Georgia-Pacific's Old Town Mill. Sappi closed its pulp operation in Westbrook in 1999.

Meanwhile, job cuts continue. Fraser Papers in Madawaska recently announced plans to shut down three paper machines and eliminate 135 positions.

Bill Cohen of Verso Paper, which has mills in Bucksport and Jay, acknowledges that the paper industry faces a labor challenge.

"It is harder to recruit, because of the perception that it is a dying industry," he said. "That is one thing we have to overcome. We are not dying; we are continuing to reshape."

Based on 2004 data, the industry accounted for 22 percent of total manufacturing wages in the state, according to the pulp and paper association. The group reports that the paper and allied products sector provides weekly wages averaging about $1,100, which outstrips the nearest competitor by about $300.
WHO’S DOIN’ ANYTHING?: (CONTINUED)

METSO PAPER: First Wrapline Capable Of Handling 5.2 m Wide Rolls

Helsinki, Finland - Metso Paper has built the first wrapping machine that is capable of wrapping huge paper rolls up to 5.2 m in width.

The wrapping machine will be delivered to Plattling Papier, the new uncoated paper line next to Myllykoski’s MD Plattling mill in southern Germany. The line's production is expected to start in the first quarter of 2008.

The record wrapping machine is of the StreamLine type and is equipped with an indexing conveyor and overlap wrapping. With overlap wrapping, only the wide shipping rolls are wrapped with two, three or even four overlapped wrappers. The benefits of standard overlap wrapping are obvious: overlap wrapping provides the best protection against humidity changes and causes less stress on the roll as rotation of the roll is minimized.

No hydraulic actuators or components are used on the StreamLine wrapping machine. All actuators in the system are either electric gear motor operated or pneumatic. No hydraulics means no leakages of hydraulic oil and no hydraulic power units. The maintenance and environmental issues associated with hydraulics are eliminated. Electric drives also produce energy savings in comparison to hydraulic systems.

Prior to 2004, roll finishing equipment was only available for handling rolls less than 3.68 m in width and 7 tonnes in weight. This changed dramatically with the startup of the super-wide printing press at Maul- Belser Medienverbund in Nuremberg, Germany, which changed the market forever and set new dimensions for rotogravure shipping rolls. The maximum web width increased to 4.32 m (14’) and the roll weight to 10 tonnes. The Myllykoski Plattling mill is preparing for the future by designing the wrapping machine to handle rolls 5.2 m wide.

SOURCE: Metso Paper

AF&PA Announces Acting President And CEO

Washington, D.C. — The Board of Directors of the American Forest & Paper Association (AF&PA) has named Donna A. Harman acting President and CEO of AF&PA. Ms. Harman succeeds Juanita D. Duggan, who has resigned from the Association to pursue other interests.

Ms. Harman joined AF&PA in 2001 as Vice President of Congressional Affairs. She was promoted to Senior Vice President, Policy and Government Affairs in 2006, leading the Association’s lobbying and policy efforts.

AF&PA Board Chairman Jim Rubright, President and CEO of Rock-Tenn Co., said Ms. Harman’s expertise in policy-making and extensive knowledge of the forest products industry is the confluence of talents AF&PA needs.

“With 17 years of experience representing the forest products industry in Washington, D.C., Donna brings a wealth of knowledge and experience to the Association at an important time,” Rubright said. “The depth and strength of our capable Association staff will allow the industry to continue to move forward on the important business and public policy issues we face.”

SOURCE: American Forest & Paper Association
WHO’S DOIN’ ANYTHING?: (CONTINUED)

Boise Unveils New Line Of C1S Flexible Packaging Papers

Bensenville, IL - Boise Paper, a business unit of Boise Cascade, LLC announced recently the launch of Boise C1S Flexible Packaging Papers, a new product family that will complement Boise's current uncoated line of flexible packaging papers. The new line includes Boise C1S FlexPack and Boise C1S FlexBag and will provide converters with new and advanced options to help them meet their customers' increasing and ever-changing flexible packaging needs.

