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Maximum Returns on Planning and Scheduling = Operations Ownership

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The domestic paper industry has seen its share of change over the last five years – a slowing economy, increased foreign competition, and a sizable group of domestic mill and machine closures. The remaining U.S. mills are struggling to survive and looking for new ways to become more competitive. Cost reduction efforts have yielded quick results, but mills are now turning to more long-term solutions to improve their market position. This has led them to a renewed focus on reliability.

A strong reliability program is now recognized as a critical component in staying competitive in the paper industry. When discussing reliability efforts, a multitude of programs come to mind. From preventive and predictive maintenance to root cause failure analysis to operations-driven reliability, the key to lasting success in any reliability endeavor is a strong planning and scheduling program. Without the ability to effectively schedule and complete the work identified through other reliability programs, no real returns can be recognized.

In the past, many mills have felt that planning and scheduling was strictly a maintenance function. We have now come to realize that the ability to effectively plan and schedule work hinges largely on the full participation of all affected parties. This includes maintenance personnel as well as all operations and engineering/technical groups. Previous planning and scheduling program efforts often failed to produce the intended results due to the exclusion of one or more of these affected parties

To achieve lasting financial results in planning and scheduling the operations business unit *must lead* a program that addresses six key components (Identification, Prioritization, Planning, Scheduling, Completing, and Documenting Results of Work) and engage all affected parties in the process. The following will break down the six components and map out what a successful program should look like.

Identification

Responsibility for identifying maintenance work must be shared by all involved – maintenance, operations and technical/engineering. The days of letting maintenance find their own work are now long gone. The identification of work will come from many sources – hourly operators using operations-driven reliability rounds, vibration technicians completing vibration routes, action items generated by the root cause failure analysis program, preventive maintenance routes- the list goes on and on!

A struggle that most planning and scheduling programs have is effectively capturing all this information so that opportunities do not slip through the cracks. A written procedure must be developed to address how the identified work will be captured. The other key

component of the identification stage is keeping everyone involved through communication. We have all seen many attempts at operator rounds and preventative maintenance fail due to the route runners thinking no one is really looking at all the paper work and then feeling like it is no longer important to produce accurate information. To eliminate this problem, a communication plan with clearly defined roles and responsibilities should be in place to help not only funnel the identified work to appropriate team, but to ensure that the originator of the work knows the status of the job. The format of the communications (electronic, written, verbal) is not nearly as important as getting the buy-in from all team members and sticking with the agreed upon plan.

It is critical that the communication addresses the following:

- Will the work be completed? (Yes or No)
- If not, why was the job dropped?
- If so, what is the priority/timeframe of completion?

With potential work coming in from maintenance, engineering, operations, administration or security, communication in and among these groups is no small task. The addition of a vibrations group, on-site contractors, air leak detection programs, preventive maintenance, shift operators and comfort control systems that go bump in the night just add to the logistical headache. Without a communication plan, a planning and scheduling program can be taxed into extinction.

So how do you effectively involve and maximize the contributions of operations? They must be responsible for setting the priority and timeframe for work to be completed. Only operations personnel know all the intricate details of how a system functions and what needs they will have in the near future to fulfill their operational commitments.

While maintenance teams continue to shrink, it is critical that they remain focused on work with the highest return or work that reduces failure risk. An operations-driven planning and scheduling process, with the input of the planning and scheduling team, will lead to correct prioritization and efficient completion of work.

Planning

Planning is not as much a responsibility of maintenance or capital project engineering function as most would think. With work requests coming in from so many groups, it would be impossible for that responsibility to rest solely on a maintenance planner or project engineer. They need input from other groups to ensure the proper scope and timing of any particular job.

Operations should be actively involved in developing the scope and timing of a job. They bring knowledge of whether a job can be done on the run or if downtime is needed, if additional engineering is necessary and how much time can be allotted. This is the stage where many mills don't dig deep enough to realize the potential in a planning and scheduling program and find themselves dealing with problems that were created for years to come.

