Well, as I write this it is the first week of February, in the middle of Winter, and I hope you all had a fantastic Holiday season. Winter is here in Washington State, but it’s still pretty nice and not any snow on the ground where I am.

Please go to page 15 & 16 to read the Director’s Message from PUPID Director Ronaldo Ribeiro of Cenibra.

The bad news is that in the last quarter, PUPID has lost 18 members and has dropped down to 173 regular dues-paying members; and we now have 24 members that are in active grace status.

As usual for the Winter Logger newsletters, I am proud to have a paper pH in the BP Why It’s Important - Part 1 by Doug Reid of Nouryon, in Marietta, Georgia from the 2020 PaperWeek Canada annual conference & tradeshow, arguably the most important conference serving the pulp/paper and forest products industry.

Please do not hesitate to contact me at Brad S. Carlberg, P.E., CSE or to discuss how you can help PUPID.

I hope to encourage you to become more involved with the Division and to enroll more members.

Do feel free to forward the Newsletter to your friends and colleagues who may have an interest in it.
Tuning Tip: ISA 99/IEC 62443 Industrial Cyber Security

(Taken from the paper “Security and the Connected Enterprise” by ISA Fellow Eric Byres, P.Eng., of Tofino Security, a Belden Brand; Copyright 2013 ISA. Originally presented at ISA Automation Week 2013 in Nashville, Tennessee at the Renaissance Nashville, USA, 4-7 November 2013

In an example of an oil refinery, specify the zones and their attributes to define the data flow between those zones to assure that the plant’s process control network will not be vulnerable to a cyber attack.

Find the answers to this question on page 33

Calendar of Events

Get a quick overview of the ISA PUPID events by going to the Calendar at: https://www.isa.org/division/pupid/events/

ISA Strategic Leader Meeting
DoubleTree By Hilton Hotel Austin
March 6 – 9, 2020
Austin, TX

2020 BLRBAC Meetings
Spring Meeting: April 20 – 22, 2020

PAPERCON 2020
April 26 – 29, 2020
Renaissance Atlanta Waverly Hotel & Convention’s process control network Center Atlanta, GA

11TH International Woodfiber Resource and Trade Conference
April 29-30, 2020 (Field Trip April 27-28)
Sheraton Lisboa Hotel | Lisbon, Portugal

International Chemical Recovery Conference (ICRC) 2020
May 18 - 21, 2020
Hotel Parque Baineário
Santos, São Paulo, Brasil

66th IEEE Pulp & Paper 2020
June 22 - 25, 2020
Crowne Plaza Niagara Falls – Fallsview Hotel
Niagara Falls, ON

2020 BLRBAC Meetings
Fall Meeting: October 5 – 7, 2020

ISA Annual Leaders Conference 2020
October 23 – 26, 2020
LaConcha Resort
San Juan, PR
WELCOME TO THE 11 NEW ISA PULP & PAPER INDUSTRY DIVISION MEMBERS

Mark Bolduc            Nick Julius Stabler            Michael Dobson
Meliton III Acosta       Xin Yun Feng            Mark Bradham
Frederico Campos     Sameer Kalwani            Rick Franda
Rogério Coimbra

HERE’S A REMINDER TO THE 24 ISA PULP & PAPER INDUSTRY DIVISION MEMBERS WHO NEED TO RENEW THEIR MEMBERSHIP

Huibertus H. De Rijk            Nan Yu            Steven Holland
William R. Lovejoy      Jonathan A. Whitten            Jorge Esteban Meneses
Stephen James Eves            Prashob Pulparambil
Michael J. Tucker            Kanikattil
Brian J. Lee            Charles (Ed) Elliott
Carlos A. Marin            Dan Beistel
Gerson M. Moita            Pool Martín Tasayco
Kevin Anton DeWitt            Cárdenas

DON’T FORGET TO RENEW!

CCST question

The _________________ process confirms that a company (1) documents what it does, (2) does what it documents, and (3) documents that it did it.
A. ISA12.11
B. ISO 9000
C. NFPA: 70-84
D. CENELEC

CAP question

Which of the following procedures would NOT be included in an instrument commissioning testing matrix?
A. loop checks and loop tuning
B. calibration
C. receipt verification
D. justification analysis
Valmet to supply new cooking and fiber line at Tamil Nadu Newsprint and Papers in Trichy, India

ESPOO, Finland, Feb. 3, 2020 (Press Release) - Valmet will deliver cooking and fiberline to Tamil Nadu Newsprint and Papers Ltd. (TNPL) for their unit 2, located in Mondipatti in the Trichy District, India. The site has a 200,000 tons per year multilayer board machine, which has been in operation since 2016. The new pulp mill will have a capacity of 165,000 tons per year of bleached hardwood kraft pulp and the start-up is planned for the first quarter of 2021.

The order is included in Valmet’s orders received of the fourth quarter 2019. The value of the order will not be disclosed. An order with this scope of supply is usually valued in the range of EUR 20-30 million.

Valmet has a long-term relationship with TNPL. Valmet has previously supplied two fiberlines based on hardwood and bagasse respectively to their unit 1, located in Kagithapuram in the Karur District, India.

“Valmet’s technology is proven to meet TNPL’s strict requirements for low water consumption and raw material efficiency, which have special importance in this region. Since the launch of our latest third generation continuous cooking system in late 2018, we have been well received by the market and this order is yet another acknowledgment of that. Furthermore, this will be Valmet’s first modern reference in India for a continuous digester system, so we are proud and grateful to be a part of the project together with TNPL,” says Eva Engelfeldt, Senior Sales Manager, Fiber Processing Business Unit, Valmet.

“The unit 2 is a leading manufacturer of pulp and paper board in India. The new pulp mill with Valmet’s cooking and fiberline technology will further strengthen our ambition to maintain the leading position,” says S J Varadarajan, General Manager (Projects), TNPL. “The Valmet fiberline brings the latest technology to the TNPL Unit 2 with thrust on water conservation and environment protection. This fiberline will go a long way in making the operations of our unit 2 profitable,” says S V R Krishnan, Executive Director (Operations), TNPL.

Information about Tamil Nadu Newsprint and Papers Ltd.
WHO’S DOIN’ ANYTHING? (CONTINUED)

Tamil Nadu Newsprint and Papers is situated at Kagithapuram in the Karur District of the Tamil Nadu province in India. The company produces newsprint and printing & writing papers using hardwood and bagasse as the primary raw materials.

Valmet is the leading global developer and supplier of process technologies, automation and services for the pulp, paper and energy industries. We aim to become the global champion in serving our customers.

Valmet's strong technology offering includes pulp mills, tissue, board and paper production lines, as well as power plants for bioenergy production. Our advanced services and automation solutions improve the reliability and performance of our customers' processes and enhance the effective utilization of raw materials and energy.

Valmet's net sales in 2018 were approximately EUR 3.3 billion. Our more than 13,000 professionals around the world work close to our customers and are committed to moving our customers' performance forward - every day. Valmet's head office is in Espoo, Finland and its shares are listed on the Nasdaq Helsinki.

Veolia to supply cutting-edge chemical recovery at APRIL's Riau Andalan pulp mill

AUBERVILLIERS, France, Jan. 31, 2020 (Press Release) -The state-of-the-art chloride removal system is designed by Veolia Water Technologies to optimize the recovery process in the industry of transformation of hardwood cellulose into pulp for textile fibers and fine paper making.

Rising paper consumption in Asia and growing global demand for more environmentally friendly fibers for the apparel industry are driving the increase in pulp making capacity to convert renewable fibers into a variety of fine paper products and viscose staple.

In tropical Indonesia, the Riau province is a major hub for the forestry industry and is home to the operations of the Asia Pacific Resources International Holdings Limited (APRIL) Group, the world’s second-largest producer of bleached hardwood kraft pulp.

APRIL-owned Riau Andalan Pulp & Paper (RAPP) produces pulp of the highest purity at one of the world’s largest paper mills in Kerinci (Riau). As a result, RAPP performs pulping washing and cleaning steps which produce an organics-rich liquid stream. When this liquor is burned in the recovery cycle, it generates renewable power that helps the mill become energy self-sufficient. Over time, however, the process creates chloride and potassium accumulation which, if not tightly controlled, causes corrosion and boiler fouling increasing maintenance costs.

Hence, to prevent efficiency losses and boiler downtime, these chemicals need to be managed. To this end, Veolia will treat 550 tons per day of precipitator ash through its Enhanced Chloride Removal Process (ECRP™). Featuring best-in-class HPD® crystallization technology, this advanced system is designed to yield the best control of sodium recovery and chloride and potassium removal steps while minimizing energy consumption and related emissions.

“Once again, we are pleased to work with APRIL and build on the success we have achieved together over the years. Veolia’s chemical-saving HPD® technologies will be key components in the expansion of this important production site in Riau helping its pulping operations become more resource-efficient and sustainable” stated Jim Brown, CEO of Veolia Water Technologies Americas.
Through the continuous improvements in HPD® evaporation and crystallization systems, Veolia provides the safest, most-efficient solutions to pulp and paper mills around the world to further reduce their environmental impacts and create economic value derived from the responsible management of closed-loop industrial processes.

