

A publication from Enbridge Gas Distribution for Industrial Energy Users, providing information on technology, programs and services.

Energy Efficiency in a Flash at Georgia Pacific

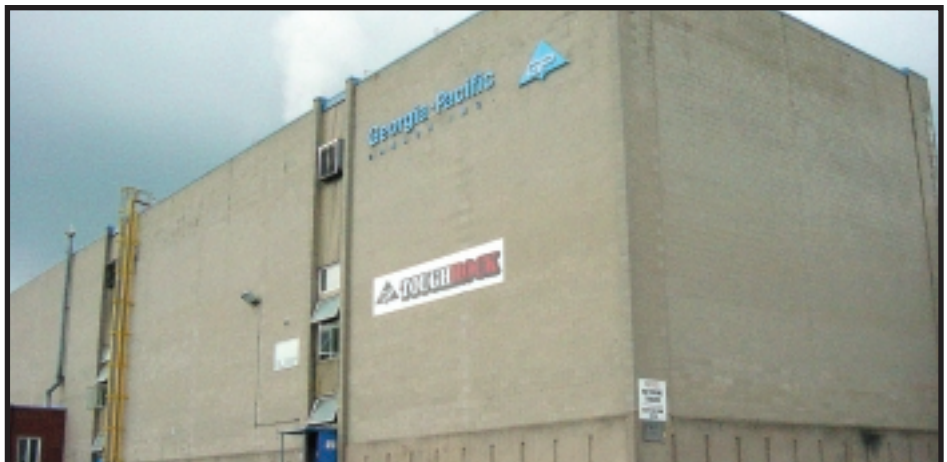
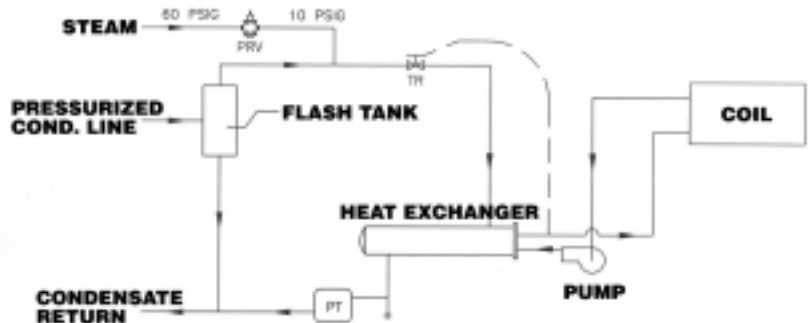
At A Glance:

- Georgia Pacific identifies opportunity to increase paper production by adding pocket ventilation.
- Enbridge Gas Distribution and Preston Phipps investigate technical options and recommend a condensate return flash generator.
- Installation of the flash steam unit allows the company to heat both the pocket ventilation and make-up air.
- Annual energy savings from the recovery of this waste heat are approximately 364,000 m³. These savings qualify Georgia Pacific for an incentive of \$18,197 from Enbridge Gas Distribution's energy efficiency program.

company's Chief Stationary Engineer of the day, Mohammed Zafar, was asked to deliver warm air around the paper machine. This was to allow the mill to operate the machine at a higher speed, increasing production capacity. At the same time the mill was experiencing a problem with a pressurized condensate line. Enbridge Gas Distribution and Preston Phipps worked with Zafar to come up with a solution that would use the energy from the condensate line to heat the air required in the paper machine area. It soon

Increasing Production and Efficiency

Georgia Pacific's ToughRock paper mill at Thorold dates back to the 19th Century. But its energy efficiency program is distinctly modern. Over the past decade the company has conducted boiler and steam trap audits, installed oxygen analyzers to monitor combustion efficiency and added a controls system to improve operation through rapid trouble-shooting. In 2000, the



Georgia Pacific's ToughRock paper mill at Thorold.

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Dave Goodman (right), Energy Solutions Consultant from Enbridge Gas Distribution continues to work with Georgia Pacific's new Chief Stationary Engineer, Harold Armstrong as part of Georgia Pacific's Energy Team.

became apparent that a flash steam skid would do the job and reduce energy costs at the same time. Georgia Pacific hired Armserv to do the turnkey installation, a job which was completed in the spring of 2001.

Flash Steam Generator

The condensate return flash generator takes condensate from the return line and makes it into steam by reducing the pressure. This flash steam goes into a heat exchanger where it heats glycol, recondenses and returns to the steam plant as feed water. The glycol then travels through coils, becoming a heat source for both make-up air coming into the mill and pocket ventilation in the paper making process. As a result less direct steam needs to be produced for production and space heating, and natural gas consumption is reduced.

Using waste heat is particularly valuable in the pulp and paper

industry where intense competition requires mills to keep energy costs as low as possible – especially where Canadian mills must compete with U.S. operations that do not require winter heating. But many other industries can also benefit from using their waste steam. Flash steam generation can be applied in the steel mills, pharmaceutical plants, and food and beverage facilities. In addition to production and space heating applications, waste heat can be used innovatively for tasks such as water softening.

Benefits

Enbridge Gas Distribution estimates that installing the condensate flash generator yields an annual reduction in natural gas savings of 363,958 m³. This qualified Georgia Pacific for an Enbridge energy efficiency incentive of \$18,197. Reduced natural gas consumption in turn produces environmental benefits, bringing down CO₂ emissions by 701,638 kg.

In addition to the energy savings and environmental benefits the new unit has facilitated production at higher speeds, making the entire paper making process more cost effective.

"Every dollar saving to the bottom line is a big help."

*Tim Woiceshyn,
Sr. Plant Engineer
Georgia Pacific*

Georgia Pacific plans to continue the search for new ways to improve energy efficiency. The company's new Chief Stationary Engineer, Harold Armstrong, is planning a full plant energy audit and setting up an Energy Team to identify ongoing efficiency opportunities. Enbridge Gas Distribution will be part of that team.

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Enbridge Gas Distribution can provide you with assistance in assessing your steam system. Incentives are available based on qualifying energy savings. Please contact us at:

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