Building on over five years of flexible packaging experience, Boise C1S Flexible Packaging Papers expand Boise's already strong standing as a leading flexible packaging paper provider. Boise's investment in expanding the capabilities of the W3 machine enhances its ability to offer customers new product offerings and customized solutions. This new line of paper is made possible by leveraging Boise's unique combination of a large, high-volume W3 machine in Wallula, Washington, and a medium-sized, specialty I4 machine in International Falls, Minnesota.

"The debut of Boise C1S Flexible Packaging Papers is another example of how Boise Paper continues to extend its leadership in coated and specialty papers," said Mary Ignas, Project Leader. "We are dedicated to this market and strive to provide our customers with the products and options that they need to be successful in their ever-changing environments. The development of Boise C1S FlexPack and Boise C1S FlexBag as well as customized C1S flexible packaging grades reflects this commitment."

Boise C1S FlexPack provides converters with an ideal option for a variety of end-uses including pouches, lidding, small bags, and laminating applications. Key features include bright blue-white shade, high gloss, excellent flexography print surface, and FDA-approval for direct food contact.

Boise C1S FlexBag is great for a variety of flexible packaging and laminating applications where superior strength is essential. Typical end uses include single-wall and multi-wall bag applications including retail shopping bags. Key features include bright blue-white shade, excellent strength properties, superior crack resistance, and FDA-approval for direct food contact. Visit our website at http://www.boiseflexiblepackaging.com/

SOURCE: Boise Paper

UPM, Andritz/Carbona Team Up For Biomass Based Synthetic Gas Production

Helsinki, Finland — Global forestry company UPM, international technology group Andritz and its associated company Carbona intend to co-operate on the development of the technology for biomass gasification and synthetic gas purification. Gasification technology is required for the production of synthetic gas that will feed the Fischer-Tropsch based second generation biodiesel production facility.

The companies plan to start the joint testing project of Carbona's gasification technology at the Gas Technology Institute’s pilot plant located close to Chicago in the United States. Laboratory testing and modification of GTI’s test plant would start in July. The institute has equipment which can be applied for synthetic gas production under conditions similar to commercial scale plants.

Estimated total costs of the piloting are EUR 5 to 10 million. Pilot testing is expected to be finished by the end of 2008. The co-operation also covers the design and supply of a commercial scale biomass gasification plants.

UPM announced in October 2006 that it will strongly increase its stake in second generation biodiesel in the next few years and prepares to become a significant producer of renewable biofuels. The main raw material used in UPM's biodiesel production will be wood based biomass. The company is already known for making efficient use of biomass in production of paper and wood products as well as in energy generation. Locating biodiesel production plants adjacent to existing UPM pulp or paper mills would further enhance the company's ability to utilise the wood raw material efficiently.

Andritz has a comprehensive product portfolio for biomass starting from wood handling equipment, dryers and pellet machines to fluid bed boilers and gasifiers for lime kilns. Recent addition of Carbona's special gasification technology enables further gasification applications to complement the product family.

SOURCE: UPM
WHO’S DOIN’ ANYTHING?: (CONTINUED)

Air Products and NORAM Form Siloxy Joint Venture To Address Pulping Liquor Discharge From Non-Wood Pulping Processes

Lehigh Valley, PA - Air Products recently announced it has formed a joint venture company named Siloxy Limited with NORAM Engineering and Constructors Ltd. of Vancouver, British Columbia, Canada to market patented and proprietary technologies to improve the environmental and economic performance of non-wood pulp mills. Many non-wood pulp and paper mills must comply with new stringent water discharge regulations. The Siloxy technologies provide compliance by substantially reducing the discharge of water pollutants from these mills while producing a positive return on investment. The technology may be applied to wood-based pulping as well.

