Company Update and Opportunities Roundtable

2019-05-14

MILL UPDATES

John O'Donnell – Domtar Corp

They are focusing 100 M$+ investment in Espanola. Plymouth is focusing on Energy and bleaching. Across the board, Domtar is focusing on bleaching and chemical usage due to increasing chemical prices (Caustic). They are using a lean six sigma approach to this.

Daniel Brouillette – Valmet

GL&V has been transferred into Valmet as a block.

Shree-Prakash Mishra – FPInnovation

They have a New President and are changing their business model.

David Ivany – Resolute Thunder Bay.

Safety focus – safest mill in Canada for mid-size (man-hours) category

Projects: Kraft mill, campaign SWD 6 days – 5 days HWD. 7-4 campaign in winter

Looking at two production increase, first phase debottlenecking digester, bleach plant, machine then phase two: 100 tpd increasing involving more capital over the next 2 to 4 years. Washers have old drum washers, need new air doctors and showers to be installed later this year. They are also looking into getting MPC bleaching controls.

Michael Kjerulf – Nalco Water

Ecolab / Nalco Water acquired Georgia-Pacific Paper Chemicals Business. Working with Enzyme company in Europe, applications are more on paper side. Hoping to see bleaching activities.

Safety: improved record. 90% of incidents motor vehicle related, most incidents the Nalco employee was not at fault. Have an app on phones giving a rating/feedback on how employee drives to improve behaviors

Phil Sekerak – ERCO Worldwide

Safety focused as well. They recently went 350 days without an OSHA incident, a record for the company.

Denise Levesque – Twin Rivers Paper

2018: acquired Pine Bluff, surpassed objective for production and they are focusing on increasing production to 800tpd.

Bob Duncan – Process Eng retired after 40 years at the mill.

Mike Fergusson – Evergreen Packaging – Canton

Looking into Bleach Plant and recaust controls for Canton facility.

They are focusing on basic care routes and improving their operator routes.

Gary Hopkins – Conmark

Doing two variability studies. Using Sensor Maps as a tool to look at where a facility could install new instruments.

Michael Doucet – BTG

Increasing process control business due to better alignment with BTG (Have almost doubled the size of the MACS team in the past year). Working on several fibreline projects.

Ross Anderson – Arkema

The current standard for peroxide storage is to use stainless steel tanks instead of the former aluminium. FM Global insurance, has good data sheet of do's and don'ts around H2O2 safety. Acceptable material constructions listing only some specific Al types. They will be adjusting their data sheet to reflect current state of the art. It is important to have a look at the current standards when building a new tank, standards change overtime.

Otis Hill – Evergreen Packaging – Pine Bluff

Working on advanced controls for Bleach Plant (Caustic reduction is a priority). Struggling with some Safety Issues. TIR almost 27 some areas reached multiple years without recordables. Bleach pant/ brownstock have recently reached 9 years without an OSHA incident, so they know that improvement is achievable.

Marc Caruth – Mercer – Celgar

Mercer acquired DMI and half of Cariboo. At Celgar-Castlegar, Doing work on pulp machine and the bale line in order to increase their production. Looking into getting new Bleach plant controls, moving press process location from post to pre brownstock HI-D.

Richard Headly – Hargrove Engineering

Expanding quickly and they are up to 3000 employees. They are opening an office in the midwest and the westcoast. 30 to 41% of their business is currently in the pulp and paper industry, and they are looking to grow that business.

Michael Wang – Solenis

Solenis merged with BASF??, have whole portfolio now to cover all areas of the mills (Pulp and paper through to packaging). They now have about 6000 employees.

Mr. Kecheng Li – Western Michigan University

Largest and oldest active Paper program, program in Paper Eng, Paper related research, coating, recycling, huge facilities on campus.

They have a pilot for recycling, paper machine, and cooking.

Bobby Manzoor – Verso Corporate

Looking at bleach plants, and optimising O2 delign systems, 4 kraft mills, 3 O2 systems, will look for assistance. Looking at kappa analysers. Expecting delivery of one this week. Important to have the right instrumentation. Would like to hear more on Eop.

Brian LaBrash – Verso Quinnesec

The mill in Luke is closing in June of this year. Replacing Johnson screen and rebuilt a Chlorate storage tank. Installing an exothermic heather to continuously heat the chlorate in their new chlorate tank.

James Goldman – Valmet Automation

Focus on Internet 4.0/ Internet of Things. They are doing lots of modeling of wet end pulp.

