Bleach Committee Meeting Minutes (Spring 2020) – Domtar Dryden

Mill Updates

Matt Broere (Domtar, Dryden) – Having issues with production issues in the winter due to frozen chips. Adding additional screens to reduce rejects in brownstock. Project to pressurize the Eo stage.

Daniel Brouillette (Valmet) – Valmet bought GL&V. (3rd acquisition for Dan). When Beloit split, it went to 2 different people. Now Valmet owns both divisions which were initially split. He is now part of the Fiber processing division which includes Woodyard to just before the headbox.

James Goldman (Valmet) – Valmet has purchased J&L machines. He is changing roles, he will be dealing with fiberline and recovery solutions.

Honey Nampak (Harmac Pacific) – A new wash press was installed. Replaced kappa analyzer (Kappa QC). In December 2019 they started a papricycle stage (for chemical and steam savings). They have an upcoming shutdown at the end of march. They are making a plan for the coronavirus and how to deal with the virus during their shutdown. She is changing positions from senior process engineer to technical superintendent.

Michael Doucet (BTG/Capstone Technology) – BTG has been purchase by Voith. The integration is going well and seamless. BTG is keeping our name, and we are told that we should experience business as usual. On the paper side there is probably some more integration going on, but I haven't noticed any differences.

Michael Pinard (Domtar Windsor) – He is the operation manager for woodyard and fiberline. They are trying to meet qualifications to sell product to Europe (Their efforts to be qualified have paid off paid off by lowering their costs). Installing new pressure diffuser this summer (From Andritz). They recently had issues with the failure of their sulfuric acid day tank (it was only 10 years old).

John O'Donnell (Domtar) – Trying to standardize processes/systems across the organization. Major Capital work is being pushed in Espanola and Plemyth.

Les Adams (Irving Pulp and Paper) – Running behind a little on production for the year. They have added steam to their main reclaim for chips coming into the mill (Chip screening). Designed to run without heating, but they have started adding due to issues that they were having with frozen chips. Looking into the vision of the mill into the future. No announcement on the new pulp dryer, but there is a hole in the ground (Expecting to have an announcement soon on a new Stock prep + pulp dryer). They have done plenty of changes and troubleshooting, but they are continuing to have issues with their D1 (Adding lots of defoamer onto it). They ran 14 bypasses in 2019. Recently did a training with their CLO2 Rep for all their operators (This went over very well). Due Northern Pulp shutting down, a JDI sawmill in Nova Scotia is now sending softwood to newbrunswick (Which used to go to Northern Pulp).

Shane Adam (Domtar Nekoosa) – He is a process engineer at the mill. They are having a Lot of injuries doing normal operational tasks. They are working on their SOPs and operator training to try and prevent the injuries. An individual was off for 8 months last year due to slipping in the parking lot. They have

made cleats mandatory for individuals walking in from the parking work. They are working on how to process wood better with increasing amount of snow (Expanding bark room system to keep woodroom running with these conditions).

Shaun Koblum (Domtar Dryden) – Recently installed a Kappa analyzer (FITNIR). They are using compact presses in brownstock to optimize bleach and evaporator loads.

Steve Brannock (Domtar Johnsonburg) – They have 3 or 4 senior crew leaders retiring in the next year. Mill has done well closing the liquor cycle and optimizing the bleach plant. Looking at new training systems to help them deal with lots of retirements. They have recently installed a Valmet recaust optimization. Their bottleneck is now the recovery and evaporator areas. Looking into installing a Valmet bleaching control system. They are working on infrastructure (replacing lots of old tanks). They are currently running a 3-stage bleaching system and are trying to optimize to 89/90 brightness.

Inibehe Harry (Domtar Espanola) – He has changed from Mackenzie pulp to Espanola in the past year. They are converting from two lines to a single line fiberline. Installing new Kappa analyzer in bleach plant. Added FITNIR to the R10. Did trial on digester (on cooking hardwood 50% aspen 25% maple and birch). Sometime this month, they will be trying to process the stock through the kamyr digester into the hardwood line.

Chris Brennan (Allnorth) – Lots of bottleneck studies with Domtar mills (Espanola, Dryden and Kamloops). They have been using a 3D scanner to essentially make google street view of mills.

Olivia Carter (Domtar Dryden) – Working on trial in Eop to decrease peroxide.