About Veolia Water Technologies

Veolia Water Technologies provides the complete range of services required to design, deliver, maintain and upgrade water and wastewater treatment facilities and systems for industrial clients and public authorities. The company’s extensive technology portfolio features everything from online diagnostic solutions to evaporation and crystallization, energy-producing sludge treatment, state-of-the-art desalination, laboratory-grade water and mobile water services. By optimizing both processes and monitoring, Veolia Water Technologies helps clients reduce their water footprint while generating considerable savings in energy and chemical consumption.

Segezha Group to invest more than RUB 800 million on modernization of waste treatment facilities at Segezha PPM

MOSCOW, Jan. 31, 2020 (Press Release) -Segezha Group Forest Industry Holding (part of Sistema JSFC) will invest RUB 805 million into modernization and upgrade of waste treatment facilities of the main employer of Segezha, JSC Segezha Pulp-and-Paper Mill. The program, aimed at reducing the amount of harmful emissions into the atmosphere at all currently operating technological flows, is expected to take three years to implement.

It is a well-known fact that the Segezha Pulp-and-Paper Mill specializes in production of sack paper for industrial and consumer packaging as well as sulfate unbleached pulp. The process of cooking the pulp leads to accumulation of malodorous sulfur-containing compounds in the pulping liquor. Due to this fact, and also in order to improve the environmental situation in the city, the mill will upgrade the waste treatment equipment. More modern and technologically more advanced equipment will be installed.

In particular, the company plans to replace precipitators on soda recovery boilers at the thermoelectric power station providing the enterprise with steam and electricity. HPP-2, one of the main sources of air emissions consists of three soda recovery boilers (SRBs), which return the earlier produced sulfates into production, thus making the process cyclical. Each SRB has been equipped with a special precipitator to clean the air emissions. The program will include replacement of precipitators on two of three currently existing SRBs, which will help lower the amount of emissions significantly. The third SRB has been fitted with a special precipitator to capture and clean the air emission. The filter, installed in 2018, cost RUB 200 million. At present the efficiency of the precipitator on the fourth SRB exceeds 99.5%.

In addition to replacing the equipment, the enterprise will undertake measures to control the quality of atmospheric air. The mill will also study the physical influences on the atmosphere so that the area of the sanitary protection zone around the PPM could be approved. Considerable money will be dedicated to monitoring of malodorous gas emissions in the areas next to residential districts.

Segezha Group has been working on systemic measures to minimize air emissions for a number of years. For instance, in 2018 the Segezha PPM added a new Valmet-made multi-fuel boiler to its technological equipment.
**WHO’S DOIN’ ANYTHING? (CONTINUED)**

The total cost of building the MFB amounted to RUB 3.5 billion. Its filters allow to improve gas purification efficiency to more than 99%. Today the MFB also produces additional electrical energy for production needs, while also helping solve the problem of waste reclamation. Operation of the MFB helped lower considerably the emission of sulfur dioxide, because instead of mazut, the boiler generally uses wood chips, bark and wood byproducts as fuel. The launch of the MFB helped lower mazut consumption by 30%.

“Segezha has every resource necessary to gradually change the ecological situation for the better,” says Anton Fadeev, Chief Ecologist of the Technical Directorate of JSC Segezha PPM. “The company has dedicated more than RUB 800 million to purchasing cutting-edge gas-cleansing equipment; we have professional and qualified specialists in place, and it is obvious that the top management is committed to implementing these plans in practice. These events will provide a considerable effect on improving the quality of the environment in the city.”

**Nouryon accelerates growth with agreement to acquire carboxymethyl cellulose business of J.M. Huber**

AMSTERDAM, The Netherlands , Jan. 30, 2020 (Press Release) -Nouryon is continuing its growth acceleration plans with an agreement to acquire the carboxymethyl cellulose (CMC) business of J.M. Huber Corporation. The transaction will significantly broaden Nouryon’s portfolio of products in CMC, a sustainable, bio-based water-soluble polymer used as a thickener, binder, stabilizer and film former. The companies have largely complementary positions in CMC end markets, which include home and personal care, mining, food, pharmaceuticals, and paper and packaging.

The acquisition underlines Nouryon’s strategy of investing in attractive growth markets, including bolt-on acquisitions. The business manufactures a complete line of CMC grades and serves customers in over 80 countries, generating sales of around €135 million. It includes a world-class manufacturing facility as well as an advanced R&D facility located at Äänekoski, Finland. Around 240 employees from the business will transfer to Nouryon.

“We are excited by the opportunity to acquire this high-quality business,” said Charlie Shaver, Chairman and CEO of Nouryon. “With an expansive range of products that complements our existing CMC portfolio, this business will allow us to offer our current and future customers a significantly broader set of solutions. This acquisition also confirms our commitment to investing in sustainable growth platforms. We look forward to welcoming the employees of this business into the Nouryon family,” he said.

“We’d like to thank our employees in the CMC business for their many years of service to J.M. Huber Corporation and for their strong dedication to the Huber Principles, especially our values of safety, environmental sustainability, and operational excellence,” says Mike Marberry, CEO & President of J.M. Huber Corporation. “We are very pleased that Nouryon, which shares our core values, will become the new strategic owner of this business and continue to provide excellent products and services to our long-standing CMC customers.”

Moelis & Company LLC acted as exclusive financial advisor to Nouryon and Latham & Watkins LLP acted as legal advisor. J.M. Huber Corporation was advised by Citi as exclusive financial advisor and DLA Piper as legal advisor.
WHO’S DOIN’ ANYTHING? (CONTINUED)

The transaction is expected to close in the second quarter of 2020, subject to regulatory approvals.

About Nouryon

We are a global specialty chemicals leader. Markets worldwide rely on our essential chemistry in the manufacture of everyday products such as paper, plastics, building materials, food, pharmaceuticals, and personal care items. Building on our nearly 400-year history, the dedication of our 10,000 employees, and our shared commitment to business growth, strong financial performance, safety, sustainability, and innovation, we have established a world-class business and built strong partnerships with our customers. We operate in over 80 countries around the world and our portfolio of industry-leading brands includes Eka, Dissolvine, Trigonox, and Berol.

UPM invests Euro 550 million in biorefinery to drive switch from fossil raw materials to sustainable solutions at Leuna, Germany

HELSINKI, Jan. 30, 2020 (Press Release) -UPM takes the next transformative growth step and enters the biochemicals business by investing in a biorefinery at Leuna, Germany. The biorefinery will produce a range of 100% wood-based biochemicals which enable a switch from fossil raw materials to sustainable alternatives in various consumer-driven end-uses. The investment opens totally new markets for UPM with large growth potential for the future.

UPM will invest EUR 550 million in an industrial scale biorefinery to convert solid wood into next generation biochemicals: bio-monoethylene glycol (BioMEG) and lignin-based renewable functional fillers. In addition, the biorefinery will produce bio-monomethyl propylene glycol (BioMPG) and industrial sugars. The total annual capacity of the biorefinery will be 220,000 tonnes. The facility is scheduled to start up by the end of 2022.

The product range offers unique customer value and is expected to achieve a good cost position, comparable to the fossil-based alternatives. Once the facility is fully ramped up and optimized, it is expected to achieve the ROCE target of 14%.

“Molecular bioproducts form one of UPM’s three strategic focus areas for growth and are at the core of innovating for a future beyond fossils. We have successfully entered the biofuels business and built a profitable business platform. Now we are creating a totally new sustainable business in biochemicals with large growth potential. This is another major milestone in UPM’s transformation and a great showcase of focused and efficient R&D,” says Jussi Pesonen, President and CEO of UPM.

“We help our customers to make their businesses more sustainable. Currently the supply of biochemicals is very limited. Due to this, high-quality sustainable alternatives are priced at a premium in the markets.”

A combination of sustainable wood supply, unique technology concept, integration into existing infrastructure at Leuna as well as the proximity to customers will ensure competitiveness of operations. The safety and sustainability of the value chain will be based on UPM’s high standards.

Attractive growth markets
WHO’S DOIN’ ANYTHING? (CONTINUED)

Application areas for bio-monoethylene glycol include textiles, PET bottles, packaging, and deicing fluids. Bio-monomopropylene glycol is used for example in composites, pharma, cosmetics, and detergents. The global glycols market represents more than 30 million tonnes in size and is expected to grow annually approximately by 4%. Currently the market supply is practically all based on fossil raw materials: oil, natural gas and coal.

Lignin-based renewable functional fillers are used in different rubber applications as a sustainable alternative to carbon black and silica. The global market for carbon black and silica combined is more than 15 million tonnes with an expected annual growth of approximately 3%. Besides climate benefits UPM’s new renewable functional fillers will provide additional benefits such as lighter weight and high purity.

“We are truly excited to provide the customers world-class sustainable solutions. Renewable raw material and new technologies enable significant improvement in carbon footprint compared to fossil-based products. We can also take pride in creating an entirely European value chain, thus being a sustainable local producer,” says Juuso Konttinen, Vice President, UPM Biochemicals.

“We furthermore, our products fit directly into our customers’ existing processes and the recycling infrastructure. These aspects are important for brand owners and their businesses and pave the way for holistic circular economy,” says Konttinen.

