



Veracel Revisited

Due to the Veracel pulp mill's remote location in Bahia, Brazil, the local pool of technical maintenance talent is a shallow one. Dan Holmsten, the mill's maintenance manager, talks about the ever-evolving challenges and strategies the facility has implemented since its start-up in May 2005.

By John Yolton

Early 2005, before the new Veracel mill was commissioned, this author visited the mammoth single-line hardwood market pulp mill in order to better understand the innovative asset management organization created by the then newly appointed Maintenance Manager.

The mill was commissioned in May 2005 and has since been operating under that initial organization with minor changes (as shown in Figure 1).

The vision was to minimize the support staff from Veracel and to contract the required skills from reputable service providers, thus adjusting resources to the variable workload.

Four major resource providers (Partners) were selected:

- Tecvix - provides mechanical services.
- Sindus Andritz - provides the Electrical and Automation services.
- SKF Brazil - provides the Condition Monitoring and Lubrication services and,
- Depran - provides all other supporting services, such as scaffolding, painting, etc.

Under the concept, two Veracel supporting staff represent the five major operating areas in terms of determining and prioritizing asset management work requirements within

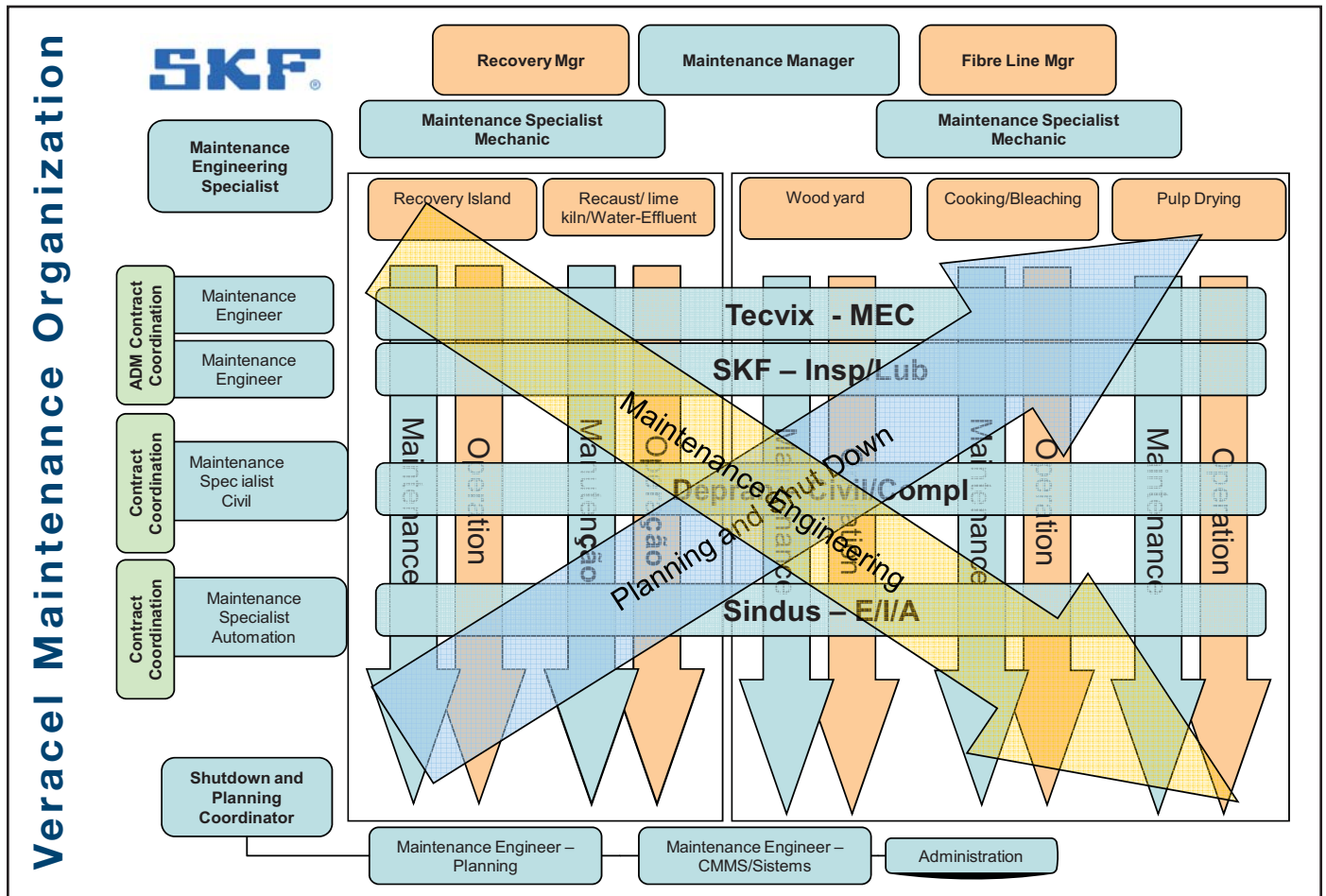


Figure 1. Responsibilities of Veracel Staff

those operating areas, e.g., Woodyard, Fiberline, Pulp Dryer, Causticizing/Water-Effluent Treatment and Recovery Island.

Another group of Veracel support staff (Specialists) act as business management agents monitoring and auditing the activities and costs of the four major service providers. A Maintenance Engineering function is also provided. Rounding out the owner’s organization is a Projects and Planning Coordinator, all managed by the Maintenance Manager, representing a total of 12 people.

Definition of these and the partners’ responsibilities are shown in the accompanying Tables.

On the third visit by the author to this facility, we questioned the Maintenance Manager, Dan Holmsten, who took over the reins of asset management from his predecessor in early 2007. Dan was part of the original owner’s engineering team overseeing the construction and commissioning phase. He had previously worked in a Swedish pulp mill for Stora Enso.

We asked Dan whether he has any reservations about this unique organization and if he would change anything as a result of the four years of operating experience.