Hazel Babu (Domtar Dryden) – Trying to reduce soda losses throughout the mill. Looking into improving washer performance. Looking to increase concentrator performance and solids recovery. SQC chart utilization is improving communication between lab, instrumentation and operations.

Laurier Morissette (TEXO Controls) – Ongoing development of a wood chip analyzer. Involved in the restart of Nordic Kraft mill in Lebel-sur-Quévillon.

Vivek Rajbhandari (TEXO Controls) – Recently installed a Recaust advanced process control system at Domtar Dryden.

Michael Doucet (BTG/Capstone Technology) – BTG was purchased by Voith in December. The integration is going well and seamless. BTG is keeping its name, and we have been told told that we should experience business as usual.

Molly White (SAPPI Somerset) – Recently converted paper machines to produce board. Failures: Inline drainer failures (lots of large holes in them). They also found a large track in the blow-line (replaced with a valve).

Evan Brewer (SAPPI Somerset) – Extending their new Digester APC into brownstock washing. Adding a steam line to the debarker to help with frozen chip issues. Trying to focus on chip quality as well. Increasing percent direct chips over the past year following 2017 new woodyard project. Upcoming trial work for CO2 injection to brownstock washing and prebleaching enzymes.

Kari Cahoon (Domtar Plymouth) – Looking to spend capital on replacing diffusion washers. Hired 6 new operations people to plan for retirements in the next year.

Dan Davies (Evonik) – Purchased Peroxychem (all manufacturing facilities except for Prince George). Dan Davies is retiring on October 2nd , he has been attending bleach committee since the fall of 1990.

Michael Kjerulf (Nalco Water) – Works for Ecolab Canada instead of Nalco Canada, this will not affect customers. Company is watching coronavirus closely. Some of their factories in China are currently shutdown. The factory shutdowns have not affected customers yet, but they may. They did drivers safety training because car accidents are their number one incident. Mentor App marks their driving and the managers are now monitoring the driving of the salespeople. It is dramatically improving overall safety at Nalco. There are similar driving applications which can reduce your insurance rates (Meloche Monex was mentioned by Jim Collins)

Ross Anderson (Retired) – If you are in a situation where you need to take a vacation, but the plant cannot live without you. Plan for your own retirement. Working isn't the only thing in the world. Find balance in your life so that you can enjoy your lives and retirement better.

Brooke Fraser (Domtar Kamloops) – They are working on an O2 delignification optimization project (Increasing Temperature, Pressure and optimizing NaOH dosage). They are also working on bleach plant optimization (Papricycle trial and shifting ClO2 dosages). They just got all of their washers running in automatic level control, and they have also implemented dilution factor control.

Brent Derocher (Domtar Kamloops) – He has been with organization for 1 year. Finished a debottlenecking project in the machine room. They double-felted their pulp machine and worked on the 2nd and 3rd press as well. They have broken several production records since completing the debottlenecking project. Installing a containment dyke around 4 ClO2 storage tanks (The biggest risk for this project is the operation of mobile equipment near the tanks). Replacing a papricycle washer Vat from tile to steel. Still looking at bottleneck opportunities, they are recovery limited by emissions and brownstock is also an issues

Caleb Wright (Domtar Kingsport) – Switching to smaller screen sizes in brownstock. Communicating with Andritz and Valmet to find the best option for them. Studying the effect of Bark content on their brightness.

Scott Ballard (Kingsport) – They had a significant failure on the reclaimer from their chip pile. They are currently bypassing it. This is a significant vulnerability in their process. They are trying to figure out how to keep the rate up with their chip-screening issues. They are also having an issue with manpower and training. It has been a few years since they have had a full line of operators.

Frederick Lemerise (Resolute St. Felicien)– They started new advanced controls on their digester when they converted to downflow cooking in January, they are very happy with the reduction in kappa variation. They recently had issues with a washer rebuild (The supplier had outsourced the work). They had failure of a manual valve leaking by on a shutdown, this made it more difficult to lockout the system. They recently cracked a shaft on their Layboy and broke the shaft on a dissolving tank agitator. They also had an unexpected 2-week shutdown to fix an issue with their TC line. Lime kiln is currently the bottleneck in their mill.