Alison Rowat – International Paper (Technology)

Many mills to keep up with in large IP organisation. Many outages done, safely. 12 day audits are done in select mills and areas to make sure capital will be spent adequately. Last fall moved focus to cost reduction rather than capital spending. Starting to install more pH measurement of Extraction and O2 filtrates, low cost cooler installed, pH probe life and accuracy improved (idea is to reduce caustic usage).

Honey Nampak – Harmac Pacific

Coming out of shutdown. Long start-up. Preparing for wash press installation, the unit is arriving in August. Working on configuration. Replacing older kappa analysers. Redistributing work area – responsibilities for operators. Not cutting positions, just re-adjusting jobs. Bleach plant op will now start in the bleach plant instead of the screen room due to a new automation in their screen room. They are also having to change up the design of the control room because of the new screen room controls. During shutdown they finally took out their wooden Headbox.

George Alexis – Howe Sound – Paper Excellence

New O2 delignification/evaporator systems, struggled at beginning, okay now. Made a record for highest day production last week. They are also having good results from their new bleaching controls. Mills recently acquired: Port Alberni, Crofton and Powell River (Catalyst Paper).

Laurier Morrissette – TEXO: Chips analyser still being developed/ improved Installation at LA Tuque. Completing a few bleaching and digester controls projects.

Rohan Bandekar – Noram Engineering : Last September completed a system at Irving. Potassium system in Europe and USA.

OPPORTUNITIES

David Ivany – Resolute Thunder Bay

Lack of ClO2 storage. Need to add containment, suppression.

Honey says Harmac has a brand new one, based on Crofton design. Dave can come and visit their newly installed on if he wishes.

Jim Colins said that there was a presentation on the one in Crofton.

Dave adds: Need to be designed for cold weather, suppression system has to be able to deal with cold weather. Gerry Ferwada was at Crofton now at Castlegar can be a reference.

Bobby Manzoor. Containment, they were leaving valve cracked opened (If the dyke was ever to fill with ClO2, the vapor would then gas out the building). Dike went to sewer that went to alkaline sewer and treated there.

Doug Reid: Skookumchuck did a system for cold weather (involving foam suppression) and might have published paper. Reference Gavin Baxter

Brian LaBrash: what triggered focus? *Thunder Bay has nothing in place now, risk was identified.*

Honey: WorkSafe BC has that on their list. More and more mills will have to do it.

Phil Sekerak – ERCO Worldwide

Customer has high turbidity in their water due to seasonal run-off, causing brightness issues? Does anyone have a solution to this?

Honey tested some demo system for turbidity, systems where not large enough.

Brian LaBrash: What are they using for water source for brightness measurements? The high turbidity water could be impacting their measurement.

Ross Anderson: metals in water degrading H2O2. The issue is more with the showers on the last stages and possibly pulp machine. *About 5000 lpm*

Booby M: They need to fix the water plant.

Denise Levesque- Twin Rivers:

They are having frequent puffs from their solvey ClO2 Generator in the summer. PSM investigation thinks that it is related to dirt. Cleaning acid tanks. 77 occurrences.

Alexis Paper Exc. Usually not problem unless contaminants, or hot spots

Laurier, says temperature control has to be tight.

Phil from ERCO said to focus on water used to dissolve chlorate. Use demineralized water if there is capacity.

Jim asked about the metallurgy of the acid storage tanks, some old units used carbon steel which was troublesome. *They use fibreglass lined tank*

Carlos from Arkema has some experience with these systems, is it seasonal, chiller capacity? *Foam issues in generator, more foam in summer. Adding lots of defoamer (TBP).* Discussions – sounds like a water issue.

Jim Collins mentions high amount of air coming in. He also mentioned that if the air quality is poor, then they may need to change their air filters more often.

Laurier: Concentration of peroxide 50%: a small change in concentration makes a big difference.

Laurier explains operation of Solvay ClO2 system.

Michael Doucet: had similar issue, ERCO came to help (R8 generator) discussion on vacuum. Operators would cut back on steam to preserve vacuum at higher rates, and then they would puff due to too high of a concentration of ClO2 in the gas phase.

Michael Ferguson Evergreen Packaging

NC State Pressure Screens are now considered pressure vessels. Has anyone else encountered this?

Mona Henderson: pressure vessel or not, check-out during construction. She has encountered multiple contractors trying to drill into the side of a pressure vessel. Make sure that you always bring it up with your contractors to ensure that they follow proper pressure vessel procedures.

Marc Carruth Mercer Castlegar.

