



East Grand Forks
Water & Light Department

Your Hometown Utility Since 1909

Welcomes



Monday, October 20th, 2008

Load Management and Automated Meter Reading

Load Management

- A form of demand-side response
- The East Grand Forks Water and Light utilizes a Load Management system to automatically shut down interruptible loads during demand peaks.
- Each kilowatt of controllable load reduces the need for peak generation and transmission by the same amount.
- Customers enjoy the benefit of reduced rates for their controllable loads, as a result of reduced wholesale demand charges incurred by the utility.
- East Grand Forks Water and Light has had a Load Management program in place for over 20 years

Load Management

The system used by East Grand Forks Water and Light utilizes signals sent on the distribution lines to permanently installed receivers at the customer's premise, requiring no action by the customer after he/she signs up for the program.

East Grand Forks' system continuously monitors total distribution system demand and automatically makes load control decisions based on current trend. The operator can also initiate control based on market conditions, or at the request of transmission or generation utility

Load Management

Examples of loads controlled by East Grand Forks' programs:

“Dual Fuel” heating

- The heating system will primarily use electricity, which includes renewable energy sources, and when a signal is received from the load management system, the heating system will switch to fossil fuels such as natural gas, fuel oil, or propane until peak condition is done.

Storage Heat

- Electric cables or tubes connected to an electric boiler are placed in the slab and sand underneath a structure, which will store the heat, and provide a constant radiation of heat into the facility, even when the heat source is interrupted. When a signal is received from the load management system, the power is interrupted until the peak condition is done.

Electric Water Heating

- Tank-style heaters of 40 gallons or more are cycled 30 minutes off, 10 minutes on during peak conditions. On/off times are staggered providing a potential 75% reduction in water heating demand during peak periods

Air Conditioning

- During peak periods, air conditioning is cycled at a 12.5 minutes off, 17.5 minutes on rate. On/off times are staggered providing a potential 40% reduction in air conditioning demand.

Automated Meter Reading

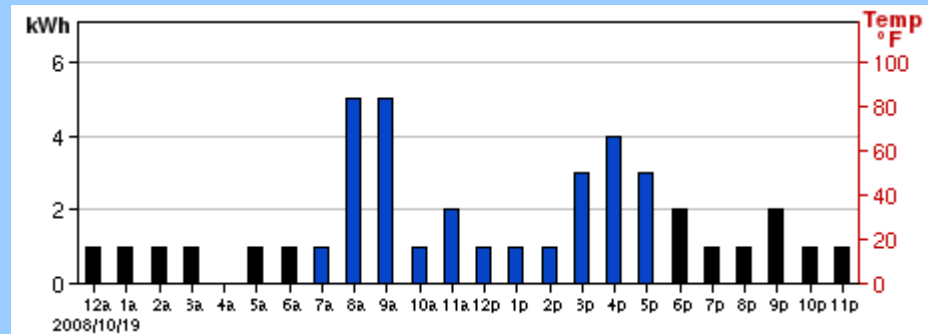
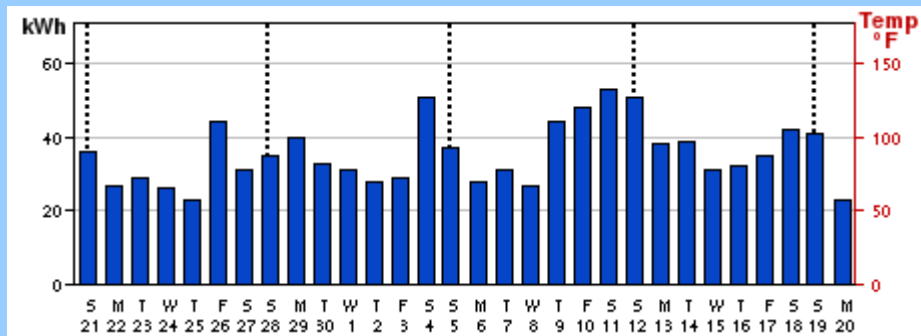
- The federal energy act of 2005 indicates utilities should invest in “Smart Metering”
- The “Smart Metering” should be capable of bi-directional or “net” metering to accommodate “behind-the-meter” generation.
- Also should be able to provide time-of-use metering, which will give the ability have rates vary with the pre-defined time periods.
- Ability to provide metering for “real-time” pricing where the rate can follow the market rates – and an indication should be given to the customer when rates are elevated

Automated Meter Reading

- East Grand Forks Water and Light began formally evaluating AMR systems 2004
- Upon reviewing various technologies, a combined water and electric, two-way, fixed radio network system was chosen in 2006
- Implementation and installation began in December 2006 and will be finished by the end of 2008

Automated Meter Reading

- The AMR system also allows the utility to help the customers with individual conservation efforts by giving the ability to give an hour-by-hour load profile, and also assists with bill disputes.



- In addition, the AMR system also will allow for automated outage reporting and identification.
- Automated meter reading also reduces vehicle emissions created by sending crews out to read meters

Questions, Comments, Suggestions?

Corey Thompson, East Grand Forks Water and Light
cthompson@eastgrandforks.net
218-773-0515