Mike Loutit (Domtar Dryden) – He has transitioned from being the maintenance engineering manager to a new strategic role. In 2009 Dryden went from producing Pulp and Paper to being a Pulp mill. They currently have a very young team and are having manpower issues due to retirements. They recently

has an issue with their effluent flume, it was broken and leaking effluent into the ground. They had to pump it out with trucks for 6 months at a cost of $5k/day until the pipe was repaired.

(Domtar) – Their Mill manager and technical manager retired last year (Both had a lot of experience on site. Their outlet device failed. They had issues with chips this winter and are looking for method to run digester consistently throughout the year. Digester has been the bottleneck lately. Jacobs is currently doing a bottleneck study with them. They are making a 5 to 10-year capital schedule. Technical team is focusing on increasing digester uptime.

Marty Hoskins (Solenis) – Purchased a company last year (ESF??). Recently setup a new training program for their employees. The program involves 3 levels of training dependent on experience level. Managers decide which disciplines that their employees need to know about and they set goals for the employees. The tree levels of training are as follows:1. I know about it. 2. I can do it. 3. I am an expert in it. They have also started a rotational program which sends new employees through multiple areas of the company. Development of a pulp aligned group (Group dedicated to selling to pulp-mills.) Working on a consistent customer experience, all districts should be providing similar services.

Alison Rowat (International Paper) – Working on Weyerhaeuser/IP merger. Loveland is for sale and has an offer. Most people in the industry are 50+ or under 30, they are bridging the gap with an internal program called “Reach Engineering Training Program”. There is currently no technical path and everyone is on the path to become a mill manager (But this isn’t a realistic case for the industry). They are back to 12 month mill wide outage schedule at most of their mills. Low capital/ high return or no capital is the focus.

Brian Labrash (VERSO Quinesec) (Remotely) – VERSO sold its Androscoggin Maine and Stevens Point WI mills to Pixel. The sale was completed 1st quarter 2020. They are starting up Andritz KW8R Quaternary screen. They are continuing with overlay installation in the bottom half of the digester.

Opportunities

Matt Broere (Domtar, Dryden)

They recently has a ClO2 spill at their facility. Investigation showed that the sensor for monitoring ClO2 wasn't working correctly and they had to pull tubes instead of trusting the instrument. Anyone else having issues. They have tried using Drager and a few other sensors.

Les Adams (Irving Pulp and Paper) – They had an incident a few years ago and ended up placing mounted ClO2 monitors around the plant (in areas other than bleach plant). It is important to realize that there are cross sensitivities involved with these sensors.

Honey Nampak (Harmac Pacific) – She is going to send some information.

Jim Collins (Retired) – Marathon had success with their ClO2 analyzers. Contact someone from Terace Bay to see what they use.

Honey Nampak (Harmac Pacific)

When they did balance for an open prebleach washer they figured that their BOD loading would remain the same or decrease. They seem to have had an increase in BOD loading. It doesn't seem to coincide with the installation of the wash press. Operations seems to think that it may be due to using less ClO2 in the bleach plant. What could have caused this increase in BOD loading?

Paul Earl (Paul Earl Consulting) – He agrees with Doug and Honey, the decrease in ClO2 shouldn't have much of an effect on the BOD loading.

Phil Sekerak (ERCO)– Are they increasing production?

Honey Nampak (Harmac Pacific – They are running about 10% higher, but they continue to have the issue when they slow down to their old production rates.

Paul Earl (Paul Earl Consulting) – Any temperature changes? Eo stage temperature? Is there a higher yield loss across the bleach plant?

Michael Pinard (Domtar Windsor)

They have been having bearing failures in their washers. They couldn't see it coming the first time that it happened. Monitoring of bearings is difficult due to them moving at such a slow speed. Does anyone know monitoring techniques for a slow speed application??

Daniel Brouillette (Valmet) – He has seen similar issues with a 9rpm washer (a little quicker than the washer in question). A mill that they supply to has developed a way to predict failures of low speed washers. He will provide contact information from a mill uses this method.

Frederick Lemerise (Resolute St. Felicien) – He will call a friend to get his feedback. In the past they had operators use a broomstick to listen to how it sounds. They had this problem in their pulp machine. The electronic device didn't work, but an operator with a stethoscope worked fine.

Ross Anderson (Retired) – Wouldn't it be similar with Lime kilns?

Michael Pinard (Domtar Windsor) – They tried having a 3rd party predict failure for them, but the second failure wasn't predicted.