Ideal location in Chemical Site Leuna close to Halle-Leipzig

Being the European center for chemicals industry excellence and located in the middle of the markets, Germany provides an attractive location for the biorefinery. InfraLeuna GmbH, in the state of Saxony-Anhalt, offers very competitive conditions for constructing a biorefinery with its existing permitting processes, logistics arrangements and infrastructure for various services and utilities. UPM plans to enter service agreements related to wood handling, waste water treatment and other utilities that will be recognised as lease assets and liabilities under IFRS 16 Leases. Depending on the final agreement the total amount of such lease assets and liabilities is estimated to be EUR 40-100 million.

The investment is in line with Germany’s bioeconomy strategy and supports the goal of increasing responsible utilisation of the commercial forests. Availability of sustainably sourced hardwood in the region is good. Wood sourcing will be based on forest thinnings and residues of regional sawmills.

Next steps and capital outflow

The engineering and planning is on-going and the tendering for the main equipment, recruitment for the project and permitting process will start immediately. Permitting will proceed parallel to the investment project in line with German legislation.

Following today’s decision UPM increases the estimate for total capital expenditure in 2020 to EUR 1.3 billion.

UPM

We deliver renewable and responsible solutions and innovate for a future beyond fossils across six business areas: UPM Biorefining, UPM Energy, UPM Raflatac, UPM Specialty Papers, UPM Communication Papers and UPM Plywood. We employ around 19,000 people worldwide and our annual sales are approximately EUR 10.5 billion. Our shares are listed on Nasdaq Helsinki Ltd.
WHO’S DOIN’ ANYTHING? (CONTINUED)

Evonik to sell BC hydrogen peroxide plant as part of $625M acquisition of PeroxyChem

GATINEAU, QC, Jan. 28, 2020 (CNW) - The Competition Bureau announced today that it reached an agreement with Evonik Industries AG to address competition concerns related to its proposed acquisition of PeroxyChem Holding Company LLC.

Following an extensive review, the Bureau concluded that Evonik's acquisition of PeroxyChem was likely to result in a substantial lessening of competition in the supply of hydrogen peroxide in Western Canada.

To remedy this concern, Evonik has agreed to sell PeroxyChem's hydrogen peroxide manufacturing facility located in Prince George, British Columbia and related assets to a buyer acceptable to the Commissioner of Competition.

Under the agreement registered with the Competition Tribunal, Evonik has proposed United Initiators (UI) as the buyer of this facility. The Commissioner reviewed UI's suitability and concluded that they are an acceptable buyer.

The Bureau is satisfied that this agreement will preserve competition in Western Canada's hydrogen peroxide market.

For more information on the Bureau's review, consult our comprehensive position statement.

Quote

"Industries such as pulp and paper, oil and gas, and mining rely on hydrogen peroxide in their day-to-day operations. We're pleased to reach this agreement with Evonik to preserve competition in the supply of this chemical to customers in Western Canada."

Jeanne Pratt
Senior Deputy Commissioner of Competition

Quick Facts

On November 7, 2018, Evonik signed an agreement with One Equity Partners, the owner of PeroxyChem, to acquire PeroxyChem for US$625 million.

The Bureau's Merger Intelligence and Notification Unit became aware of the proposed transaction by way of a complaint from a customer in the pulp and paper industry shortly thereafter.

The Bureau worked closely with the U.S. Federal Trade Commission (FTC) throughout its merger review, as the merging parties' production facilities located in Western Canada supply both Canadian and American customers.

Evonik, headquartered in Essen, Germany, is a global specialty chemical manufacturer that produces a wide range of chemicals, including hydrogen peroxide.

UI is a global specialty chemicals manufacturer based in Pullach, Germany.
WHO’S DOIN’ ANYTHING? (CONTINUED)

ABB to supply two drives order for two different Sun Paper projects in China and Laos

SHANGHAI, Jan. 28, 2020 (Press Release) - International pulp and paper producer Sun Paper has selected technology leader ABB to fulfill two orders for its facilities in Laos and Shandong, China. The first order comprises new drives for the company’s paper machine 1 (PM1) and paper machine 2 (PM2) at its Laos mill, while the second includes a synchronous motor, motor starting equipment, excitation protection control and process drives for chemical pulp production at its plant in Shandong, eastern China.

The first order forms part of the second phase of Sun Paper’s Laos project that includes two advanced packaging paper production lines (PM1 and PM2) with annual production capacity of 800,000 tons. ABB will provide its highly-efficient, distributed PMC800 multi-drive control system with total installed capacity of 41,000KW and more than 120 drive points for both paper machines, which are 7.3m and designed for speeds of 1200 m/minute. For the chemical pulp project in Shandong, ABB will provide two sets of 14 MW synchronous motors, medium voltage motors and a drive system.

For both projects, ABB’s scope of supply includes its most advanced PMC800 drive system and ABB Ability™ System 800xA distributed control system (DCS), featuring stable and easy operation, abundant information access and low maintenance requirements. ABB’s drives incorporate unique Direct Torque Control (DTC) technology, ensuring efficient production of high torque at low speeds.

“Competition for these prestigious projects was understandably fierce, but by optimizing our technical proposal and demonstrating our success with previous projects of a similar scope and scale, our China Pulp and Paper team was able to provide the best solution,” said YueMing Liu, Pulp and Paper Industry lead for China at ABB. “ABB also provided the automation solution for phase 1 of the Laos Project, which won the Modern Manufacturing 2018 Solution Excellence Award. By establishing mutual trust in multiple projects with Sun Paper, we hope to provide a solid foundation for our future relationship.”

About the Sun Paper Laos Project

Sun Paper invested in the Laos Project in response to the Belt and Road initiative promoted by the Chinese government, which encourages development along a former trade route that links China with other economies across Asia, Europe and Africa. Phase 1 of the project had a massive undertaking—a 400K ton chemical pulp project that covers the complete process of pulp production, alkaline recovery, pulp board machines, biomass furnaces, and chemicals. Phase 2 will continue to enrich Sun Paper’s product types, increase product grade, promote the product structure upgrading, greatly improve the comprehensive strength and core competitiveness to further consolidate its leading position in the paper making industry of China.

ABB is a pioneering technology leader with a comprehensive offering for digital industries. With a history of innovation spanning more than 130 years, ABB is today a leader in digital industries with four customer-focused, globally leading businesses: Electrification, Industrial Automation, Motion, and Robotics & Discrete Automation, supported by its common ABB Ability™ digital platform. ABB’s market leading Power Grids business will be divested to Hitachi in 2020. ABB operates in more than 100 countries with about 147,000 employees.
WHO’S DOIN’ ANYTHING? (CONTINUED)

Valmet to deliver key pulp mill technology and automation for Lenzing’s and Duratex’s joint pulp mill project in Brazil

ESPOO, Finland, Jan. 23, 2020 (Press Release) - Valmet will deliver key process islands for Lenzing’s and Duratex’s joint venture named LD Celulose S.A. The new 500,000 ton/year dissolving pulp mill is located in the cities of Indianópolis and Araguari in Minas Gerais state, Brazil. Valmet’s delivery includes a fiber line, a pulp drying and baling line, an evaporation plant, a white liquor plant and a mill-wide automation system.

The order is included in Valmet's orders received of the first quarter 2020. The value of the order is not disclosed. The value of a delivery of this size and scope is typically around EUR 200-250 million.

Valmet’s delivery is part of the Lenzing and Duratex joint venture investment of approximately USD 1.3 bn in the 500,000 tonnes dissolving wood pulp mill where Lenzing holds a 51 percent and Duratex a 49 percent stake. The start-up of the new mill is planned for the first half of 2022 and will create approximately 8,000 direct jobs during the construction phase. When it is ready, LD Celulose S.A. will employ approximately 1,100 people to operate the industrial plant and the plantations that will supply it. The dissolving pulp is a key raw material for manufacturing Lenzing’s wood-based textile and specialty fibers.

“Wood-based cellulosic fibers offer an important contribution to enhance sustainability in the textile industry and this investment is in line with our growth strategy and a key milestone to structurally strengthen our cost leadership position. In planning the new production facility, particular importance was given to sustainability aspects. The plant will be among the most productive and energy-efficient mills in the world,” states Stefan Doboczky, CEO of the Lenzing Group.

“LD Celulose S.A. will bring a positive socioeconomic impact throughout the region. We are working with the best environmental practices and with leading companies in the pulp industry, such as Valmet,” emphasizes Luís Künzel, CEO of LD Celulose S.A.

“With our good references in dissolving pulp production technology and strong presence in Brazil we were able to meet the customer’s needs of high quality and energy efficiency as well as supporting high productivity and reliability with our automation solutions. We are happy to be a key partner in delivering a world class mill for Lenzing and Duratex and thus being part of turning renewable raw materials for sustainable textile fibers,” says Bertel Karlstedt, President, Pulp and Energy Business Line, Valmet.

Information about Valmet’s delivery

Valmet will supply key process islands with an extended scope of supply. Valmet’s technology is proven for dissolving pulp production with several references. The equipment for this project is tailored for high availability and energy efficiency resulting in low operating costs.

