

# Cooling Coil Case Study

What was done?

An “economizer” coil was installed on the air intake of an existing “package water cooled air conditioner”.

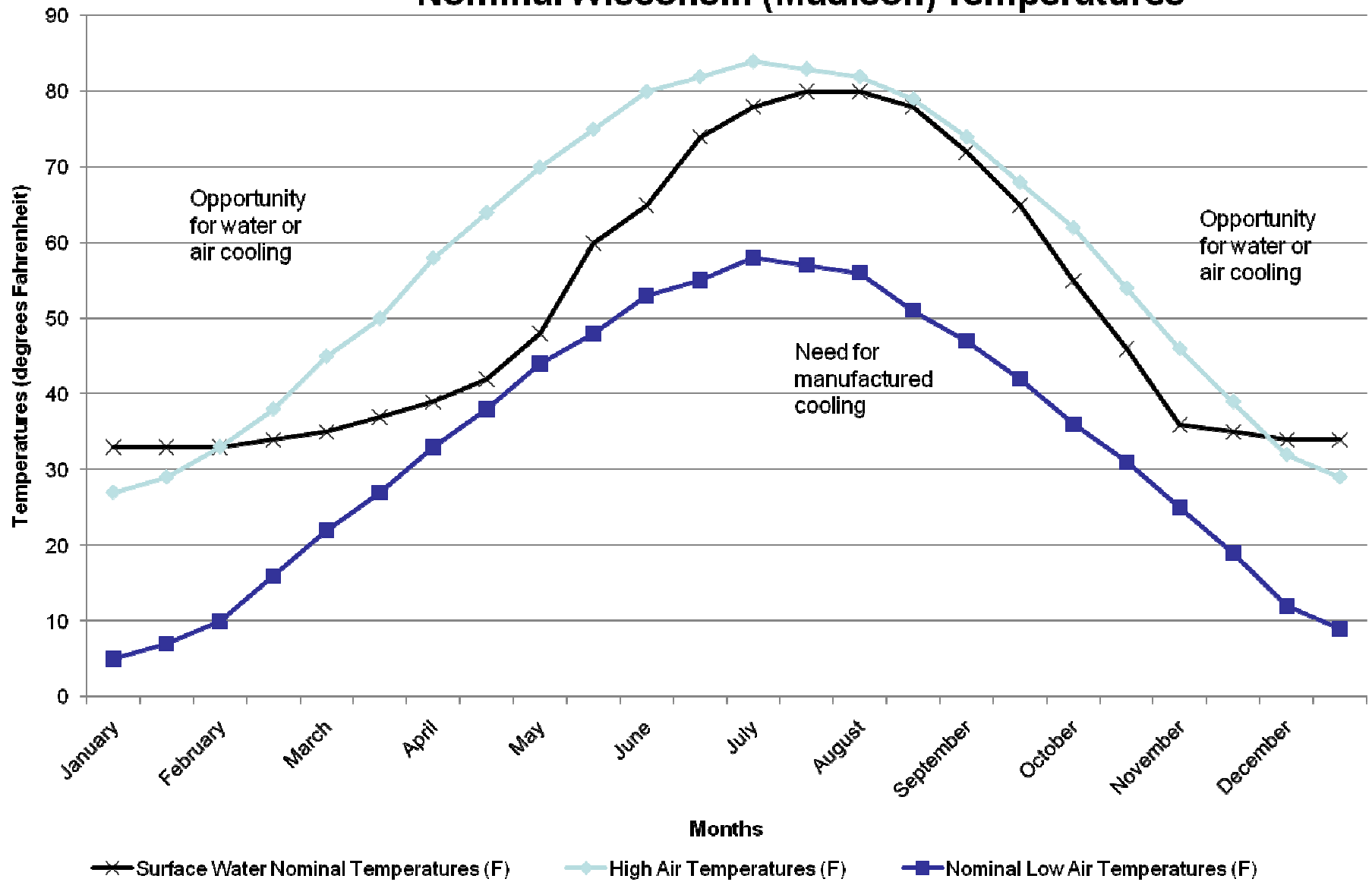
- Why did we do this?
- We did it to save/reduce the electricity that the air conditioning compressors were using to cool an MCC room inside a “warm” paper mill building. It also was expected to reduce maintenance costs on the unit (as well as make scheduling of preventative maintenance much easier. This was accomplished.