John O'Donnell (Domtar)

A few of their mills are still using Talc. Any experiences about talc?

Molly White (SAPPI Somerset) – Still use 6lbs/t on Eop stage. They tried reducing hardwood application points about a year ago, and then they increased it again after having some issues. They have been running the same setpoints for 20 years.

Paul Earl (Paul Earl Consulting) – A lot of mills still use Talc. He knows only one mill which uses pitch dispersant and Talc.

Frederick Lemerise (Resolute St. Felicien) – They tried using a replacement, but the machine wire turned black. It works, but he is not sure about the long term affects.

Michael Kjerulf (Nalco Water) – Depends on washer/cleaning/species. It is easier to get rid of it in a softwood mill (easier to deal with pitch). Less mills are running a lot of talc. There is no one size fits all. More challenging in some mills.

Les Adams (Irving Pulp and Paper)

Their O2 delignification can typically achieve 60% delignification. Recently they are having issues. How do you differentiate between oxidized white liquor and caustic application in O2 delignification?

Alison Rowat (International Paper) – Make sure white liquor is in grams NaOH/L. She can provide the calculations so that it works properly.

Laurier Morisette (TEXO Controls) – You shouldn't see any difference using caustic or white liquor (As long as you measure white liquor as grams NaOH/L).

Paul Earl (Paul Earl Consulting) – Oxidized White Liquor has conductivity which will increase the conductivity leaving the bleach plant. Be aware of this, some people will think that they are getting dirt, but they are just measuring the conductivity of the white liquor.

Marcel Arguinarena (Irving Pulp and Paper)

He is now working in the Quality department. With the new pulp drier on its way, they are looking into installing a fiber analyzer in order to predict pulp strength properties. Does anyone have experience with this?

James Goldman (Valmet) – They are doing it at several facilities. He can provide some information.

Brent Derocher (Domtar Kamloops) – Mercer Castlegar does it as well.

Shane Adam (Domtar Nekoosa)

As digester, brownstock, and evaporator areas go down, they have issues with Hotwater. They want a method to run their bleach plant for 3 to 4 hours after the other processes go down.

Michael Kjerulf (Nalco Water)) – Some mills use small pick heaters to get you out of ClO2 efficiency issues.

Honey Nampak (Harmac Pacific)– They have flash heaters which go to a bleach hot water tank.

Les Adams (Irving Pulp and Paper) – Irving has a pick heater which they primarily use for shrinking wires onto drum washers.

Frederick Lemerise (Resolute St. Felicien) – They run a gant chart of all of the steps of the shutdown process. Plan to have low levels of inventory when you go down. They always have gas issues if they go into a shutdown with too much inventory.

Steve Brannock (Domtar Johnsonburg)

How hot is too high for D0 temperature. DEK dropped when they dropped ClO2 and turned off a D0 ClO2 heater. Higher brightness off D0 stage,

Phil Sekerak (ERCO) – If you are running a residual, heat it up.

Paul Earl (Paul Earl Consulting) – How much Retention time? **30 minutes** . There is no limit to the temperature in D0. It speeds up the reaction. If operators like to see a trace residual, they will need more ClO2 to see that residual if they are running a higher temperature

Laurier Morissette (TEXO Controls) – If you are cutting ClO2 in the first stage, you are also cutting caustic. Cutting caustic will increase the brightness.

Paul Earl (Paul Earl Consulting) – If you are running to the same Eop exit pH, you should have the same level of caustic darkening.

Doug Reid (Nouryon)– Any chance you were decomposing ClO2 in the heater? (85F)

Paul Earl (Paul Earl Consulting) – Temperature across D0 doesn't matter, as long as you have enough temperature to react all of the ClO2 and not have a residual at the top of the tower.

Alison Rowat (International Paper) – If you didn't reduce caustic in the extraction stage. Maybe you are getting a better extraction due to running to a higher NaOH/ClO2 issue.

John O'Donnell (Domtar) – Is it possible that they are having a channeling issue?

Inibehe Harry (Domtar Espanola)

They are running a 4-stage bleach plant. There is a lot of variability in D2 brightness. Sometime there is an 87 off D2, which they don't see it in the pulp machine. What, chemistry is going on to cause a brightness gain into the pulp machine? They have stopped relying on the D2 brightness lab tests.