The fiber line features Valmet TwinRoll technology for high washing efficiency with low chemical and water consumption. The pulp drying and baling line secures flexibility and high-quality pulp with easy operation supported by Valmet Quality Control System. The evaporation plant features Valmet Tubel technology for high availability and produces clean condensate quality for 100% reuse in the mill. The white liquor plant includes causticizing and lime kiln and is designed for high reliability and less maintenance.
WHO’S DOIN’ ANYTHING? (CONTINUED)

The mill-wide automation system, Valmet DNA, offers unique integration with process solutions including process analyzers. In addition, the delivery includes Valmet Industrial Internet solutions for Operator Training Simulator for the whole plant as well as basic hardware for connectivity for Performance Center services.

Information about the customers Lenzing and Duratex

The Lenzing Group headquartered in Austria is an international company of wood-based cellulose fibers. These high quality fibers are used in the textile industry, in the nonwovens industry for hygiene products and are also used in work and protective wear and in industrial applications. Dissolving wood pulp is subsequently processed from the raw material wood and marketed under the brands TENCEL™ for textile applications, VEOCEL™ for nonwovens and LENZING™ for special fiber applications in other areas and other products. The annual turnover of the Lenzing Group is above EUR 2,000 million.

Duratex is the largest producer of industrialized wood panels in the southern hemisphere. The company has three business areas: Wood, Ceramic tiles and Sanitary ware, metals, electric showerheads and faucets. The Wood division covers wood products and forestry, producing eucalyptus in more than 251 thousand hectares of forests. Duratex’s head quarter is located in the city and state of São Paulo and it has seven forestry units and 16 industrial facilities in Brazil and three production facilities in Colombia.

VALMET

Corporate Communications

Valmet is the leading global developer and supplier of process technologies, automation and services for the pulp, paper and energy industries. We aim to become the global champion in serving our customers.

Valmet's strong technology offering includes pulp mills, tissue, board and paper production lines, as well as power plants for bioenergy production. Our advanced services and automation solutions improve the reliability and performance of our customers' processes and enhance the effective utilization of raw materials and energy.

Valmet's net sales in 2018 were approximately EUR 3.3 billion. Our more than 13,000 professionals around the world work close to our customers and are committed to moving our customers' performance forward - every day. Valmet's head office is in Espoo, Finland and its shares are listed on the Nasdaq Helsinki.

Emtec Electronic to showcase its measuring instruments for pulp, paper and board industry at ACOTEPAC 2020 in Cali, Colombia, from Feb. 12-14

LEIPZIG, Germany, Jan. 20, 2020 (Press Release) - From February 12th to 14th emtec presents its innovative measuring instruments for the pulp, paper and board industry at the ACOTEPAC conference (booth no. 56). The use of these devices enables a more efficient and reliable process and quality control from the wet end to the finished product and helps to achieve the best possible quality at the lowest possible costs.
WHO’S DOIN’ ANYTHING? (CONTINUED)

At the ACOTEPAC interested visitors can take a look at the Charge Analyzing System CAS touch! and the Fiber Potential Analyzer FPA touch!, two devices, which measure the particle charge and the surface charge of fibers. The easy handling, light weight and small size makes them an ideal partner. What the FPA touch! achieves with high accuracy in the laboratory, its “big brother”, the Fiber Potential Analyzer online FPO achieves directly in the production process, to which it is directly connected.

Up to four fully automatic measurements per hour are possible. The results can be provided online, but can also be transferred to the computer system of the mill. The permanent control allows an immediate reaction, in case it becomes necessary.

Together with our Colombian partner Alberto Marin, from Elof Hansson, our area manager, Daniel Ohndorf, will attend the conference of the Colombian papermakers once again in 2020. Besides the wet-end test devices CAS touch! and FPA touch!, the EST12 emtec Surface & Sizing Tester will be presented at the booth. By the help of the device, the surface sizing or more general the surface hydrophobia and the surface pore structure of paper and board can be evaluated. Both parameters have a big influence to the converting relevant quality characteristics printability, coatability and glueability.

About emtec Electronic

Emte supports the detection of relevant processing and quality properties of paper, board, nonwoven and textile materials. The mostly portable measuring devices enable manufacturers and converters of paper, nonwoven and textile products for example, to control and optimize manufacturing and converting processes during ongoing production. From the wet-end to the final product, the application of the devices enables an efficient process to achieve and ensure the best possible quality with the least possible effort.

For 25 years, we have relied on innovative, highly specialized measuring instruments combined with a high degree of customer service. Since the company was founded, we have been intensively involved in scientific cooperation with institutes and companies and the development of new instruments.

BTG to supply all specialty process measurements for JK Paper's Central Pulp Mill project in India

ECLEPENS, Switzerland, Jan. 20, 2020 (Press Release) - JK Paper, one of the largest pulp & paper producer in India has selected BTG to supply all the specialty process measurements in the planned relocation of pulp mill and the new board machine project at their Central Pulp mill, Songadh, Gujarat site.

“BTG and its innovative technologies combined with their strong local support have been known to us for decades. We are excited to embrace the latest fiber line measurements from BTG to help us produce best pulp quality for our paper and board machines at the Songadh site. We look forward to co-operating with BTG for broader success of our project” says Mr N.K Agarwal and S K Jain, JK Paper HQ.

“BTG are proud to be entrusted with this strategic project by JK Paper India, and are committed to delivering industry leading technology, superior application expertise and proactive local service capability. We look forward to supporting a flawless project execution and strengthening our long-term relationship with JK Paper” shares Keith Waters, General Manager, BTG Group, ASPAC.
**WHO’S DOIN’ ANYTHING? (CONTINUED)**

**UPM introduces new bio-boiler plant at its plywood mill in Joensuu, Finland**

LAHTI, Finland, Jan. 16, 2020 (Press Release) - The new bio-boiler plant has been put into operation at UPM Joensuu Plywood Mill. It replaces the combined heat and power plant which was built in 1962. The modern bio-boiler plant not only improves the mill's energy efficiency but also environmental performance, occupational safety and fire safety.

The boiler uses biofuel, i.e. by-products of plywood production, such as bark and wood chips. Thus, no additional trees are cut down to generate thermal energy.

The combustion technology based on the grate technology is more efficient than the technology of the old power plant, which means lower fuel consumption per heat output and thus lower emissions.

In order to minimize the environmental impact, the flue gases from combustion pass through the electrostatic precipitator and flue gas scrubber after heat recovery. The noise level of the bio-boiler plant is also lower than that of the old power plant.

The new bio-boiler plant will also improve the efficiency of the veneer drying line at the plywood mill. Thermal energy plays an important role in the multi-stage plywood production process. It is needed not only for veneer drying but also for hot pressing of plywood boards and for heating the log soaking pond.

In Joensuu, the plywood mill's bio-boiler plant also produces heat for the neighboring food industry.

**UPM Plywood** offers high quality WISA® plywood and veneer products for construction, vehicle flooring, LNG shipbuilding, parquet manufacturing and other industrial applications. In 2018 UPM Plywood sales was EUR 480 million and it had 2,400 employees. UPM has six plywood mills and one veneer mill in Finland as well as plywood mills in Russia and Estonia.

**UPM**

We deliver renewable and responsible solutions and innovate for a future beyond fossils across six business areas: UPM Biorefining, UPM Energy, UPM Raflatac, UPM Specialty Papers, UPM Communication Papers and UPM Plywood. We employ around 19,000 people worldwide and our annual sales are approximately EUR 10.5 billion. Our shares are listed on Nasdaq Helsinki Ltd. UPM Biofore – Beyond fossils.

**FPInnovations’ cellulose filament technology will be produced by Resolute Forest Products in Quebec**

MONTREAL, Jan. 15, 2020 (Press Release) - FPInnovations is pleased to announce that its cellulose filament production technology will once again be brought to a commercial scale following Resolute Forest Products' announcement of a $27.7 million investment in its Kénogami plant in Quebec. This confirms FPInnovations’ ability to provide tangible support to companies that innovate with wood, which ultimately allows the forest sector to diversify its traditional and non-traditional products and markets.

FPInnovations will partner with Resolute Forest Products to transfer knowledge of the technology, which was developed with contributions from industrial members, provincial governments and Canadian government funding from the Canadian Forest Service’s Transformative Technologies Program. This is the second time FPInnovations’ cellulose filament production technology has been commercialized.
Cellulose filaments, a biomaterial extracted from wood-pulp fibre, have unique properties that make them an outstanding reinforcing agent for use in a wide range of products and applications, including improving the properties of paper products. Cellulose filaments can be used as a reinforcing agent in materials used in industrial sectors such as transportation or as a rheological agent to modify the texture and behavior of paint.

Quotes

“FPInnovations, in collaboration with its members, plays a crucial role in developing and implementing innovations that directly impact the competitiveness and diversification of the forest sector. We are delighted with the commitment of governments and Resolute to this project, which demonstrates a common desire to promote the full potential of the forest sector bioeconomy.”

Stéphane Renou, President and Chief Executive Officer of FPInnovations

With the establishment of this plant, Resolute Forest Products is continuing to implement its diversification strategy and is solidifying its sustained interest in cellulose filament technology.”

Yves Laflamme, President and Chief Executive Officer of Resolute Forest Products

Valmet launches new microwave consistency measurement for pulp and paper makers

ESPOO, Finland, Jan. 15, 2020 (Press Release) - Valmet launches a completely redesigned Valmet Microwave Consistency Measurement – Valmet MCA (patent pending) for pulp and paper makers. Valmet MCA is now provided by digital electronics and the new Direct Sweep Detection measurement to offer higher performance measurement sensitivity and accuracy than competing analog designs.

