PULP & PAPER

INNOVATIVE SOLUTIONS FOR WOOD HANDLING AND LOGYARD MANAGEMENT

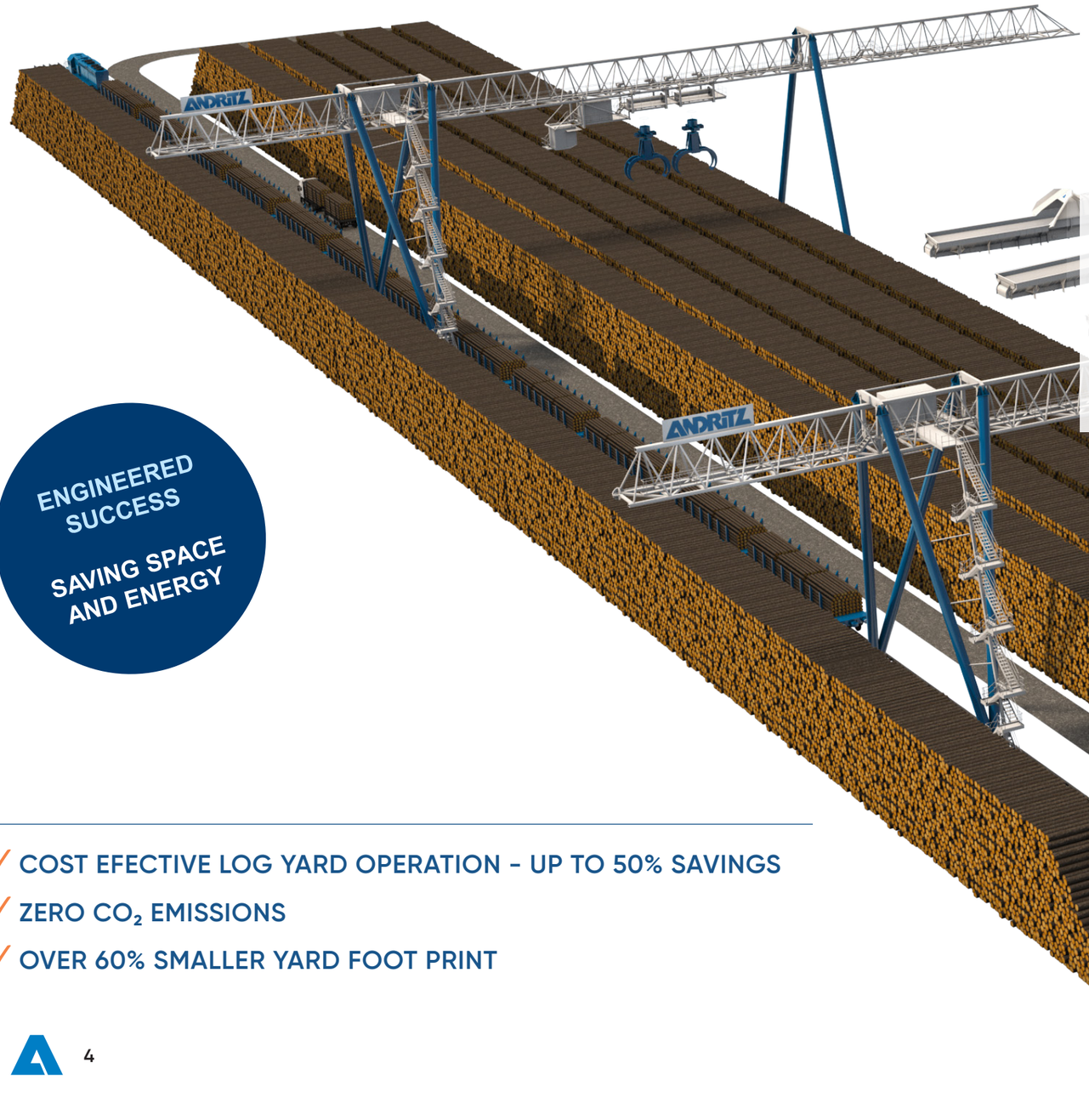
Log yard handling with cranes

ANDRITZ

ENGINEERED SUCCESS

Log yard with cranes

An efficient woodyard starts with log handling



ENGINEERED SUCCESS

SAVING SPACE AND ENERGY

- ✓ COST EFECTIVE LOG YARD OPERATION - UP TO 50% SAVINGS
- ✓ ZERO CO_2 EMISSIONS
- ✓ OVER 60% SMALLER YARD FOOT PRINT

WHY CRANES?

With a log yard crane it is possible to reduce woodyard operating costs by more than half when compared with wheeled loaders.

A modern woodyard will improve productivity and reduce operating costs and often can produce large paybacks. As fuel costs continue to rise and fiber and labor shortages present management challenges, log handling cranes can provide an economical solution.

REDUCED MANPOWER

One third of the manpower is required for a crane operate woodyard compared to a loader operated yard when each is processing an identical volume of logs. With an autonomous operation manpower need is one tenth compared to loader operation.

ELIMINATE FUEL COSTS

Cranes are powered by electricity. The energy usage for two log yard cranes will be less than 100kW per hour. Eliminate diesel fuel required by loaders.

FAST CYCLE TIMES

A crane can make as many as 25 cycle times per hour. This allows for a high number of trucks to be unloaded when necessary. Cranes are equipped with storm brakes. They can operate in all weather conditions and in winds up to 72 km per hour.

LOWER CARBON FOOTPRINT

ANDRITZ cranes are totally electric; no diesel fuel, leaks, spills, exhaust or noise. Contamination of raw wood material is minimized. The smaller yard needs less soil preparation and disturbance.