"We are excited about the formation of the Siloxy joint venture and what it offers the pulp and paper industry in the way of environmental and economic benefits," said Robert W. Levis, vice president and general manager, Asia Merchant Gases for Air Products.

"We're very pleased to be working with Air Products to address a long-standing technical and environmental issue. We believe that we have solutions that will demonstrate economic and environmental benefits," said George Cook, president of NORAM.

"These are proven technologies that we can put in place in regions of the globe where waste streams from straw pulping process impact water resources and water quality. Siloxy offers a way for pulp mills to continue to manufacture, reduce their environmental impact, and improve their economics," said Tom Mullen, Siloxy’s president and general manager.

Siloxy has ownership of three novel technologies:

- Desilication technology that removes silica from a by-product stream (black liquor) of the pulping process.
- Oxidation technology which combusts black liquor or waste streams with a high chemical oxygen demand (COD) with pure oxygen.
- Evaporator technology for highly foaming black liquors.

More information on these novel technologies can be found at http://www.siloxy.com.

SOURCE: Air Products

International Paper To Close Terre Haute Mill By Year-End

Memphis, TN — International Paper has announced the company will close its Terre Haute, Ind., containerboard mill in the fourth quarter of this year.

"We have been thoroughly studying options for the Terre Haute mill over the last two years," said Dennis Colley, vice president and general manager of International Paper's containerboard business. "The mill's relatively small size and high manufacturing costs hindered its long-term competitiveness, and ultimately have led to our decision to close the mill."

Colley said salaried employees would receive severance pay and benefits, and the company would bargain the effects of the closure with the union. "While we realize a decision to close the mill is not the news employees want to hear, our goal is to provide outplacement assistance that will help address employees' needs as they transition to new employment," Colley said.

In July 2005, as part of its transformation plan, International Paper began a study of options for strengthening its containerboard business, including the possible sale or closure of the Terre Haute mill. The company explored options to sell the mill, but ultimately, the same limitations that made continued operations unfeasible made sale unfeasible as well.

Within the next few months, the mill will begin preparing for closure, allowing ample time to smoothly transition customers.

The Terre Haute mill employs approximately 170 people and annually produces approximately 200,000 tons of medium, a type of paperboard used in corrugated packaging. The mill began operation in 1917, and was acquired by International Paper in 1998 as part of the company's acquisition of Westin Wabash Co.

SOURCE: International Paper
SMART Papers Expands Genesis, Flagship Environmental Line; Adds New FSC-Certified, 100% PCW Printing Papers

Hamilton, OH - SMART Papers said it has expanded its core environmental gradeline, Genesis, to feature new 100 percent post-consumer waste papers, new Forest Stewardship Council-certified papers, new colors and a new super-smooth print surface.

SMART Papers is one of the North America’s largest independent manufacturer and marketer of premium coated and uncoated printing papers for offset and digital printing. Genesis is its flagship environmental gradeline with all sheets containing 30% to 100% post-consumer waste (PCW) content, as well as products that are FSC-certified with 100% PCW. Digital papers in Genesis are laser and inkjet guaranteed.

“We’re in a new era of papermaking—one where there’s no longer a tradeoff between earth-friendliness and paper quality,” said Dan Maheu, president and chief operating officer for SMART Papers. “Our newly expanded Genesis line demonstrates our commitment to give designers, printers and their customers some of the best-printing environmental papers available on the market today.”

The swatchbook’s environment theme is showcased with striking, brightly colored underwater photography by Paul Sutherland of Princeton, NJ. Sutherland, a renowned marine wildlife photographer, has had his work featured in National Geographic and Scientific American magazines among many others.

The swatchbook was designed by Memphis-based Chung Design and printed by Williamson Printing in Dallas. Notes on how Williamson printed each of the images are provided.

