



# Process Services

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## Paper Making Line Optimization

- Troubleshooting
- Adjusting
- Fine-tuning paper production process

## Steam System Audit

- Initial tests before machine start-up
- Final adjustments for different paper grades during stable run

After pressure tests and high-pressure cleaning

- Mechanical inspection of piping
- Performance test of control valves
- Check of pumping sequences
- Test run and adjustment of heating sequence
- Performance test of condenser
- Test of heat exchangers
- Adjustment of controllers and identification of set points
- Adjustment of cascade system
- Adjustment of break-run program

## Paper Machine Condition Audits

In connection with a grade change or a speed or capacity increase

- Process performance – energy economics, runnability, efficiency ratio
- Condition of piping and equipment - leaks, insulation, maintenance needs
- Suitability of equipment - pumps, valves, steam joints, heat exchangers, piping systems
- Potential for capacity increase
- Potential for reducing consumptions

## Mill-Wide Energy Consumption Analyses

- Total energy consumption by different factors
- Energy consumption key ratios compared to production and evaporated water
- Evaluation of energy key ratios
- Analyses of energy saving and production improvement potential

## Paper Machine Disturbance Studies

Urgent problems affecting production, product quality or maintenance needs

- Profile problems
- Drying capacity decrease
- Steam consumption increase
- Sheet break problems
- Wear of equipment and piping
- Water impacts and noise in piping

## Training

Operator training