Laurier Morissette (TEXO Controls) – how are you measuring brightness? **Lab test.** Do you adjust the pH of that sample? I would investigate controlling pH of that pad. How do you dry the pad? **Speed dryer**

Paul Earl (Paul Earl Consulting) – If you use enough DI water, it should be a constant pH brightness test. Does it correlate with periods of high residual on the D2 tower? Speed dryers are terrible because different operators will run it for different amounts of time. Try using SO2 or bisulphite water for your

wash. Chlorite will drop the brightness, and then the brightness rises as it is the pulp is washed in stock preparation before the pulp machine.

Jim Collins (Retired) – In Terrace Bay, they weren't doing a consistent method of drying the sheets. An airflow timed circulating air dryer worked better. The airflow dryer used a constant amount of pulp, and drying time. This was used at Marathon and Terrace bay. They did trials of different drying times to see which was amount of time gave them the most consistent brightness results.

(Domtar) – They had the same issues when their D2 residual was higher. Their caustic strength had changed, and they were running pH control based on the flow of caustic.

(Domtar Espanola)

D2 brightness randomly drops on the softwood line. Metals are precipitating out of solution. They used acid on a sample and the brightness came back up. They tried lower kappas from the digester without positive results. The remains low on the pulp machine too. (Brightness drops from 88 to 82)

Paul Earl (Paul Earl Consulting) – That is too much of a drop from reversion. Something must be deposited onto the pulp.

Dan Davies (Evonik) – Could something be going on with fines in the white water?

Phil Sekerek (ERCO) – Where do you get your sample? **They use the vat side of the washer.** This eliminates the possibility of white-water contamination.

Doug Reid (Nouryan) – Neutralization stage in that plant? You could be making some Hypo which causes reversion.

Brent Derocher (Domtar Kamloops) – You mentioned that pH on the machine isn't controlled. Is it measured? **It varies between 4.5 to 5.5.** If you are using drainage aid, it will drive the brightness down. **They use drainage aid** Check to see if it is being overdosed.

Olivia Carter (Domtar Dryden)

What is your experienced with saving caustic on Eop stage?

Alison Rowat (International Paper) – It is about pH and retention time. It will vary by mill.

Laurier Morissette (TEXO Controls) – Keep dropping pH until you see that you are having problems with D1 stage. It is different for each mill, find what your sweet spot is.

Honey Nampak (Harmac Pacific) – Do what Laurier said. They went as low as 9.8 without any issues in their extraction stage.

Steve Brannock (Domtar Johnsonburg) – has a target of 10.5, but they can go as low as 9.8 before they have issues.

Hazel Babu (Domtar Dryden)

Is anyone doing elemental testing on their chips. Would elements in the chips be causing scaling in other areas?

Laurier Morissette (TEXO Controls) – The worst thing for scaling is bark. Do you process Birch? Birch is the worst for causing scale.

Doug Reid (Nourian) – There are several papers on Ba/Ca from chips. He can send a few papers. Places like Econotech can do this kind of a test for you. Send them a small sample of chips.

Caleb Wright (Domtar Kingsport) – They are frequently checking their bark. They have about 5% bark. They are doing a bleaching study on bleaching with different amounts of bark. They are doing Chelant trials on different amounts of bark. They were hitting a brightness ceiling between D0 and Eop due to increased levels of bark.

Molly White (SAPPI Somerset)

Operator training with APC solutions. They have operators who have only run APC. They are wondering how to train operators on running the process without APC.

Honey Nampak (Harmac Pacific) – They are trying to stay on top of it. They try to get the senior operators to train newer operators as though there was no APC solution.

Laurier Morissette (TEXO Controls) – They have a hard time to control the process when a sensor fails. Practice running without an instrument when things are going well so that they are prepared for when there is a failure.

Phil Sekerak (ERCO) – The Ramp up from a shutdown is normally done out of MPC (This is a good opportunity for practice)

Greg Fralic (Valmet) – You could use a training simulator to train them up for those situations.

Evan Brewer (SAPPI Somerset)

Lowered D1 upflow temperature to bleach shives better. Also tried increasing D1 ClO2 and lowering pH to lower than 3.0. It had little to no effect on the shive content. Does anyone have recommendations for lowering shives through the bleach plant?