Details on the Genesis line

The new Genesis line is bold and versatile with its wood-flecked papers, new cover colors and expanded whites and off-whites. The high quality, 30% to 100% post-consumer waste content and FSC-certified sheets make the line the right choice for projects requiring premium papers that are environmentally responsible.

Genesis now offers 17 colors, nine weights and four finishes for creatives and printers to use for projects such as annual reports, identity systems, greeting cards and hang tags.

Four new classic whites and creams from the former Benefit brand bring the number of whites and earth tones in Genesis to eight. Two of these sheets—Snowday and Cream Puff—feature an improved print surface treatment and also are available in a vertical texture. Both Genesis 100 PCW White and 100 PCW Natural are FSC certified.

Five new colors include rich and saturated Coco, Cranberry, Windsor Green, Dark Blue and Serious Black. Weights range from 24-pound writing papers to a 160-pound double-thick cover. The line’s four finishes include Smooth, Vellum, Felt and Vertical.

All of the sheets within the Genesis Platform Colors are laser and inkjet guaranteed and all sheets throughout the gradeline are archival, acid free, process chlorine-free (PCF), elemental chlorine-free (ECF) and contain 30% to 100% PCW content.

To obtain the new Genesis swatchbook, contact your local paper merchant or call SMART Papers at 800-443-9773.

SOURCE: SMART Papers
TECHNICAL PRESENTATION

Process Control Security Journey

by

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This Powerpoint presentation was presented at the 53rd Annual IEEE Industry Applications Society Pulp & Paper Industry Technical Conference at the Colonial Williamsburg Convention Center in Williamsburg, VA June 24 – 29, 2007
Process Control Security Journey

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• Darcy Hagedorn
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  18 years with Weyerhaeuser
  (R&D PCtrl/HMI - Manufacturing Systems - IT)
  BSEE Kettering University (GMI)

• Dick Peterson
  Senior Enterprise Architect (IT)
  12 years with Weyerhaeuser
  Areas of focus have included applications portfolio planning, strategic planning, and vendor relationship management

• Bruce Honda
  Process Control Advisor (R&D)
  29 years with Weyerhaeuser
  Member IT Security Team
  BSEE University of Washington
  MS Wood Science University of Washington
Agenda

- Nature of the problem - Fear, Uncertainty and Doubt – FUD
- Architectural approach
- A bit about our Journey
A few questions?

- How many of you have laptops?
- How many of you have used the wireless high-speed internet to:
  - Check email
  - Surf the web – news, weather, vendor information, vendor support, vendor updates
- Transfer files – USB jump drive
- Any use that laptop to connect back on your corporate network?
- Any use that laptop to:
  - Troubleshoot PLCs, develop HMIs, set up drives, monitor power systems, etc
Nature of the Problem - Background

- **Today’s environment consists of integrated process control and information systems**
  - Often these systems are either on the same network, or on networks that are connected in an open manner
  - Cyber threats – virus, worms, broadcast storms, and denial of service attacks now threaten process control systems in addition to IT systems
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**The Most Famous (or Infamous) Viruses and Worms of All Time**

**CODE RED**

In July 2001, Code Red spread via a flaw in Microsoft's Internet Information Server. The worm exploited a vulnerability in the indexing software distributed with IIS and caused widespread panic by defacing Web sites with the stock phrase "Hacked By Chinese!" Code Red spread itself by looking for more vulnerable IIS servers on the Internet and, in August 2001, launched a denial-of-service attack against several U.S. government Web sites, including the White House portal. Less than a month later, a new mutant identified as Code Red II appeared and wreaked even more havoc.
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The Most Famous (or Infamous) Viruses and Worms of All Time

**SLAMMER**
Reminiscent of the Code Red worm, Slammer exploited two buffer overflow vulnerabilities in Microsoft's SQL Server database, causing major congestion of Internet traffic throughout Asia, Europe and North America. The worm infected about 75,000 hosts in the first 10 minutes and knocked several ISPs around the world offline for extended periods of time.
Cyber threats – virus, worms, broadcast storms, and denial of service attacks now threaten process control systems in addition to IT systems.