A wider applicability with the new Twin Blade sensor

Valmet MCA’s new Twin Blade sensor complements the offering, along with the newly redesigned Flow Through sensor, by allowing paper and pulp makers to install it in larger pipe diameters. The Flow Through sensors are totally interchangeable with earlier installations.

With a wider applicability, the new Twin Blade sensor can also be used to measure unscreened pulp. The sensor’s completely redesigned clamp mounted probe is suitable for the much higher conductivity environment of chemical pulping.

“This new measurement technology is a leap forward in terms of performance and usability. For long Valmet has been the market leader in microwave consistency measurements with more than 6,000 deliveries. The new Valmet MCA now leads the way for all pulp and paper needs,” says Marko Heikkinen, Product Manager, Automation business line, Valmet.

The new and easy-to-use operating unit

Commissioning and operation have also been enhanced with the Valmet Bridge user interface, a new 7” touch screen control platform designed for use with Valmet process sensors and analyzers. With comprehensive diagnostics, Wi-Fi and Industrial Internet ready capabilities, Valmet Bridge user interface provides a user-friendly experience and intuitive access to transmitter operation and remote services from Valmet.
**WHO’S DOIN’ ANYTHING? (CONTINUED)**

The industrial standard in total consistency measurement

Valmet MCA measures total consistency of the pulp process stream independent of fiber length, freeness, wood species or blend. The measurement is not affected by flow rate, brightness or color and enables better control for more efficient production, improved quality and economic savings with fewer process upsets and less off grade product. With low lifetime costs, the sensor is simple to install and requires no regular maintenance to keep commissioning and running costs to a minimum.

**VALMET**

**Corporate Communications**

Valmet is the leading global developer and supplier of process technologies, automation and services for the pulp, paper and energy industries. We aim to become the global champion in serving our customers.

Valmet's strong technology offering includes pulp mills, tissue, board and paper production lines, as well as power plants for bioenergy production. Our advanced services and automation solutions improve the reliability and performance of our customers' processes and enhance the effective utilization of raw materials and energy.

Valmet's net sales in 2018 were approximately EUR 3.3 billion. Our more than 13,000 professionals around the world work close to our customers and are committed to moving our customers' performance forward - every day. Valmet's head office is in Espoo, Finland and its shares are listed on the Nasdaq Helsinki.

**BTG and Chuetsu Pulp & Paper reduce bleaching chemical costs by 10-15% by implementing MACSbleach project**

ECLEPENS, Switzerland, Jan. 14, 2020 (Press Release) - Chuetsu Pulp & Paper, one of the largest pulp & paper producer in Japan has selected BTG to support its journey to improve the bleaching process in two of its bleaching lines by implementing MACSbleach project to optimize the bleaching chemicals usage.

Thanks to BTG expertise and close customer interaction, the bleaching chemical costs have been reduced by 10-15% - twice the target at the beginning of the project. In parallel, the variability of the pulp brightness reduced by 20-50%, which in turn has helped stabilize overall bleached pulp quality inspite of incoming raw material and process disturbances.

This project was conceived early in 2019 with a target to improve pulp quality stability and to lower the bleaching costs at two of its hardwood pulp mills at Takaoka and Sendai. BTG solution involved combination of unique bleach plant measurements (e.g. Total Kappa, Lignin & HexA Kappa, Brightness) and model predictive controls MACSbleach to automate the process to be able to automatically respond to incoming variabilities and yet maintain a more stable pulp quality. Very close cooperation and proactive interaction between the BTG and Chuetsu project teams resulted in completing the implementation of the project in a record time and yet achieving all KPI’s.

A key success factor was the user friendliness of BTG MACSbleach interface which allowed operators to clearly visualize what happens in the different parts of the process in real time and transparent manner through dataPARC platform. BTG application experts provided due assistance through off-site and on-site interaction with the operators to constantly optimize the process.

“Thanks to their strong expertise in unique bleach plant measurements, advance process controls and application expertise combined with their unique customer interaction, BTG delivered solid benefits in bleaching process optimization project, which allows us to operate more efficiently and enhances our competitiveness. We look forward to co-operating further with BTG to introduce MACS to other process areas” says Mr Takado, General Manager, Chuetsu HQ.
WHO’S DOIN’ ANYTHING? (CONTINUED)

“BTG were honored to be selected by Chuetsu Pulp to execute Advanced Process Control projects at their Takaoka and Sendai fibrelines. The collaborative approach taken by the Chuetsu and BTG teams was key to delivering the projects on time and meeting performance guarantees. This project is the continuation of a long-term partnership with Chuetsu and we look forward to working with this valued customer in delivering future process improvement initiatives” shares Keith Waters, General Manager, BTG Group, ASPAC.

Ence inaugurates its new 50 MW biomass generation plant in Puertollano, Spain

MADRID, Spain, Jan. 9, 2020 (Press Release) - The President of the Board of Castilla-La Mancha, Emiliano García-Page, today opened in Puertollano the new renewable energy generation plant with low emission biomass of 50 MW of Ence in the town of La Mancha, in an act that has told with the presence of the Mayor of Puertollano, Isabel Rodríguez García, as well as the President of the company, Ignacio Colmenares, and the President of Honor, Juan Luis Arregui.

In his speech, Emiliano García-Page, stressed that “we are facing a project that is committed to the revitalization of a city that has been industrial capital, and has been especially linked to the energy sector. With its implementation, employment is created and the trauma that constituted the closure of Elcogás for this municipality is restored”. He also stressed that “the profitability of clean energy and the circular use of natural resources, such as that of this project, is enormous, and in Castilla-La Mancha we must take advantage of it.”

Ignacio Colmenares stressed in his speech that the project “constitutes an example of a contribution to the just energy transition thanks to the acquisition of Ence in 2017 of the site of the former Elcogás thermal power plant, for the construction of this new renewable biomass generation plant. A project that is in line with the National Integrated Energy and Climate Plan 2021-2030 and that has allowed us to maintain quality industrial employment, which contributes to the revitalization of the economy of the area and that favors the decarbonization of our energy system”.

The event was also attended by the Minister of Economy, Business and Employment, Patricia Franco Jiménez, the Minister of Sustainable Development, José Luis Escudero Palomo, and the President of the Diputación de Ciudad Real, José Manuel Caballero Serrano.

An example of just energy transition

The new 50 MW biomass generation plant is a clear example of a just energy transition, contributing very positively to the environment. In fact, it stands out for its high generation of direct, indirect and induced employment (about 27 jobs per installed MW). It will produce an estimated 325,000 MWh/year, equivalent to the energy needs of more than 60,000 people. To do this, it will consume around 238,000 tons/year of biomass, among which is pomace, vine shoots and shoots, olive leaf, and woody forest and agricultural remains.

All of this biomass will comply with the Decalogue of Ence for the Sustainability of Biomass as a Fuel, a pioneering initiative in the Spanish company launched to guarantee its commitment to sustainability in the use of biomass and the care of the environment in the use from this renewable energy source. In addition, the activity of the Puertollano plant will allow a strong reduction in the uncontrolled burning of agricultural stubble – which has a high environmental impact –, while contributing to the maintenance of more than 1,300 direct, indirect and indirect jobs. induced, most of them in rural areas. These jobs will be added to the 500 direct jobs generated by the plant during its construction.

Ence has made an investment of about €100 million in its new plant that has the Best Available Techniques to guarantee a permanent respect for the environment and the highest levels of energy efficiency in such an installation.

Willamette Falls Paper Company launches reHARVEST family product natural kraft paper from agricultural fiber

WEST LINN, OR, Jan. 7, 2020 (Press Release) - Willamette Falls Paper Company Inc. announces a new grade offering as part of the reHARVEST™ family of products. reHARVEST is now available as natural kraft paper. Initially, Willamette Falls paper will be producing natural kraft paper using a minimum of 30% agricultural fibers, in this case, wheat straw. Natural kraft paper uses include flexible packaging applications such as paper bags, pouches, and poly-coating basestocks.
WHO’S DOIN’ ANYTHING? (CONTINUED)

The reHARVEST natural kraft paper met typical bag strength tests and have been successfully converted and printed in trials. An additional benefit is that the bags offer a bright golden color with no fiber bleaching, a unique attribute of the straw fiber. The natural kraft paper is FDA compliant and will be available in 30# to 70# basis weights (49 to 114 GSM). Willamette Falls Paper has reconfigured the mill to dedicate one machine to brown grades and two machines to manufacture both high-bright coated and uncoated legacy grades. Commercial production of the natural kraft grades is estimated to start at the end of January.

“With so many states, like Oregon, working to reduce the use of plastic bags, we are excited to be able to offer a more sustainable choice in paper and packaging,” says Phil Harding, Director of Technology and Sustainability at Willamette Falls Paper Company. “Using straw pulp in our production – from an agricultural waste product – offers a unique opportunity to add an innovative solution for sustainable paper options. The mill has a long-term goal of developing natural kraft grades with up to 100% straw fiber.”