Ways to clean atmospheric diffusers screen plates – Environmental issues with using Chelant wash. It has been 5 years since their last chelant wash. They pressure cleaned them last year, but they are scaled up again

Michael from Nalco said that chelant washes are the best you can do, try to use clean water to have better results.

Phil from ERCO: Acid wash and chelant wash, but it is difficult.

Laurier asks why they stop chemical wash. Issue is with accumulation of chelant in system, env. department found build up is too high.

Mona adds that is not only volume that matters but temperature and time.

M Kjerulf confirms 8-10 hrs needed and the higher the temp the more efficient the cleaning is.

Bobby from verso suggests looking at the cost comparison between a continuous scale control program, and chelant washes. Scale issues are more challenging with diffusers than other types of washers.

Ross adds that pH is also important and sweet spot varies with chelant type. Maybe there are other newer options (look in Europe) for product that are more environement friendly and less expensive.

Brian from Verso adds that they should think about their window of opportunity to do an effective chelant wash. If they need to wait for an outage to do it, they may not have steam available to heat the water. Then you are into renting heater/generators.

Bobby Manzoor - Verso:

He wanted to know more about chips analysers.

Laurier: Real time measurement of what's on the belt, compensated color IR, analyses moisture, percent bark, brightness, sizing, volume and mass rate for dry bulk density. Used to control digester more accurately. Presentation from Edmundston bleach committee on PAPTAC site for feeding batch and continuous and also adjustment for sawdust operation. Castlegar also presented on topic maybe at Alpac and also at PacWest. He can send the presentations, there are several.

Bobby Manzoor - Verso:

Eop pH probe Cooler info:

referred Jessica's presentation.

Brian LaBrash:

Has anyone tried to deal with scale in shower bars? Has anyone used filters? Is it worth trying?

Mike Kjerulf. Installed an in-line strainer/static mixer, put anti-scale program and added in hi-shear area. The static mixer causes that localizer point to be the only area that would need to be cleaned often, instead of the whole shower bar.

Brian explains pieces are coming from tank. D1 – D2 stage filtrate goes to multiple showers.

Doug Reid: Peace River did a lot of work – Guy Normandeau has a paper on it.

Alison Rowat:

Is there a limit to how much Mg Sulfate that you can use in Eop before you impact the delignification of the stage.

Michael Wang: 3-4 kg/ton Mg sulfate. He wasn't sure about the delignification loss part.

Michael Ferguson: They impacted delignification due to it changing to mag hydroxide and sulfate.

Alison: *Don't' use it! It helps with viscosity because it reduces delignification.*

Marc from Celgar: they removed Mg Sulfate from their bleach plant 3 months ago.

What is the reaction? What does MgSO4 go to at a pH of 10.5?

Shree-Prakash: The dosage should be below 1kg/ton but to see the benefit you need to go above 1 kg/t!! Jean Bouchard worked on viscosity compared Mg Sulfate vs Mag hydroxide (He will send the paper to her).

Howe Sound had issues with Evaps when they used Mg Sulfite. Oxygen drives the reaction. 10.8 end pH. Put as much O2 as you can. Some mills have MG in their process water, they will not see any impact from adding more

Honey:

How many people are using drones for inspection? They used drones with cages around to go into tanks, do loose the signal but it is a great tool.

Celgar uses them weekly to measure their chip piles

M Kjerulf, has used GoPro on long stick to inspect the inside of tanks. Brian LaBrash says they used drone for checking stacks.

Verso used a drone to inspect their main stack.

John O'Donnell:

Honest opinions on DnD?

Brian Verso : Don't do it. They tried it out, but the costs didn't work out in their favor due to the additional caustic required.

Dan Brouillette: They have seen it tried before, but they would need a longer retention time for it to be effective.

Alyson Rowat: Several successful experiences, no time between the two D stages for caustic to react. Four mills tried, those who continue to add caustic for environmental to reduce ClO2 puffs.

Ross: Most people do it to steal a washer to use somewhere else, which is not good enough of a reason. If you need another washer, but another washer instead of impacting your bleach plant by doing DND.

Shree: two stage O2, lower load on last 2 stages DnD, can manage. In all lab work, you cannot reach 90+ brightness without second extraction stage unless have 2 stage O2 delignification, then it is possible.

David Ivany, Thunder Bay:

They have been using paper copies for routes/rounds for the past 3 years. What are peoples experience with moving toward handheld units?

Michael Doucet BTG: A mill where he worked before had a rough start, he can send you contact information to someone in their reliability group.