Operations involvement must include:

- Ensure that the highest priority jobs are focused on first
- Sign off on installation drawings
- Walk down jobs in the field to discuss equipment placing or piping runs
- Develop plans on how to isolate and/or maintain a system after installation
- Audit planned work order to ensure parts are on hand before scheduling
- Audit man hours and job steps for efficient utilization of work force
- Ensure all aspects of safety are included in the planned job

This is an easy step for an operations group to gloss over, but it is crucial if we plan on breaking the rework cycle – 20% of our equipment using 80% of our maintenance resources.

Scheduling

Scheduling is the area where most mills feel they shine. We seem to be very good at picking which jobs we need done today. But true scheduling goes deeper. It identifies which jobs must be done today and insures that no job is scheduled without being properly planned. It also identifies which scheduled jobs will be pulled first if emergencies arise. This is where most programs fall down. Best in class mills can schedule one, two, or even sometimes three weeks in advance with very little break in work.

This is also another point where maintenance hours should be challenged. If your mill subscribes to "lumberyard" scheduling (2 men x 4 hours or 2 men x 8 hours), it's time to get serious about resource utilization. It may be the responsibility of the maintenance supervisor to put the schedule together, but operations has the responsibility of challenging any job they believe is over manned.

Operations involvement should include:

- Reprioritize the planned backlog of work
- Verify the ability of the job to be completed as planned
- Develop the operations plan to isolate the equipment prior to the work
- Coordinate all work groups to minimize the time need to complete the work
- Challenge given time estimates if they seem to be padded
- Communicate back to the operations group the completed schedule

Completing the work

Traditionally, operations was only minimally involved in the completion of work. Those times are changing quickly. Today, operations personnel are helping isolate equipment, directing shift maintenance personnel, filling out required safety and work permits and performing rounds to make sure people are working safely and efficiently.

Some mills have gone a step further to have operators complete small jobs such as tightening packing or bolts, changing light bulbs, etc. More advanced mills are now

putting operations personnel to work alongside maintenance to help develop the skills of the entire workforce. This frees up the limited maintenance resources to focus on work that requires the highly trained maintenance mechanic or electrician to complete.

Documenting

Documentation is the most overlooked step of the planning and scheduling process. It's easy to focus on getting the work done and moving on to the next important process. But the documentation is a crucial process in making a step change in the reliability of the mill. While some jobs will not need extensive documentations, i.e. repacked a pump or welding a leaking pipe, others will require regimented documentation to insure further improvements.

The correct documentation should include:

- Updating the bill of materials
- Changing any technical specifications
- Documenting out of the ordinary job steps needed to complete the job
- Identifying all necessary tools

On top of the documentation, additional work requests should be entered into the system for any modifications to make the job more efficient for the next scheduling. Operations' responsibilities should include ensuring that the correct documentation is completed, any additional identified work is entered into the mill system. It could also include the updating of operator rounds or reliability routes due to the completion of the scheduled work.

Implementation

The implementation phase of a project of this nature will be different at every facility and may even vary in different areas of a mill. An early step is identifying the planning and scheduling team. When building a team, all the above must be taken into consideration. The most effective teams will have cross-functional members from operations, all disciplines of maintenance, and technical departments. Clear roles and responsibilities should be developed to ensure everyone knows what is expected of them. This should include the agenda, ground rules, designated times for meetings and written communication plans. Another key is to include who will fill in for a team member if they are unable to attend meetings to avoid falling apart during high vacation times of the year. By laying these ground rules prior to implementation, you can avoid these potential pitfalls.

Conclusion

With competition at an all time high it is easy to see that we must explore all means possible to remain economically viable. Reliability has been widely recognized as the most promising resource to lower our production cost. The keystone to achieving lasting economic benefits from a reliability program is an effective planning and scheduling program. The only way to truly maximize the long-term returns of a planning and scheduling program is by placing the ownership in the hands of the mill's operations department.