The Most Famous (or Infamous) Viruses and Worms of All Time

**Nimda**

W32.Nimda was a double-threat, operating as a hybrid between a virus and a worm. Like Code Red, it attempted to take over Microsoft IIS systems by utilizing known security holes in the Web server. However, while Code Red used only one security hole, W32.Nimda made multiple attempts on systems, trying different exploits. The program also spread itself through e-mail through an attachment called readme.exe.
Cyber threats – virus, worms, broadcast storms, and denial of service attacks now threaten process control systems in addition to IT systems.

The Most Famous (or Infamous) Viruses and Worms of All Time

SOBIG AND BLASTER

As Microsoft struggled to cope with the Slammer fallout, there were two new outbreaks with Sobig and Blaster squirming through millions of unpatched Windows machines. The fast-spreading worms crippled network infrastructure globally and the cleanup and recovery were estimated to be tens of billions of dollars. Blaster was particularly nasty. The worm spread by exploiting a buffer overflow in the DCOM RPC service on Windows 2000 and Windows XP and also launched a SYN flood attack against port 80 of Microsoft's windowsupdate.com site that is used to distribute security patches.
Cyber threats – virus, worms, broadcast storms, and denial of service attacks now threaten process control systems in addition to IT systems.

The Most Famous (or Infamous) Viruses and Worms of All Time

ELK CLONER, SCA, BRAIN AND MORRIS

The first sign of computer worm activity dates back to 1982, when a program called Elk Cloner squirmed through Apple II systems. The SCA virus and Brain, written for IBM PC compatibles and Amigas, would pop up in the late 1980s, followed by the Morris Worm, the first documented “in the wild” proof-of-concept that infected DEC VAX machines.
Cyber threats – virus, worms, broadcast storms, and denial of service attacks now threaten process control systems in addition to IT systems

The Most Famous (or Infamous) Viruses and Worms of All Time

MELISSA

Named after a lap dancer in Florida, the 1999 Melissa worm is considered the first destructive mass-mailer targeting Microsoft customers. The worm was programmed to spread via Microsoft Word- and Outlook-based systems, and the infection rate was startling. Melissa, created by a New Jersey hacker who would go to jail for the attack, was released on a Usenet discussion group inside a Microsoft Word file. It spread quickly via e-mail, sending anti-virus vendors scrambling to add detections and prompting immediate warnings from the CERT Coordination Center.
Cyber threats – virus, worms, broadcast storms, and denial of service attacks now threaten process control systems in addition to IT systems.

The Most Famous (or Infamous) Viruses and Worms of All Time

**MICHELANGELO**

In 1991, the world waited and watched for the Michelangelo virus, a "time bomb" that bombed. Set to deploy on March 6 (Michelangelo's birthday), the virus was designed to overwrite critical drive sectors, but it did little damage in reality.
• “...the W32.Blaster worm may have contributed to the cascading effect of the Aug. 14 blackout, government and industry experts revealed....”
• “...the Blaster worm also hampered the ability of utilities in the New York region to restore power in a more timely manner...”
• In one case, a server on a control center LAN running Microsoft's SQL Server wasn't patched, according to the report. "The worm ... apparently [migrated] through the corporate networks until it finally reached the critical SCADA network via a remote computer through a VPN connection," the report states. As a result, "the worm propagated, blocking SCADA traffic."

http://www.computerworld.com/printthis/2003/0,4814,84510,00.html
June 15, 2007
“the Italian job”

- 10,000 legitimate website infected
- Blended attack - MPack Trojan kit, Keylogger
- Utilizes iFrames / JAVA script, user clicks and gets redirected via buffer overflow vulnerabilities
- Turns PC into Proxy server for advanced attacks
- Outbreak in Italy, Spain... spreading fast