Package Containers, Inc. is proud to partner with Willamette Falls Paper Company converting the reHARVEST paper into their paper bag line. “We believe the reHARVEST paper can take our already industry-leading sustainability story to even greater heights,” said Dave DeMots, CEO of Package Containers, Inc. “Willamette Falls Paper has created a paper that not only meets industry needs but also breaks new ground using agricultural waste wheat straw as a fiber source. Retailers and consumers are asking for products that offer a lower environmental impact and this is a major step toward that objective.”

ABOUT AGRICULTURAL FIBERS & WASTE
Recent process technology developments have enabled the production of high-quality papermaking fibers from wheat straw agricultural waste. What was previously removed from the field as waste or even burned is now collected, pulped into high-quality papermaking fiber and available for use in paper products. The pulping is done at a recently commissioned wheat straw pulping plant that generates zero effluent and zero solid waste. The use of this agricultural fiber reduces field burning and reduces pressures on our managed forests. The wheat straw fiber has a lower carbon footprint and uses less energy than conventional wood pulping processes.

ABOUT WILLAMETTE FALLS PAPER COMPANY, INC.
Willamette Falls Paper Company is a newly formed company that owns and operates a mill in West Linn, Oregon. The company is a non-integrated mill, capable of making coated and uncoated grades with an annual capacity of 260,000 tons. The Willamette Falls Paper Company looks to be an innovative leader in environmental paper production, including the use of agricultural fibers as an alternative pulp source.

Metsä Board to invest Euro 20 million to modernize board machine finishing area at its Kyro mill in Kyroskoski, Finland

ESPOO, Finland, Dec. 20, 2019 (Press Release) - Metsä Board will modernise its board machine finishing area at Kyro mill in Kyroskoski. The rebuild includes a new reeler, winder and renewal of the reel broke handling system. Metsä Board’s Kyro mill produces high quality coated folding boxboard and the new eco-barrier paperboard. The investment value is EUR 20 million and the new machinery is scheduled to start up during autumn 2021. The annual production capacity of Metsä Board Kyro mill is 190,000 tonnes.
WHO’S DOIN’ ANYTHING? (CONTINUED)

Metsä Board is a leading European producer of premium fresh fibre paperboards including folding boxboards, food service boards and white kraftliners. Our lightweight paperboards are developed to provide better, safer and more sustainable solutions for consumer goods as well as retail-ready and food service applications. We work together with our customers on a global scale to innovate solutions for better consumer experiences with less environmental impact. The pure fresh fibres Metsä Board uses are a renewable resource, traceable to origin in sustainably managed northern forests. The global sales network of Metsä Board supports customers worldwide, including brand owners, retailers, converters and merchants. In 2018, the company’s sales totalled EUR 1.9 billion, and it has approximately 2,400 employees. Metsä Board, part of Metsä Group, is listed on the Nasdaq Helsinki.

Metsä Group
Metsä Group is a forerunner in sustainable bioeconomy utilising renewable wood from sustainably managed northern forests. Metsä Group focuses on wood supply and forest services, wood products, pulp, fresh fibre paperboards and tissue and greaseproof papers. In 2018, Metsä Group’s sales totalled EUR 5.7 billion, and it employs approximately 9,300 people. Metsälaitto Cooperative is the parent company of Metsä Group and is owned by approximately 103,000 Finnish forest owners.

ANDRITZ to supply pulp production technologies and key process equipment for Bracell’s Project “STAR” in Lençóis Paulista, Brazil

GRAZ, Austria, (Press Release) - International technology group ANDRITZ has received an order from Bracell to supply energy-efficient and environmentally friendly pulp production technologies and key process equipment for Bracell’s Project “STAR” in Lençóis Paulista, in the state of São Paulo, Brazil. Start-up is scheduled for the third quarter of 2021. Award of this contract to ANDRITZ was announced in July 2019, however the name of the customer remained confidential at that time. ANDRITZ will provide four of the six most important process islands in the pulp mill, which are to be supplied on EPCC (Engineering, Procurement, Construction and Civil Construction) basis:

A complete Wood Processing Plant using ANDRITZ’s proven technologies and including chipping lines, stacker-reclaimer, chip screening, biomass handling with ANDRITZ BioCrushers, and biomass storage. Each chipping line for eucalyptus processing consists of ANDRITZ’s unique horizontally fed HHQ-Chipper (EXL model), ensuring high capacity without compromising on chip quality. Woodyard operation is enhanced with state-of-the-art ANDRITZ IIoT products, including ChipperEKG, stone detection, the ScanChip chip analyzer and a FlowScanner, which measures the density and moisture content of the chips to optimize the fiberline process.

An ANDRITZ HERB Recovery Boiler with high steam parameters of 101 bar(a) and 515°C to maximize power generation. The HERB Recovery Boiler features energy-efficient flue gas cooling and feed water preheating technologies to maximize steam production for power generation. It is designed for extended operating periods without requiring wash water. At the beginning of December 2019, ANDRITZ successfully completed assembly of the first Recovery Boiler column.

Environmentally friendly fertilizer Fibers Lines that ensure low-effluent emissions, can produce both kraft and dissolving pulp, and which also include a chip feed system, LoSolids continuous cooking system with Pre-Hydrolysis Vessel (PHV), screen room and bleaching plant, as well as ANDRITZ’s DD-Washer technology, ensuring low operating costs, low emissions, extremely high washing efficiency, and excellent fiber quality. The cooking plant for the fiberline is state of the art in the continuous cooking process for production of dissolving pulp.

A new innovative EvoDry Pulp Drying System with energy-efficient pulp drying based on the high-capacity Twin Wire Former technology, with airborne dryers, cutter-layboy and baling lines. The approach flow with cleaner systems ensures homogeneous pulp feed to the subsequent process stage for both types of pulps – dissolving and kraft. The pulp dewatering machine comprises a headbox with dilution control, a Twin Wire Former, and a press section with one combi-press and two shoe presses. The ANDRITZ technology for pulp drying is very well proven across the world. In addition, the ANDRITZ EvoDry sheet dryer is the most energy-efficient of its kind. Finally, the reliable ANDRITZ cutter-layboy provides the pulp bales to be further processed in the high-capacity baling lines, where the final pulp bale units are produced.

Oregon stores begin to prepare for state’s plastic bag ban

PORTLAND, OR, Dec. 26, 2019 (Oregon Public Broadcasting) - Oregon’s statewide plastic bag ban takes effect on Jan. 1, and some cities around the state have already begun to make changes.

Chester’s Thriftway in John Day has already stopped providing plastic bags for its customers. “We quit ordering roughly about two weeks ago and we have transitioned to using only paper bags and offering our customers the option to purchase reusable bags,” store manager Robert Hunt said.

Oregon Public Broadcasting - Stores Around The State Begin To Prepare For Oregon’s Plastic Bag Ban
WHO’S DOIN’ ANYTHING? (CONTINUED)

‘Pinyapel’ a new treeless paper made from discarded pineapple leaves in Philippines

HONG KONG, Dec. 26, 2019 (Local News) - Developed by the Design Center of the Philippines, Pinyapel is a specialty paper made from pineapple leaves that would otherwise go to waste, which can be used to make a number of products from coffee cups to paper shopping bags. It has recently won the 2019 Wood Pencil award by the UK-based charity D&AD Future Impact for efforts in sustainability, marking the Philippines’ first award in the category.

Pinyapel, the 100% natural treeless pineapple leaf paper created by the Design Center of the Philippines in collaboration with Cagayan de Oro Handmade Papercraft, Nature’s Fresh and IdeaTechs Packaging, aims to solve two problems at once: agricultural waste and deforestation. It reuses discarded leaves from the locally abundant fruit pineapple, to make a specialty paper that can be used in various products, such as coffee cups, paper bags, boxes and packaging. With the Philippines being the second biggest pineapple producer globally, Pinyapel not only helps reduce waste in agriculture and deforestation associated with paper made from trees, it also helps local pineapple farmers in the country as it gives the leaves a new purpose and value, driving additional revenue.

Green Queen - Pinyapel Is a New Filipino Treeless Paper Made From Discarded Pineapple Leaves

Suzano to invest R$933.4 million in three projects in Espírito Santo state including tissue converting

ARACRUZ, Brazil, Dec. 19, 2019 (Business Wire) - Suzano announced investments of R$933.4 million in three projects in Espírito Santo state. The company’s plans include the construction of a tissue paper conversion unit, retrofit work in the unit located in Aracruz, as well as expansion of Suzano’s forest base in the state.

The three projects should create nearly 900 jobs during the construction phase, which will be possible through the use of ICMS tax credits accrued by Suzano due to its essentially exporting activities in the state. With these investments, Suzano aims to strengthen its relationship with Espírito Santo and maximize its contribution to the region’s development.

The paper conversion unit will require investments of R$130 million. This specific project will create around 300 direct and indirect jobs during the construction phase and 200 direct and indirect jobs when the unit is operational, besides stimulating chain of raw material suppliers in the region. Production should start in the fourth quarter of 2020.

The plant’s annual capacity will be 30,000 tons of tissue converted to finished products. The unit will produce two-ply or three-ply toilet paper for the brands Mimmo, the market leader in Espírito Santo, and Max Pure. The raw material for this unit will be produced by the Mucuri Unit (Bahia state).