Doug Reid (Nouryan) – Did you try to lowering the pH. **They currently run a 2.2 pH.**

Paul Earl (Paul Earl Consulting)– You are doing all the right things. Lower temperature and pH in a long retention tower. Look at your screens. **They run 62 thousandths.** That is too large. You are not screening your pulp adequately in brownstock.

(Domtar) – 8 thousandths works well to remove shives

Paul Earl (Paul Earl Consulting)– Talk to Crofton. They switched from 60 thou holes to slotted screens and their problems went away.

(Domar Plymouth)

Looking at upgrading to press washers in bleach plants. Any tips would be appreciated.

Honey Nampak (Harmac Pacific) – Talk to me later.

Alison Rowat (International Paper)– They took an operator from one mill which had them press washers and had them help out with training a mill who was starting them up for the first time. The startup went very well overall. Ensure you have enough dilution to satisfy the hydraulic requirement of the new washer.

Daniel Brouillette (Valmet) – Involve the operators from the beginning so that they have faith in the new washers.

Jim Collins (Retired)

How many mills are impacted by the first nations railway blockages? (He knows that the Resolute Thunder Bay mill didn't have any issues)

Frederick Lemerise (Resolute St. Felicien) – They had to start delivering by truck instead which was a little more expensive.

Austin Fochs (Domtar Rothschild)

They have been having issues with a refractive index probe on the recirculation line of the Digester. It hasn't been working very well.

Laurier Morissette (TEXO Controls) – They come with an automatic washing cycle. Beware that you will consume water to run it and the piping will cost you a lot.

Ross Anderson (Retired)

Are any TMP mill souring? For mills that want to eliminate SO2 for souring peroxide. Has anyone gone through the process of going to Sodium Bisulfite?

Dan Davies (Evonik) – Catalase can be used. It is enzymatic and a little slower (Takes minutes to react). It is very expensive ($20/kg). He knows 1 mill who buys a new drum every year whether they need it or not.

Shane Adam (Domtar Nekoosa) – A past mill that he was working at moved to Sodium Bysulfite and acid. They were successful.

Brooke Fraser (Domtar Kamloops)

What pressure do people run on wire cleaning showers and are they are on timers. When the wire cleaning showers turn off, they have issues with their level control.

Mona Henderson (Valmet) – Changing the pressure profile can cause issues around the pumps. There could be something hooked up to the water system which is stealing demand and causing a cycle. It is okay to have 2 or 3 constant flows off one pump. But an intermittent or cycling flow will cause issues.

Laurier Morissette (TEXO Controls) – Consider controlling the pressure on the outlet of the pump.

Shane Adam (Domtar Nekoosa) - The shoe may be on incorrectly.

Brent Derocher (Domtar Kamloops)

They have a deposit which develops in their P40 pump which plugs up the reboiler. They are boiling out every 4 or 5 days just to keep the generator running. They have a new pump and impeller. The AMPS rise when the deposit develops. Whatever is in there, is dissolves quickly.

Laurier Morissette (TEXO Controls)– What kind of deposit? **Not sure, haven't tested it.**

Phil Sekerak (ERCO) – Normally, the amps will go down when there is a pluggage. This sounds like something is accumulating slowly.

Feven Zemicael (Domtar Espanola) – She was working at Kamloops before. It never did happen when she started there, and it started happening during the 4 years that she was working there. They also looked at other variables such as hot water.

Caleb Wright (Domtar Kingsport)

They are having reprecipitating issues in the Digester. Any testing procedure and where do you pull the sample? O2 delig? Digester?

Laurier Morissette (TEXO Controls) – Test it just before O2 delig.

Paul Earl (Paul Earl Consulting) – Test it at multiple points to see what the difference is. You can reverse it by running high alkali in O2 delig. Test in the blowline and post O2 delignification.

Inibehe Harry (Domtar Espanola) – Try measuring your chip pH. A low chip pH could add to your issue.

Shay Adams (Domtar) – Is the flow/nozzle is changing in the dilution right? **Not enough circulation (Need 800gpm and they only get 400gpm.) They aren't getting proper penetration in the washer.**

Brad Harris (Domtar Kingsport)

Does anyone have suggestions for counteracting seasonal brightness drop coming out of D1 stage.