- Mitigation
  - Update Anti-Virus patterns, defs
  - Limit Internet surfing
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Proliferation of off-the-shelf technology into process control systems architecture provides platform for threats

- Proprietary systems
- PC based, Microsoft, Ethernet, Internet

*Who doesn’t have a product that’s not WinTel based?*
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Nature of Threats

- **Technical architecture of today’s process control systems**
  - Pervasiveness of Microsoft and Intel technologies
  - Internet connectivity used for support and updates of process control systems
  - Common data access methods
    - OPC, DCOM, FTP, ODBC, SQL, web services, etc.
  - Openness is a two edged sword
    - Necessary for achieving desired goals of manufacturing performance
    - Provides environment that enables threats to infect and spread

- **Solutions involve technology and people and processes**
  - Technology is easier of these three to address
  - Information Technology and Process Control must collaborate and cooperate
IT vs Process Control – NOT!

- **Common technologies but uncommon requirements**
  - Both environments use Ethernet-based network technology
  - Process Control has 7X24 uptime and real-time response requirements
  - Process Control systems cannot be re-booted at any time to install patches and updates as can office systems
  - Virus scan technology can interfere with critical process control applications
  - Security processes developed for the office environment need to be tailored to the Process Control world

- **Needed – A unified architectural approach addressing technology, processes, and people issues**
  - (multilayered Defense in depth)
Developing an Architectural Approach

- **Identify scope of opportunity**
  - Document past incidents, assess risks, evaluate threats, identify needs for future integration of systems, perform benchmarking activities
  - Selected network connectivity as initial scope of effort

- **Gain sponsorship**
  - Important to gain management buy-in through education and communication

- **Assess current state**
  - Selected representative sites to audit and evaluate as to current configuration, risk analysis, and degree of connectivity between IT and Process systems

- **Identify and evaluate alternatives**
  - Separate networks, open connections, gateways, VPN, VLAN, IP Address filtering, Dual NIC, non-separated

- **Select target architecture from alternatives**

- **Gain approval**

- **Implementation**
Selected Network Architecture: Physical Separation with Managed Firewall

Physically Separate Networks with Managed Firewall
Network Separation Detailed Considerations

- **Separation with Security is Goal – More to it than physical separation**
- **Firewall configuration rules management**
  - Process needed to insure that configurations are correct
- **Patch management**
  - Processes must be developed to insure patches are tested and are compatible
- **Anti-virus protection**
  - Must be tested and validated against process system requirements
- **3rd party access needs**
  - Development of procedures and policies that allow needed access while meeting security requirements
- **Backup and recovery**
- **Organization**
Firewall configuration rules management
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## Analysis of Alternatives

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<th>Dual-NIC</th>
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<th>Firewall</th>
<th>Separate Network</th>
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<tr>
<td><strong>Risk</strong></td>
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<td>Yellow</td>
<td>Green</td>
<td>Green</td>
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<tr>
<td><strong>Cost</strong></td>
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<td>Green</td>
<td>Yellow</td>
<td>Green</td>
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<tr>
<td><strong>Functionality</strong></td>
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<td>Yellow</td>
<td>Yellow</td>
<td>Green</td>
<td>Red</td>
</tr>
<tr>
<td><strong>Scalability</strong></td>
<td>Green</td>
<td>Yellow</td>
<td>Yellow</td>
<td>Green</td>
<td>Red</td>
</tr>
<tr>
<td><strong>Manageability</strong></td>
<td>Yellow</td>
<td>Yellow</td>
<td>Red</td>
<td>Yellow</td>
<td>Green</td>
</tr>
</tbody>
</table>

**Key:**
- **GREEN** – Good (low risk, low cost, high functionality, scalable, remotely manageable)
- **YELLOW** – Moderate (moderate risk, medium: cost, functionality, scalability, and manageability)
- **RED** – Poor (high risk and cost, low functionality, not scalable, and difficult to manage)
Implementation Experiences