With investments estimated at R$272.4 million, the retrofit work at the Aracruz Unit will increase the plant’s energy efficiency. The project will be executed in 24 months and approximately 300 jobs will be created during this period. With this investment, the plant will be more efficient, modern and competitive and with lower environmental impact.

Suzano also announced the expansion of its forest base in the state, which is strategic for the company. The purpose is to reduce the average supply radius between the forest plantations and the plant, which will bring environmental benefits caused by fewer vehicles carrying wood over long distances.

The company plans to invest R$531 million in this project via acquisition or lease of rural areas, plantations, trellis systems and crop treatment. The initiative should create 300 direct and indirect jobs in the first two years after the licenses are obtained and will also stimulate the supplier chain in the region and tax collections.

The investments announced are already included in Suzano’s investment plan of R$4.4 billion for 2020, announced by the company last week.
**WHO’S Doin’ ANYTHING? (CONTINUED)**

PMP to supply four new Intellitissue EcoEc 1800 Premium machines to APP’s Oki mill in Indonesia

JELENIA GORA, Poland, Dec. 7, 2019 (Press Release) - PMP (Paper Machinery Producer) has recently signed another contract for a delivery of (4) new Intellitissue® 1800 EcoEc Premium machines for APP, this time for Oki mill in Indonesia.

PMP is perceived by APP as a strategic partner in dynamic development and tissue market expansion. A partnership between both companies has become stronger due to a project for (18) Intellitissue® 1600 EcoEc Premium lines for Rudong, China that will bring 620 000 t/a of high quality tissue.

PMP Intellitissue® EcoEc Premium technology corresponds well with a Sustainable Development Strategy of APP and guarantees achieving ultra low media consumption (total energy usage: steam & electricity as low as 1.74 MWh/t), while keeping premium quality of final product. PMP machines ensure efficiency higher than 95% which is in line with APP requirements.

PMP scope of supply for OKI mill include 4 new complete PMP Intellitissue® EcoEc Premium machines with core technological components such as PMP Intellitjet V® Hydraulic Headbox, Intelliformer® Crescent Former, Intellipress® and Steel Yankee Dryer with Steam heated Hood. Scope of delivery also includes mechanical drives, steam and condensate system, dust removal system, mist removal system, lubrication system, design, erection, start-up & supervision.

This contract is going to be executed by two PMP Group divisions: PMPoland (Poland) and PM IB (China) to provide Optimum Costs Solutions as well as excellent communication platform.

Australian university researchers - Packaging made from banana plants ‘an a-peeling alternative’ to plastic

SYDNEY, Nov. 29, 2019 (Press Release) - Two researchers at UNSW Sydney have discovered a novel way to turn banana plantation waste into packaging material that is not only biodegradable, but also recyclable.

Associate Professor Jayashree Arcot and Professor Martina Stenzel were looking for ways to convert agricultural waste into something that could value add to the industry it came from while potentially solving problems for another.

A good contender was the banana growing industry which, according to A/Prof Arcot, produces large amounts of organic waste, with only 12% of the plant being used (the fruit) while the rest is discarded after harvest.

“What makes the banana growing business particularly wasteful compared to other fruit crops is the fact that the plant dies after each harvest,” said A/Prof Arcot, UNSW School of Chemical Engineering.

“We were particularly interested in the pseudostems – basically the layered, fleshy trunk of the plant which is cut down after each harvest and mostly discarded on the field. Some of it is used for textiles, some as compost, but other than that, it’s a huge waste.”

Source: University of New South Wales Sydney
WHO’S DOIN’ ANYTHING? (CONTINUED)

A/Prof Arcot and Prof Stenzel (UNSW School of Chemistry) wondered whether the pseudostems would be valuable sources of cellulose – an important structural component of plant cell walls – that could be used in packaging, paper products, textiles and even medical applications such as wound healing and drug delivery.

Using a reliable supply of pseudostem material from banana plants grown at the Royal Botanic Garden Sydney, the duo set to work in extracting cellulose to test its suitability as a packaging alternative.

“The pseudostem is 90 per cent water, so the solid material ends up reducing down to about 10%,” A/Prof Arcot said. “We bring the pseudostem into the lab and chop it into pieces, dry it at very low temperatures in a drying oven, and then mill it into a very fine powder.”

Prof Stenzel continued:

“We then take this powder and wash it with a very soft chemical treatment. This isolates what we call nano-cellulose which is a material of high value with a whole range of applications. One of those applications that interested us greatly was packaging, particularly single-use food packaging where so much ends up in landfill.”

When processed, the material has a consistency similar to baking paper.

A/Prof Arcot said depending on the intended thickness, the material could be used in a number of different formats in food packaging: “There are some options at this point, we could make a shopping bag, for example,” she said.

“Or depending on how we pour the material and how thick we make it, we could make the trays that you see for meat and fruit. Except of course, instead of being foam, it is a material that is completely non-toxic, biodegradable and recyclable.”

A/Prof Arcot said she and Prof Stenzel have confirmed in tests that the material breaks down organically after putting ‘films’ of the cellulose material in soil for six months. The results showed that the sheets of cellulose were well on the way to disintegrating in the soil samples.

“The material is also recyclable. One of our PhD students proved that we can recycle this for three times without any change in properties,” Professor Arcot said.

Tests with food have proved that it poses no contamination risks.

“We tested the material with food samples to see whether there was any leaching into the cells,” Professor Stenzel said. “We didn’t see any of that. I also tested it on mammalian cells, cancer cells, T-cells and it’s all non-toxic to them. So if the T-cells are happy – because they’re usually sensitive to anything that’s toxic – then it’s very benign.”

Other uses of agricultural waste that the duo have looked at are in the cotton industry and rice growing industry – they have extracted cellulose from both waste cotton gathered from cotton gins and rice paddy husks.

“In theory you can get nano-cellulose from every plant, it’s just that some plants are better than others in that they have higher cellulose content,” Prof Stenzel said.

“What makes bananas so attractive in addition to the quality of the cellulose content is the fact that they are an annual plant,” A/Prof Arcot added.

The researchers say that for the banana pseudostem to be a realistic alternative to plastic bags and food packaging, it would make sense for the banana industry to start processing of the pseudostems into powder which they could then sell to packaging suppliers.

“If the banana industry can come on board, and they say to their farmers or growers that there’s a lot of value in using those pseudostems to make into a powder which you could then sell, that’s a much better option for them as well as for us,” Prof Arcot said.

And at the other end of the supply chain, if packaging manufacturers updated their machines to be able to fabricate the nano-cellulose film into bags and other food packaging materials, then banana pseudostems stand a real chance of making food packaging much more sustainable.

“What we’re really wanting at this stage is an industry partner who can look into how this could be upscaled and how cheap we can make it,” Prof Stenzel said.

A/Prof Arcot agreed. “I think the packaging companies would be more willing to have a go at this material, if they knew the material was available readily.”

PulpEye analyser successfully in operation at Millar Western’s Whitecourt mill in Alberta

DOMSJÖ, Sweden, Nov. 25, 2019 (Press Release) - The Canadian BCTMP and lumber producer Millar Western has installed a PulpEye system to its Whitecourt pulp mill. The delivery consists of analyser modules for CSF, fibre dimensions, shives, brightness and crill. This is the ninth PulpEye installation in Canada showing that PulpEye technology is well established in the Canadian pulp industry.

Millar Western’s Whitecourt pulp mill began production in 1988. Originally designed to produce 210,000 air-dried metric tonnes (ADMT) of BCTMP per year, the mill’s capacity today stands at 320,000 ADMT. The pulp mill produces BCTMP pulps using hardwood as well as softwood as raw material.
**WHO’S DOIN’ ANYTHING? (CONTINUED)**

The Whitecourt mill is a flexible and efficient BCTMP mill producing more than twenty different pulp grades for use in products such as fine printing and writing papers, paperboard, specialty papers, tissue and toweling. It is therefore important to efficiently know and control the pulp quality at any time during production to make sure that the pulp customers get the right pulp for their applications.

“Canada is an important market to us as it is one of the biggest pulp and paper producing countries in the world,” says Lars Norin, PulpEye Canada Inc. “We are proud that Millar Western has chosen PulpEye for their online pulp quality control. It is successfully installed and in operation.”

“Research studies have shown that crill is the single variable having the strongest connection to paper or board strength. The more crill there are on and around the fibres, the stronger the paper or board will be. By measuring the amount of crill it is possible to pre-calculate the strength of paper and board and hence define the refining needed to optimise the amount of crill,” Lars Norin finishes.

PulpEye is a Swedish innovative measurement technology company, focusing on online applications and services in the pulp and paper industry, with the whole world as its market. The main product is the PulpEye pulp analyzer. Its offices are located in Örnsköldsvik, Sundsvall, Västerås (Sweden) and in Ottawa and Vancouver (Canada).

**Bio-Pappel’s McKinley targets mid-January to open Port Angeles, WA, mill after conversion to containerboard**

PORT ANGELES, WA, Nov. 20, 2019 (Peninsula Daily News) - McKinley Paper Co. is targeting mid-January for beginning production at its 99-year-old Ediz Hook plant with about 100 workers after nearly three years of industrial dormancy at the site and lost revenue for the city of Port Angeles.