Paul Earl (Paul Earl Consulting) – Metal ions were mentioned earlier. What pH do you run in D0? If metal Ions are driving down brightness, try to pound it with sulfuric acid and sewer as much filtrate as you can (Down to 2.2 vat pH). **They run 2.5 vat pH.**

James Goldman (Valmet) – If the problem is coming from the Digester. You can use a liquor titrator to try and eliminate the issue closer to the Digester.

Mona Henderson (Valmet) – Have you tested the impact of cooking on varying bark levels. She has heard that it can impact the brightness ceiling, not sure why.

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Is there a ceiling on residuals for D100 and D1

Paul Earl (Paul Earl Consulting) – Additional residual is not going to help you brighten more. If you are running a residual, that means some ClO2 isn't reacting, don't try adding any more chemical. Don't bother running a residual on D0 stage.

Jon O'Donnell (Domtar) - There comes a time that you are just wasting chemical. Stop adding chemical if it is just going out the stack/scrubber.

Paul Earl (Paul Earl Consulting) – It could be a “false low brightness”. Try making a hand sheet with antichlor water. Especially if you are running with a high ClO2 residual.

Ross Anderson (Retired) – It sounds like there is a combination of a brightness ceiling issue and an education problem within your facility about running higher residual of ClO2 impacting excess brightness.

John O’Donnell (Domtar) – They are running a very hot D0 and very long retention.

Frederick Lemerise (Resolute St. Felicien)– They have an option to run residual control in their APC solution.

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They always try to ensure that their scrubber nozzles are clean. They clean them during every shutdown. They use weak-wash as a scrubbing medium. They use chelant to wash the nozzles, but they want something else which would help with unplugging the scrubber nozzles.

Frederick Lemerise (Resolute St. Felicien) – They do acid washes.

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They have issues with high aluminum in their pulp. They are not sure where it is coming from.

Rohan (Noram Engineering) – It could be coming from their dregs filter.

Brent Derocher (Domtar Kamloops) – A chloride balance on the recovery boiler could resolve it.

Matt Broere (Domtar Dryden)

Is anyone doing any treatment on their raw water supply

Michael Kjerulf (Nalco Water) – Some mills are using PAC. Changing from ALUM to PAC helped with bleaching issues. Muddy water is challenger. Overdosing PAC can plug up your lines.

Alison Rowat (International Paper) – Work with you chemical suppliers, they can help you.

Alison Rowat (International Paper)

Info on positive pressure cooling helmets

Frederick Lemerise (Resolute St. Felicien) – Pureflow is the name of the helmets.

Brian Labrash (VERSO Quinesec) (Remotely)

Does anyone do a yearly scenario training on their ClO2 generator.

Brent Derosher (Domtar Kamloops) – The E/I supervisor for the plant does a trip check. 38 step interlock check.

Honey Nampak (Harmac Pacific) – She was checking all of the interlocks, but not documenting it. Worksafe audited them, and they look for the documentation of the interlock checks.

Brian Labrash (VERSO Quinesec) (Remotely)

Does anyone have vibration Sensors of the Recirculation pump on a chlorine dioxide generator.

Brooke Fraser (Domtar Kamloops) – They have 3 on the pump and one on the loop. The look at them to prevent the shaft of P40 from breaking.

Phil Sekerak (ERCO) – Level is usually the biggest cause of vibration.

Brooke Fraser (Domtar Kamloops) – The one on the loop is good for determining when something has sluffed off within the generator.

Brooke Fraser (Domtar Kamloops)

Do you have issues with vibration at the top of your O2 delignification reactor? They lower vibration by decreasing the consistency. Adjusting the degassing valve on the MC pump also helps with the issue.

Mona Henderson (Valmet) – They have seen it on the outlet of reactor. Overcharge of O2, too much of a pressure drop across a valve, not enough mixing, channeling have all been common causes. Look at the pressure drop and the amount of O2 being added to the reactor. Piping supports wasn't adequate in some cases.

Brooke Fraser (Domtar Kamloops) – At Higher kappas/ O2 application, the vibration goes down.

Alison Rowat (International Paper) – They cracked a reactor twice and had it down for 3 years. They ended up finding that their static mixer which mixes oxygen (before it goes to process) It had disintegrated. Replacing the static mixer helped them.

Mona Henderson (Valmet)– Superheated steam can cause issues as well.