Mark - Quinnesec is using second generation of units, expanding to other functions (They have motor info, look for leaks, motor cleanliness, use for predictability: has vibration increased, bring vibration crew if notice change. Can help decision making. Using Bluetooth communication.). Added benefits is that the new employees use it to find where equipment is. The information is connected to a database and e-mail

Phil S. It was a Verso initiative. Quinnesec did a great job at implementing.

John O'Donnell: DMSI is what Domtar is using. There was a long learning curve, but they have it under control now. It takes a while for your reliability system to get it working well, which did frustrate the operations crews for a while, but it pays off in the end.

Mercer, Celgar Castlegar:

How to avoid plugging an O2 reactor?

Mona – Valmet: stratification / floating after shutdown. Add water, if you can't add it before you shutdown, do it when you restart.

Thunder Bay has a rotating scraper and 4 dilution nozzles on top. They have never had an issue with plugging in their O2 reactor.

Laurier: Focus on consistency control

Brian LaBrash:

Who is using filtrate on hydro-doctor take-off.

Thunder Bay is considering doing it.

Alison:

Hurricanes are having a large impact on International Paper in the past couple of years. What can be done to reduce losses from flooding?

Phil from ERCO: In Mississipi you see a lot of impressive levees. It would be very expensive, but it could be worth it if there is a lot of downtime due to it every year.

Honey – Harmac Pacific:

Does anyone reuse the water from the barometric condenser (H7). It may have a little residual ClO2, and they think that this could help with a slime that they have in their

warm water tank. This could save their plant 200-250gpm of water, and they are maxed out on their water usage.

Jim – They used to use it to for indirect heat transfer, tocool the turbine stream.

ARKEMA: Think about the potential corrosion to your water tank and piping. If there is a puff and a sudden spike in ClO2 in the barometric condensers water, this could potentially cause some damage elsewhere in the plant.

John O'Donnell Domtar:

They are increasing production. Does any one have any experiences with running shorter residence time on hardwood (4 stages D-Ep-D-D) and not running peroxide. The residence time will be reduced to 60% of design target.

Brian LaBrash their Ep stage designed 60 min now at 30 min lost 1 to 2 brightness points. Biggest problem will be bleaching for shives, check capacity of steam mixers to increase temperature to compensate shorter residence time. You may need to increase to loading on the front end of the bleach plant to account for the change in residence time.

Mona – Valmet: Consider the washing capacity/carryover. You may max out your water usage and end up with lower dilution factors.

Bobby Manzoor – Verso Corporate:

*They are considering making Ep stage an E**o**p again. Who is using pressurized Eop and what pressure/temperature should they run it at?*

Thunder Bay is running 860kPa bottom 600+ kPa at the top. 70-80 C Honey 75-80C Alyson IP 80C

Alyson: as soon as we start optimising peroxide, especially on low kappa pulp. Peroxyde should give good brightening, what they found and was repeatable, is that oxygen did nothing. Above 2kg/ton H2O2 saw no advantages in continuing use of O2 in Eop, whether it was pressurized or not.

Bobby from Verso: In the beginning of Eop (not pressurised), the effectiveness follows an S curve.

Alisons references are at very low incoming Kappa to bleach plant. Savannah has one viscose grade, 1 stage not usable, running D E E D

Bobby comments that coming in at too low kappa in B/P needs to review cooking and wood cost. Ease off on Do if very aggressive and maximise use of Ep / Eop.

Dave -Thunder Bay has not seen big efficiency of O2 in Eop. Actually running just E no O2 no H2O2. Thunder Bay is not really doing delignification in their first stage. They measure their E stage end kappa instead of CEK. Softwood 30 kappa oxygen trial, found impact below 6 lbs/ton.

John O'Donnell Domtar:

Who is running shorter than 100 minutes on their D1 stage?

Some International Paper mills do.

Dave Willis - Peroxychem:

Who is using on-line peroxide residual measurement.

James says Valmet has an instrument for that but its use is not widely spread in North America.

George Alexis comments that some BCTMP mills use them.

Laurier added that BTG used to make one but that the difference with the other particles that you are trying to measure is too little for it to work properly.

Domtar John O Donnell:

Who is recycling fine screen rejects through an O2 delignification system.

Ashdown no2 line does.

HSPP /Paper Excellence does as well.