If that time line holds, city government can expect once again to receive about $330,000 annually in utility and electricity fees — although city officials are not including the revenue in the proposed 2020 budget the City Council will discuss tonight at 6 p.m. at city hall.

General Manager Edward Bortz said Monday there is some doubt McKinley can be definite about a specific date in anticipating the plant will open in about eight weeks, but is confident it will happen around that time.

Peninsula Daily News - McKinley sets new date to open Port Angeles plant

**Valmet to deliver new lime kiln and fiberline upgrade at SCA’s Obbola pulp production mill in Sweden**

ESPOO, Finland, Nov. 19, 2019 (Press Release) - Valmet will deliver key technology for upgrading the SCA Obbola mill’s pulp production in Sweden. Valmet’s delivery includes a new fossil free lime kiln and upgrade of the existing fiberline. The pulp production upgrades will happen in stages. The upgraded fiberline will start up in June 2021 and the new lime kiln is scheduled to start up during the last quarter of 2021.

The order is included in Valmet’s orders received of the fourth quarter 2019. The value of the order will not be disclosed. A project of this size and scope is typically valued at around EUR 50 million.

Valmet’s delivery is part of SCA’s major investment to increase the annual production of kraftliner in Obbola mill from the current 450,000 tonnes to 725,000 tonnes per year. The total investment amounts to SEK 7.5 billion (about EUR 700 million) over a five-year period.

“With the investment in Obbola mill, we can meet the increased demand for sustainable packaging. We selected Valmet to deliver new technology for our pulp mill upgrade as we have had good experiences of Valmet technology at both our Obbola mill and other SCA mills,” tells Per Strand, Project Director from SCA.

“This order strengthens our cooperation with SCA. Delivering fossil fuel free lime kiln solution is very much aligned with the strategies of both our companies. SCA valued our technical leadership in lime kilns as well as robust and reliable solutions both for the lime kiln and fiberline,” says Bertel Karlstedt, Pulp and Energy Business Line President, Valmet.

**Technical details about Valmet’s delivery**

The new lime kiln system delivered by Valmet replaces two old oil fueled lime kilns and will have a daily capacity of 220 tonnes burned lime. The solution includes OptiDisc Lime Mud Filter, Flash Dryer for lime mud drying, high efficiency Rotary Cooler and a full Wood Powder Firing System for the lime kiln, including storage and grinding of wood pellets. This solution makes the lime kiln 100 percent fossil free. SCA also operates a wood powder fired lime kiln delivered by Valmet at its Munksund mill.

The fiberline upgrade includes a new hot stock refining after the digester using Conflo refiners. The brown stock washing will be improved by adding a new TwinRoll press as last washing stage before the storage towers for the paper machine. As a result of the fiber line upgrade the daily capacity will increase from today’s 850 air dry tons to 1,100 air dry tons. The capacity increase is done with improved washing with the same water consumption.

**Information about the customer SCA**
WHO’S DOIN’ ANYTHING? (CONTINUED)

SCA offers paper for packaging and print, pulp, wood products, renewable energy, services for forest owners and efficient transport solutions. In 2018 SCA had approximately 4,000 employees and sales amounted to approximately EUR 1.8 bn. SCA was founded in 1929 and has four pulp and paper mills in Sweden. In September 2019 SCA announced its plan to build a new paper machine for the production of kraftliner at its Obbola paper mill in Umeå.

VALMET

Corporate Communications
Valmet is the leading global developer and supplier of process technologies, automation and services for the pulp, paper and energy industries. We aim to become the global champion in serving our customers.
Valmet's strong technology offering includes pulp mills, tissue, board and paper production lines, as well as power plants for bioenergy production. Our advanced services and automation solutions improve the reliability and performance of our customers' processes and enhance the effective utilization of raw materials and energy.
Valmet's net sales in 2018 were approximately EUR 3.3 billion. Our more than 13,000 professionals around the world work close to our customers and are committed to moving our customers' performance forward - every day. Valmet's head office is in Espoo, Finland and its shares are listed on the Nasdaq Helsinki.
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2020 ISA Pulp & Paper Industry Division Calendar
DIRECTOR’S MESSAGE  BY RONALDO NEVES RIBEIRO,

The Pulp and Paper Sector has remained sustainable in recent years and still with growth forecasts, this is evidenced by the constant emergence of new factories in the southern hemisphere. These forecasts have enabled the use of new technologies, both in processes and in automation and information. To improve the performance of industrial plants, especially the Pulp and Paper (P&P) sector.

ISA has acted strongly in supporting standards and training of people supporting technological development, the P&P sector has benefited from these actions. I highlight the cybersecurity certifications and themes related to Industry 4.0, in which ISA has expertise to support new projects and professionals so that they have better efficiency in their day-to-day activities.

ISA PUPID’s Board of Directors is the link between the Pulp and Paper sector and ISA, with the task of reducing the distance between the Instrumentation, Automation and Control professionals in the Pulp and Paper (P&P) sector to market innovations and also normative updates of the Sector. Be part of ISA PUPID's Board of Directors and be one of the professionals interested in innovation content and relationships with peers within the sector in which it operates.
TECHNICAL PAPER

pH in the BP Why It's Important - Part 1

Doug Reid

Originally presented on Tuesday, February 4 \at the 2020 PaperWeek conference
at The Fairmont The Queen Elizabeth Hotel
in Montreal, Quebec, Canada
**Links to Related Websites**

- **ISA Pulp & Paper Website**  

- **ISA Pulp & Paper Technical Discussion Forum**  

- **ISA Technical Conference Session Schedule**  

- **Pulp & Paper Research Institute of Canada**  
  [http://www.paprican.ca/](http://www.paprican.ca/)

- **TAPPI**  

- **PIMA**  

- **American Forest and Paper Association**  

- **National Society of Professional Engineers**  

- **Swedish Royal Institute of Technology**  
  [http://www.pmt.kth.se](http://www.pmt.kth.se)

- **Helsinki University of Technology**  

- **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 Listserv**  

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**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/](http://www.isa.org/pupid/), select "Link to the PUPID email LISTSERV" in the pick box, click "Join", and enter you email address and a password.

**ISA Member Benefits**

ISA members receive benefits such as the Latest Technical Information, Professional Development Resources, Networking Opportunities, Special Bonus for Student Members, Insurance Program for Independent Contractors and Business Owners, and other personal privileges. Go to [http://www.isa.org/membership/membership-benefits/](http://www.isa.org/membership/membership-benefits/) to see specific benefits.

**ISA PUPID Calendar**

Get a quick overview of ISA PUPID events by going to the Calendar at:  
[https://www.isa.org/division/pupid/events/](https://www.isa.org/division/pupid/events/)
World Corners

Canada Corner
Nothing from anyone there this time!

Central & South American Corner

Far East Corner
Nothing from anyone there this time!

European Corner
Nothing from anyone there this time!

From The Land Of The Midnight Sun
Nothing from anyone there this time!

Letters To The Editor

• Send your comments on this newsletter to me at brad.carlberg@bsc-engineering.com or post a message to the ISA PUPID Technical Discussion Forum List Serve & “get something started”!

 Isa Conferences / Symposia

Mar 29
AlChE Spring Meeting and 16th Global Congress on Process Safety
Sunday, 29 Mar 2020

Apr 14
2020 ISA IIoT & Smart Manufacturing Conference
Tuesday, 14 Apr 2020
CCST Answer

The correct answer is B, "ISO 9000." ISO 9000 is a family of international quality management systems standards designed to help organizations ensure that they meet the needs of customers and other stakeholders while meeting statutory and regulatory requirements related to a product or service. In short, this standard verifies that a company has a set of written procedures for manufacturing its product or service, that it follows these procedures 100 percent of the time, and that it documents that these procedures have been followed.

ISA12 is a group of standards relating to electrical equipment in hazardous (classified) locations. NFPA: 70-84 is the National Electrical Code (NEC). CENELEC is the European Community for Electrotechnical Standardization electrical standard.


CAP Answer

The correct answer is D, "justification analysis." In an instrument commissioning testing matrix, activities are listed that are involved in the verification that the instrument installation is properly received and installed according to the specifications. First, a receipt verification is performed to verify that the instrument received is the correct item, including vendor, model number, size, and process connection type.

The item is then typically bench calibrated and installed in the process according to the piping and instrumentation drawings and installation drawings, including loop drawings. When construction is complete, loop checks are performed. During initial startup, loop tuning is performed, and all instrument readings are verified for consistency and reasonableness. Any deviating instruments may be recalibrated in the field.

Justification analysis was not included in the above discussion. Justification is typically performed during the feasibility phase of a project, or in the case of late scope additions, before purchase in the detailed design phase.

SOLUTION TO THE TUNING TIP
FROM
SECURITY AND THE CONNECTED ENTERPRISE
BY ERIC BYRES, P.ENG., ISA FELLOW TOFINO SECURITY, A BELDEN BRAND

ORIGINALLY PRESENTED AT ISA AUTOMATION WEEK 2013
NASHVILLE, TENNESSEE • RENAISSANCE NASHVILLE, USA
NOVEMBER 4-7, 2013

On slides 22 – 26, Eric Byres introduces the Suggested Process for Deploying Zones and Conduits, then describes how to use zones in an example of an oil refinery; including specifying the zones and describing zone attributes and finally defining the data flow between zones.
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Vacant

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