Partners

Are responsible for the functional performance, fulfilling the requirements of:

- Reliability engineering
- Planning, scheduling and control
- Execution

Where Reliability Engineering, for example, is defined as responsibility:

- ✓ To monitor production losses
- ✓ To evaluate equipment history data; to control the information quality
- ✓ To analyze failure root cause
- ✓ To make recommendations to avoid losses
- ✓ To elaborate maintenance politics, plans and procedures
- ✓ To guarantee spare parts optimization
- ✓ To provide technical support for operations
- ✓ To monitor function performance
- ✓ To analyze new technologies

"First, I want to qualify my responses by explaining the circumstances we face here at Veracel as a result of our location within Brazil. Bahia (State) is remote and as such does not possess the most qualified people for performing technical maintenance tasks," Holmsten explains.

"When we entered into the agreement to build this site in Bahia we committed to employing local resources for 50% of the company's workforce. Those resources for the engineering and supervision of our maintenance did not exist in the region, so many of these functions were brought in from other regions of Brazil together with 50% of the workers team.

"There is a lot of construction continuing within Brazil today and inevitably the original workers who signed on to operate and maintain this facility have since moved on to other opportunities. Our turnover among maintenance workers is over 170% during our four and a half years of operation. This means we have to pay a premium for competence," explained Holmsten.

"That situation is improving, but it was not temporary as we first imagined," he added.

"Theoretically, based upon historical data, our Maximum Sustainable Rate (MSR) is 3474 tonnes per day compared to the design rate of 2543 tonnes per day. We are running the mill today at an average of 2972 tonnes per day, which means that we run at an average of 17% over nominal capacity,

having an MSR of 36% over nominal capacity achieving 85.5% of that theoretical maximum production level, Holmsten said.

"Our efficiency coefficient of 85.5% is acceptable due to the way we calculate, but certainly there is room for improvement," he noted.

"In general terms," Holmsten continues, "our overhead is high because of the model used. For example, each partner has to maintain some administrative staff in order to manage their efforts. Overall skills and qualifications are still an issue and require constant attention by the partners, especially for training."