Electric powered portal cranes run on crane rails so the soil stays undisturbed this eliminates ground and water contamination by wood, fibre, fuel and oils.

REDUCED BREAKAGE AND FIBER LOSS

Mills operating a log yard crane report less fiber loss and 75% less log breakage .

SMALLER YARDS

Log yards served by cranes require less land and labor for identical storage volumes while providing greater flexibility. High stacking and that the crane “lifts” over the storage pile eliminates the need for an extensive road network.

LESS EQUIPMENT

One piece of equipment versus multiple loaders will simplify your operations. A single crane can handle the unloading, storing and feeding of the mill.

Enhancing operations through custom reporting and inspections

ANDRITZ can help you develop a service program that is right for your operations. Customized daily, weekly, monthly and annual inspection procedures are an excellent and necessary part of your crane´s operations. Guaranteed OEM parts and engineered solutions are why the ANDRITZ service team is the best in the industry.

INVENTORY MANAGEMENT

Imagine a world where your log inventory system is fully automatic. With defined input zones, output zones, storage zones and wood classification, incoming and outgoing wood can be detected automatically with default classifications.

By recording this data into the Programmable Logic Control (PLC) it is easy to calculate tons received and tons placed on the infeed and tons placed to storage. Average age of inventory in each storage bin can also be maintained. Reporting functions are tailored to meet the requirements from different operations and data can be exported into multiple formats.

OPERATIONS MONITORING

The Crane Service Monitor system (CSM) was developed to provide crane owners and users with advanced data acquisition and analysis features to support their log yard management and operations.

The features include PLC tag trending, queries, alarm and fault reporting. The CSM is a fully automatic log yard inventory management and crane operations recording system.

Reports are designed to enhance and support preventative maintenance planning, operator performance, inventory, first-in/first-out and capacity evaluations.

REMOTE SERVICE OPTIONS

The crane service monitor computer can connect via wireless Ethernet networks and records can be collected onto a reduntant storage for redundancy.

This computer can also be used to remotely access the crane's PLC, drives, and radios. CSM has a web interface that allows users to generate and save reports which can be shared automatically, or manually, as required.

ENCHANCING OPERATIONS

- Real-time fault monitoring from a remote desktop
- Fault reporting and storage directly from the PLC
- Automated inventory and throughput calculations
- First-in/first-out through load cell technology
- Customied reporting structure

Circular cranes for saving space and energy

Circular cranes have a compact design with easy first-in/ first-out log storage solutions, making circular cranes ideal for operations that require a fast throughput with minimum real estate.

LOG INVENTORY REDEFINED

Circular cranes have the capacity to unload log trucks in a single bite, while maintaining the feed to the logline at the required rate. A rapid return of investment on this versatile log handling solution is guaranteed due to easy ground preparation.

Circular cranes can accomodate single or double log stacking techniques depending on your log storage volume requirements. Whether your operations require a circular or linear crane, the project is executed by a team of professional engineers and supported in the field by a dedicated service group.

REFERENCES

Circular cranes are installed at a number of pulp mills and have been in operation for many years in North America.

Georgia Pacific, Naheola USA, Circular crane installed 2020.

Linear cranes for maximizing storage and speed

A log yard crane will assure log yard efficiency and the maximum log storage capacity in the industry. With the ability to put multiple cranes on a single rail you can expand your log storage and throughput capacity easily.

IDEAL STRUCTURE AND DESIGN

Linear cranes have a girder design that minimizes wind reaction. The girder assembly is bolted with pinned connections to legs with links, pinned struts and sill beams.

MAXIMUM CAPACITY

The speed and capacity are carefully calculated to ensure you can meet the cycle times necessary to keep your mill operating. Service and training are crucial to operations: ANDRITZ provides maintenance and operator training with ongoing customer support.

REFERENCES

Linear cranes are installed at a number of pulp mills and have been in operation for many years in North America.

Millar Western FP, Whitecourt Canada, Linear crane istalled 2019.

Autonomous logyard with cranes

The implementation of ANDRITZ artificial intelligence (ANDI) allows a detailed tracking and classifying of the wood receiving in real-time. It helps to control the inventory transactions and optimize the debarking drum process. The operators of a wood yard for pulp production benefit from the increased chip quality and reduced operating costs.

OPTIMIZED PROCESS
Autonomous cranes manage the unloading, storage strategy based on pile allocation for hard wood/soft wood, diameter, and estimated moisture, and loading to the process. The AI controls first-in/first-out.

Woodyard process optimization helps to achieve more continuous and uniform feed rate: Improved debarking for lower fiber loss and dirt count as well as improved chip quality for lower screening loss and improved cooking performance.

SAVINGS IN OPERATING COSTS
In a traditional log yard with two cranes running 24 hours per day, there can be a need for six operators. But with an autonomous operation, this may be reduced to only one supervisor per shift.

REAL-TIME 3D SCANNING
Real-time 3D scan of the crane environment and the interpretation of the available material by utilizing AI leads to a uniform feeding of the drum. The optimized debarking process shows significantly lower fiber loss and dirt counts.

Real-time 3D scan of the crane environment. Machine vision object detection and segmentation.

ANDRITZ HELPS TO IMPROVE THE AVAILABILITY AND PERFORMANCE OF YOUR PULP MILL PROCESS

With ANDRITZ you can depend upon our millwide knowledge and years of experience to deliver proven results. All of our operations are carried out in compliance with environmental and quality requirements, with safety being of prime importance.

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