Safety Round Table

John Odonnell

They have started 3 day audits managed by 6 safety leads. They do 2 to 4 audits per year. (They use a lot of the younger engineers, opportunity to see another mill and help out with the safety audit) They do training in it every 2 to 3 years to keep up the amount of people in the audit group. The audits are managed from the corporate level, however, hazops/training is done on the mill level.

Shree - FPInnovations

Starting lockout procedure in their labs. They have dedicated personnel to ensure that it is followed.

Daniel – Valmet

Proposes what to do in the case of an emergency at a bleach committee meeting. We should know the emergency number/ street address of a hospital.

A university student at Papercon had a seizure and fell on the ground and hurt himself. Nobody was on site for the case of an emergency, and it took a while for someone to respond even though there were emergency phones in the hallway. Had they know where those emergency phones were, the situation could have been much smoother.

Brian – Peroxychem

Core value: safety

Acronym PEARL: PPE, Excesive force,A??, Repetitive actions, Line of fire

Total recordables are getting better. At or below benchmark recordable rates (about half compared to other midsized chemical companies)

Important to ensure that you are not getting complacent at work. There are hazards everywhere, whether it is at home, in a rental car/hotel/driving

Dave Resolute

Robust safety program at resolute

2nd recordable of the year last week. Paper machine employee laceration on arm required stitches. MW jammed thumb earlier in the year and required stitches

3 pillars of safety:

1. Prejob task analysis – Have cards to fill out (how are you going to do it safety)

2. Hazard identification (near mill database) everyone has to do at least 3 per year

3. one on one safety discussions 2 times per year with your supervisor. Talk about safety in general, what's going on in the mill, safety program.

Mike – Nalco

There has been a drop in incident rate last year. 90% of incidents are in a vehicle (50% of them, employees are responsible). They have an app to tell employees how they are driving (it scores you). It changes your behavior and ensures that you cannot use your phone or Bluetooth. It has been in place for the past month.

It is important to focus your safety on the high frequency situations (Such as driving in this situation)

Every employee must do on site driving training once per year.

Still having issues with adding chemicals into the wrong tanks in mills. Usually several things have to go wrong before there is an incident. Security opening the lock because mill unloader isn't around, not checking to make sure that it is the wrong tank, using a fitting converter.. etc.

Phil ERCO

350 days without and OSHA incident.

He looks at what is different due to being new to the company: Safety week, each facility goes to company head quarters to focus on safety. Focused on ensuring that you don't get complacent, and they make it fun (food, fun runs, activities) They build excitement for it and create hype to keep people thinking about safety.

Denise – Twin rivers

Safety remains a major focus in the mill.

Chase the ace: using it at safety meetings to increase attendance

Weekly supervisor safety meetings. Ensuring that they are giving the same message and to share personal experiences

Implemented a no smoking policy, had a 6 month transition period. Due to an incident which caused a fire.

Gloves on task. Everyone must wear gloves

Due to several incidents of people slipping on ice, they now highly encouraged to wear cleat which flips out under your boot.

Dan Davies – Evonik

Seeing a lot of cell phone in mills. Not only walking while using them. Be aware of the risks of not using hearing protection while you are on your phone.

Doug mentioned that there are fitted earplugs you can buy with a speaker in it which connects to your phone.

Evergreen packaging

Numbers are important. Million safety hours without recordable injury. 5 million hours without lost time last year. Both came to an end.

How to ensure that people don't become complacent, and how to get the message across in a safety meeting:

- Peroxychem – seeing examples of what happened in the past (put fear in people)
- John (Domtar) – Hard to keep it fresh. Pulled reports for the past 10 years of safety, they reviewed the safety incidents of the past. For example: someone being splashed with chlorate, and people were able to make the personal connection about something that happened to someone that they know. – otherwise, most people wouldn't know that an incident happened to. They Had a retired employee come in who was missing 2 fingers to talk about hand safety.
- Arkema – Try to ensure that it is something that everyone is thinking about all the time. Worst safety record was at the head office. They clamped down on it and improved it.
- Doug Reid – Showing examples where you can. Use chemical safety board videos. They talk about how it happened and why (for example BP refinery explosion in Texas, a bunch of things accumulated to cause the incident and they go through all of it in high detail)
- Castlegar – Everyone has to lead at least one of the safety meetings. They have to go through and make the presentation on their own, and then present it to the group.
- Mark Anderson (verso) – They presented on outage safety before the outage. Hot work, line breakage, past incidents, past near misses. Good to get people thinking, and have it fresh in their minds. They share a lot of the safety data with the state of Michigan and other VERSO mills.
- Verso – Serious incident alert. It is well documented and shared across the company. People can typically relate to the issues which drums up conversation. Safety days – ran through state of Michigan work related deaths (and ages).