Dan Brouillette (Valmet) – If you are using superheated steam, yyou need more steam due to a lower heat transfer coefficient.

Paul Earl (Paul Earl Consulting) – Celgar had the same issue earlier this year. You may want to ask them what they found.

Chris Brennan (Allnorth) – Did you every shut off the O2 to see if the vibration stopped? (as part of the troubleshooting process)

Evan Brewer (SAPPI Somerset)

Are any mills doing CO2 & Enzyme treatment in brownstock?

Paul Earl (Paul Earl Consulting) – Quinnisec did a presentation on it. Not sure if they still use it.

Steve Brannock (Domtar Johnsonburg) – They did is for a while. But they stopped because it was causing issues with the kappa in the brown HD.

Jim Collins (Retired) – They used enzymes for years in Marathon brownstock (near neutral).

Michael Kjerulf (Nalco Water) – Haven't seen many enzymes with CO2 on brownstock.

Michael Pinard (Domtar Windsor) – They did it and he can connect you with the process engineer. They stopped doing it, but they started using CO2 for brownstock efficiency reasons last month. It works well.

Molly White (SAPPI Somerset)

Does anyone have solutions for flushing a D1 upflow tower?. They had issues doing it during a shutdown.

Brent Derocher (Domtar Kamloops) – Patience. If you do it too quick you will flood the basement.

Steve Brannock (Domtar Johnsonburg) – Are you using flush water or repulper dilution? Using the repulper dilution helps reduce channeling.

Chris Brennan (Allnorth)

Has anyone put steam into a standpipe?

Mona Henderson (Valmet) – She hasn't done it for safety reasons

Jim Collins (Retired) – They did it on their D1 stage. But they found D1 stage was operating well at 150F, and they never needed to use it. There was a fatality in Thunder Bay due to a similar application though.

Paul Earl (Paul Earl Consulting)– If you have any issues with the system, you will blow the doors off of the washer and bad things will happen

Mona Henderson (Valmet) – NPSH may become a problem if the pump isn't designed for it

John O'Donnell (Domtar) – Heating water may and then injecting it may be a better option to get some better delta T.

Les Adams (Irving Pulp and Paper)

He brought in a vendor for Generator operator training. What frequency do Canadian mill do this type of training? Getting all of the operators in the same room and talking about daily activities really helps them out.

Molly White (SAPPI Somerset) – They have done internal training. Sometimes they bring in ERCO. They try to do it in the spring when people aren't on vacation

John O'Donnell (Domtar) – It is a requirement in the US to have annual Training. Some mills do it internally, and some do it with a vendor. The focus is on the chemicals that are used. They have a very rigorous program.

Chris Brennan (Allnorth) – PSM requirements are coming into BC. He has been helped doing a HAZOP on an R8 in BC. Reach out to Brennan (Cariboo)

John O'Donnell (Domtar)

Is anyone actively using enzymes on a continuous basis?

No one is.

Doug Reid (Nourian)

People mentioned data compression. What is a brief of data compression? What are best practices?

Daniel Brouillette (Valmet) – Something which is stable, you may not need as much compression.

Paul Earl (Paul Earl Consulting) – A good example is listening to an actual recording on an MP3. You can hear the holes in it.

Greg Fralic (Valmet) - It is cheap. Buy more disk space.

Honey Nampak (Harmac Pacific) – They can see all of the points when they are live, but their stored data is compressed.

Honey Nampak (Harmac Pacific)

Are people using defoamer on press washers? They built a proper filtrate tank and didn't want to use defoamer. They think that the foam issue is coming from brownstock, they have issues with level control in the filtrate tanks due to it. Are you using defoamer without a vacuum washer?

Mona Henderson (Valmet) – They have seen foam generation has a relationship with how much solids there are. Little concentrations, there isn't enough surface area to foam. If you see a change in washing upstream there can be a change in the ability to foam. Level management is important in the seal tanks. Species effects foam as well.

Daniel Brouillette – If you have soap and it is hot, when it gets cooler it gets out of solution (peter hart wrote an article about it) foam happens worse. You can only remove it when it is very hot, once it is cooled you will just pass it to the next stage.

Brian Labrash (VERSO Quinesec) (Remotely)

By a show of hands, how many folks Eddy Current test HX's?

Honey Nampak (Harmac Pacific) – Trip checks are now required by worksafe BC.