"Another major challenge is to overcome the walls of the four groups (silo mentality). I have expressed a desire that the Partners take on more responsibility, especially in the daily planning and scheduling coordination among the four major partners and for root cause analysis of problems," Holmsten said.

"Do not misunderstand me; we are operating quite well, under conditions that many other competitors could not tolerate," Holmsten emphasized. "We know we can do better and the Veracel staff and our partners recognize these improvement opportunities. I am beginning to see more options with this model than I originally envisioned and it's a matter of the partners, where it makes sense, to step up and do more," he said.

"I believe in the outsourced model, but we need to find synergies between the partners. It will be efficient and effective when the focus includes good work planning and schedule coordination and good problem solving."

Holmsten concludes by stating, "Some of the suggestions that have been made, for example by SKF, as additions to their renewed contract include developing an operator driven reliability (ODR) program to formalize our First Line Operation (FLO) program, that should help increase reliability while reducing costs.

Veracel's Maintenance & Engineering Team

(see Figure 1)

- Are responsible for maintenance performance and new projects results.
- The structure is a matrix, where the area responsible (columns) facilitate the interface between the operational people and partners companies and control their results in that area.
- The function (or skill) responsible (rows) technically support maintenance and engineering. They mainly work on projects and troubleshooting and also monitor the performance of equipment families (pumps, gear boxes...) and control the results of the partners companies throughout the mill.
- The continuous improvement process is conducted and motivated by the management team, through multi-skills groups.
- The engineering coordinator is responsible for the implementation and results control of new projects.
- The planning specialist is responsible for the mill shut down coordination, verifying the integration between partners' planning, verifying the quality of the information in the CMMS and support cost control.

Currently the four major partners use a total of 188 workers comprised of approximately:

- 66 mechanical
- 51 electrical, instrumentation and automation
- 50 general services
- 16 for condition monitoring and lubrication

Keeping in mind that labor is much less expensive in Brazil (to date) than in the more developed paper industries of North America and Western Europe, the large numbers of workers seems exorbitant. However, productivity improvement through training and implementation of multi-skilled functions will be a natural progression as the industry matures, thus providing future resource cost management.

An example of the value of the partner's program, the 2007 goal for downtime attributed to SKF activities, e.g., lubrication and condition monitoring:

- Loss of Pulp Production in 2007:
 - Goal: 3.240 tonnes per year
 - Actual: 1.597 tpy
- Savings: Manufacturing Contribution:
 - Difference: 1,643 tpy at US\$250 per tonne = US\$410.750

"Another suggestion under consideration is the management of the power transmission components and lubricant MRO — a cost control measure. And SKF has proposed providing root cause analysis (RCA) on mechanical rotating equipment for elimination of recurring failures which again improves reliability.

"It is these ideas from our specialty Partners that once in place will provide the stability, and flexibility for our continuous improvement," Holmsten said.

No maintenance manager is ever satisfied with the status quo instead they are continuously striving for better practices. Dan Holmsten is no exception and as such demands constant revision of the elements of the asset management

program depending upon current and foreseeable conditions.

When the strategy is right, tactical issues will always require adjustment. The equipment at Veracel is still relatively new, but still is experiencing conventional failures due to wear and tear (aging). There is always the prospect of unexpected premature failure that must be dealt with on a tactical level. Being in a situation where historical maintenance experience with equipment is minimal is an impediment, thus placing more emphasis on the preventive and predictive measures leading to proactive actions. This is essential for good long-term asset management and Holmsten acknowledges that issue.

Veracel's model is unique among today's pulp and paper mills and it is innovative, founded upon logic and situational needs and providing proven value. Once mature, this organization will continue to provide value, while increasing stability and allowing flexibility to meet future market demands.

Veracel's management believes adapting to ever-changing circumstances is the right strategy, knowing full well that the alternative, e.g. failure to adapt, means: "You will always get what you always got, if you always do what you always did." ■

John Yolton is a 46-year veteran of the pulp and paper industry having held management positions for several paper manufacturers, as well as several suppliers to the industry. He can be reached at john.yolton@skf.com.