- Assembled cross-functional team:
  - IT Architecture, IT Security, Process Control, Network Engineering, Platform Engineering, Local Mill Engineering
  - Goal: Develop and implement plans to separate control and information networks while providing secure access to data in an environment that is manageable on a sustaining basis.
  - Each team member contributed in their specific area of expertise and played a major role in the final product
  - Implemented 3 pilot sites while documenting lessons learned
  - Developed and continuing to refine best practices and guidelines.
Organizational Implications

- Many organizations impacted by this effort:
  - Information Technology – strategy for integrated information environment
  - Process Control – responsible for process control systems
  - Security – accountable for security of company assets, including information
  - Internal Audit – SOX and related issues
  - Business Leadership – commitment and budget support
Summary and Conclusions

- Security is a journey, not a destination
- Achieving 100% risk free state is impossible
- Critical Success Factors:
  - Understanding the nature of the threats that now exist and the potential impacts that they can have on one’s operations.
  - Develop an approach that considers that people, processes, and technology are all equally important elements of an overall program of risk mitigation.
  - Work the plan and communicate, communicate, communicate!
References

- North American Electric Reliability Council (NERC) (http://www.nerc.com/cip.html)
- Chemical Industry Data Exchange (CIDX) (http://www.cidx.org/CyberSecurity/default.asp)
- Institute of Electrical and Electronics Engineers (IEEE) (http://www.ieee.org/portal/site)
- International Electrotechnical Commission (IEC) (http://www.iec.ch/)
- U.S. Department of Energy National SCADA Test Bed Program (http://www.inel.gov/featurestories/03-03scada-test-bed.shtml)
- Process Control Systems Forum (PCSF) (https://www.pcsforum.org)
Thank You

- Questions or clarifications?
LETTERS TO THE EDITOR

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

You can reach the site at http://www.isa.org/scripts/lyris.pl?enter=pupid&text_mode=&lang=english or by going to the PUPID or the main ISA websites and looking for the “ISA Technical Divisions”
**Links to Related Websites**

ISA Pulp & Paper Website  
http://www.isa.org/~pupid/

ISA Pulp & Paper Technical Discussion Forum  
http://www.isa.org/scripts/lyris.pl?enter=pupid&text_mode=&lang=english

ISA Technical Conference Session Schedule  
http://www.isa.org/Template.cfm?Section=Conferences_and_Exhibitions&template=/taggedpage/conferencesbydate.cfm&icid=61

Pulp & Paper Research Institute of Canada  
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http://www.hut.fi/English/

Technical Association of the Australian and New Zealand Pulp &amp Paper Industry (APPITA)  

Australian Pulp & Paper Institute  

ISO Standards Technical Committee List  

ISA Standards Committees Listserver  
http://www.isa.org/shellcgi/lyris.pl?site=isa&page=topic&topic=standards+committees&text_mode=0&lang=english

**Quickies**

ISA Pulp & Paper Technical Discussion Forum

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/, select "Pulp & Paper Technical Discussion Forum" in the pick box, click "Go", and enter your email address and a password.

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Any ISA member can register for a free email address and online mailbox. If you set it up, your ISA email address will be youname@member.ISA.org. To register, go to http://www.isa.org/membership/benies/, and follow the registration instructions.

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
### WORLD CORNERS

<table>
<thead>
<tr>
<th>Corner</th>
<th>Message</th>
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</thead>
<tbody>
<tr>
<td><strong>Canada Corner</strong></td>
<td>Nothing from anyone there this time!</td>
</tr>
<tr>
<td><strong>Central &amp; South American Corner</strong></td>
<td>Nothing from anyone there this time!</td>
</tr>
<tr>
<td><strong>Far East Corner</strong></td>
<td>Nothing from anyone there this time!</td>
</tr>
<tr>
<td><strong>From the Land of the Midnight Sun</strong></td>
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