Jim Collins – Marathon

Reminders that when using equipment (lawn mowers, snow blowers, etc.) use gloves, steel toe boots, hearing protection, etc.

Always ask yourself "How can I get hurt doing this job?"

Michael Doucet – BTG

Spectris as a whole is looking at rolling out spectris safety to all of its companies, including Capstone Technology and BTG. This is to create consistency across the company and some standards to follow.

Verso safety

Observations (known and unknown) – Employee lead (no repercussions to requiring improvement after an observation, and allows people to be honest and improve)

Carlos – Arkima

Think of your eyes when dealing with Peroxide.

Evergreen packaging

Job-box audits. It is important to catch people when they are not following safety procedure when they are in the act. Easier to explain why.

Otis – Evergreen packaging

Safety blitz every Thursday. 4 areas every week (one area is unannounced).

What if reward program: Give something to the employees if they can think of a new hazard that they can engineer out of your workplace. It challenges the employees to try and think about new hazards and ways to prevent them.

In the past he had the woodyard in his area. The screens, sizing conveyor had a nip point where chips would get caught and rub (Which could eventually lead to a fire). An employee got caught and was pulled in and broke his arm. He was using a stick to get chips uncaught from the nip point but the stick kept getting pulled in. So, he put down the stick and used his hand.

Courtesy care – Try to understand what an employee will do in different situation.

Mill employee was doused with caustic. Didn't understand the hazard. He drove home to take a shower without changing clothes. Better training on chemical awareness could have prevented him from getting as severely burnt.

Mark Verso

Rubber gloves in chemical unloading caught on fire (piece of cotton on the rubber gloves). Those gloves should have never been used for unloading chlorate, the small piece of cotton was overlooked.

Laceration through cut resistance gloves (it was size 8 instead of cut resistance rating of 8) No actual cut resistance. The employee had thought that they were cut resistant

TIR of 0 this year at their mill. Someone fell off a chip dozer as exiting it. He was bruised up, but it was not a recordable injury. Woodyard manger later found out that they come off of the dozer facing outward regularily, which should be prevented by training the operators how to properly get out of heavy equipment (he watched another employee and went back to ask the guy who had the injury). All of the other loader operators were then trained about the importance about climbing down from the loader while facing the loader instead of facing out.

- **Thunderbay** said that cut resistant gloves are mandatory in their mill to prevent such a situation.

Celgar

If there is an incident it is sent to all employees

Red hard hats for all new employees for the first year. Including the new mill manager!

Summer students: they cannot have cell phones on site. They must be in the cars. An employee was walking on site with his cell phone out.

In every manager meeting they ask what they did yesterday to make people safe, and what they are going to do to keep someone safe today. Eventually this practice will be passed down through all other areas in the mill.

Mona Henderson Valmet

Trying to move toward proactive instead of reactive. There is resistance to having to do so many near miss reports per year (it is about the constant awareness of safety, emergency exits, how to call 911)

Safety walks are done by management to see how to incorporate findings company wide

Safety talks are done by everyone to ensure people are aware of their hazards

Reimbursement for fitness to keep employees fit. Several sites are doing yoga at work to allow people to stretch and relax.

She chose to stay an extra night in a hotel instead of driving home tired after a long week of work away from home. “Who am I helping? My kids are a sleep and I am just putting myself at risk.”

Michael Wang

Monthly safety call due to employees being remote. Every 4 years, employees go through driving training.

He notices differences between safety at mills. For example: walking and talking on a phone or texting (inconsistent between mills). Think about these things, even if they aren’t a rule at your facility.

James Goldman – Valmet

He was at Georgia Pacific collaboration at the service center (Midtown Atlanta). He was looking at his phone and walked into a glass door. She said that it happens all the time. They now have a yellow safety strip across the door to prevent it from happening again. He admits that he clearly was not paying enough attention to what he was doing in the moment.

Bob

They try to design systems so that you can access as much as possible from the ground. Not requiring to stretch/strain/climb a latter/duck under piping

- Evergreen – They are trying to engineer out any opportunities to get hurt while doing regular activities. Considering ergonomic aspects while designing
- Thunder bay – he thinks it is a great idea. Recently they had an energy project, and a contractor ended up putting automatic valves on top of a H-D tank, where no one could turn them. They had to install a platform to reach them and ended up charging the cost of the platform back to the engineering company.