

**From: David Forsberg, Community & Government Affairs Leader
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To: Other Generation WorkGroup members

RE: A collection of email containing info on UP on-site and waste-to-energy generation.

1. Sent April 14, 2005 from David Forsberg to Other Generation Workgroup

RE: Wholesome Dairy Farm Waste to Energy Info

The Wholesome Dairy Farm, Hilbert, WI, supplies power to Wisconsin Public Service Corporation as part of the utility's NatureWise green power program. Upper Peninsula Power Company also purchases this power from WPSC for its NatureWise program.

This dairy has 3,700 head of dairy cattle. Waste to energy facility. The dairy produces 700 KW of power for WPSC, which is the sole purchaser of the facility's power. This facility was built four years ago. Nearly \$1.6 million was invested. There are no low or high peak periods. Production is steady. I believe this dairy could add another 750 to 800 head of cattle.

Wholesome Dairy is now starting to realize a return on their investment. What they have found in their own operations and in speaking to others who run a similar facility is that the more basic the engines the more efficiency in the operations. Fancier engines tend to break down more.

For more info, contact: Ken Buelow at (920) 849-1133 or email at: wd1@dotnet.com

2. Sent April 18, 2005 from David Forsberg to Other Generation Workgroup

RE: MeadWestvaco On-Site Generation Information

3 turbine generators (GE). One has been running since 1968, other installed in 1972 and the 3rd in 1984. Average 84-86 MG daily when plant is operating at full capacity. Can generate 104 MW under optimal conditions. Turbines vary in size. Co-generation. They are extraction turbines used in conjunction with 4 boilers. Extract steam at turbines. Produce 100% of plant's power. However, MeadWestvaco also buys power from U.P. Power Company. Turbines have been in operation since 70 years or better. Two turbines were retired in 1968.

For more info, contact: Craig Thompson at (906) 786-1660, ext. 2340 or email at: cmt4@meadwestvaco.com

MeadWestvaco is one of three U.P. businesses that I am aware of that have on-site generation. Other is International Paper and Smurfit Stone Container.

3. Sent April 18, 2005 from David Forsberg to Other Generation Workgroup
RE: Resend Info of International Paper's On-Site Generation

Quinnesec's Energy Basics:

Pulp Mill start-up 1985

Paper Machine start-up 1990

Facility Type: Pulp and Paper Mill (Coated Papers)

Electrical Energy Sources

Average mill requirement = 60 MW

Available Self Generation = 28 MW

Mill generation - winter = 28 MW

Mill generation - summer = 22-24 MW

Mill Generator

Asea TG - single turbine-noncondensing, dual generators.

Inlet steam: 600 PSI

Single Extraction: 65 PSI (used for majority of mill process steam)

Steam Energy Sources:

Pulping Black Liquor provides the majority of total steam generation

heat input.

Hogged Fuel (ie bark) from pulping process provides the majority of the remaining fuel for required steam generation.

Any remaining steam capacity required is made from purchased bark, small amounts of coal and NG.

Self-Generation Limitations

Physical restrictions of our generation capacity.

Process Steam Requirements.

More Information: Ed Chaperon, International Paper email at: Ed.Chaperon@ipaper.com

4. Sent April 20, 2005 from David Forsberg, to Other Generation Workgroup
RE: Neenah Paper, Munising – On-Site Generation in the UP

Neenah Paper, Munising, MI

5 MW turbine generator

Condition Unit with extraction

Supplies 90% of paper mill's electric needs.

Unit installed in 1928

Take water from Lake Superior as part of the process.

More information: Jim Parent phone at (906) 387-7559 or email at: jparent@neenahpaper.com