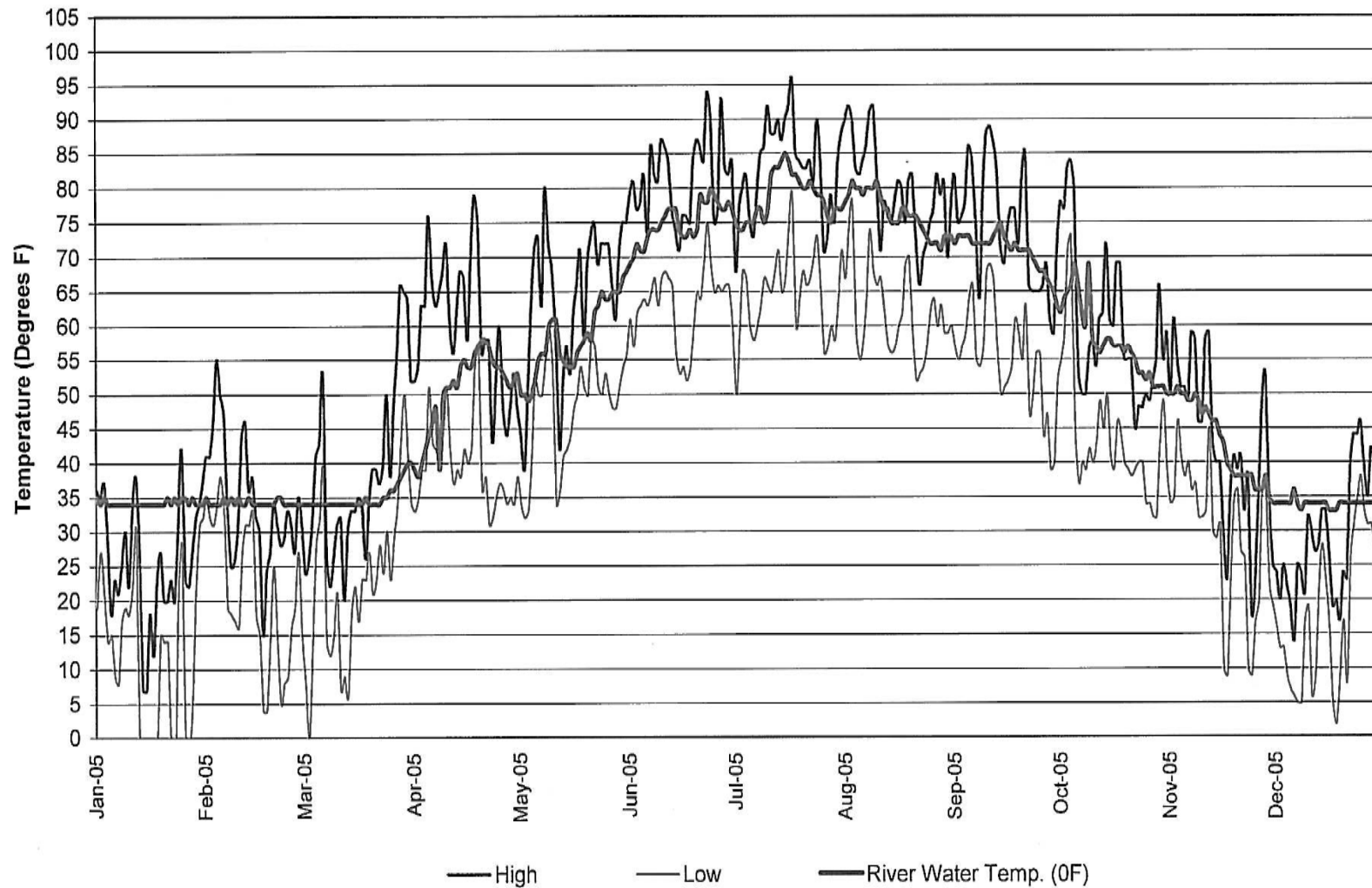
- The air circulation fan continued to operate all year.
- The air conditioner condensers got cooling water closer to the “70°F” temperature that they were designed for when they were in operation.
- Wisconsin surface water temperatures range from “32°F” in the winter to “86°F” in the summer. We cool rooms to “72°F”. Well water is about “50°F” all year around. Hence, the opportunity.

- The water flow doesn't change from what the condensers use for air conditioning.
- The installation cost will vary depending on installation circumstances. Likewise, the cost of electricity will vary depending on the facility. The payback period is usually in the 3-4 year range. A FOCUS incentive was used to reduce the payback period making the investment desirable.

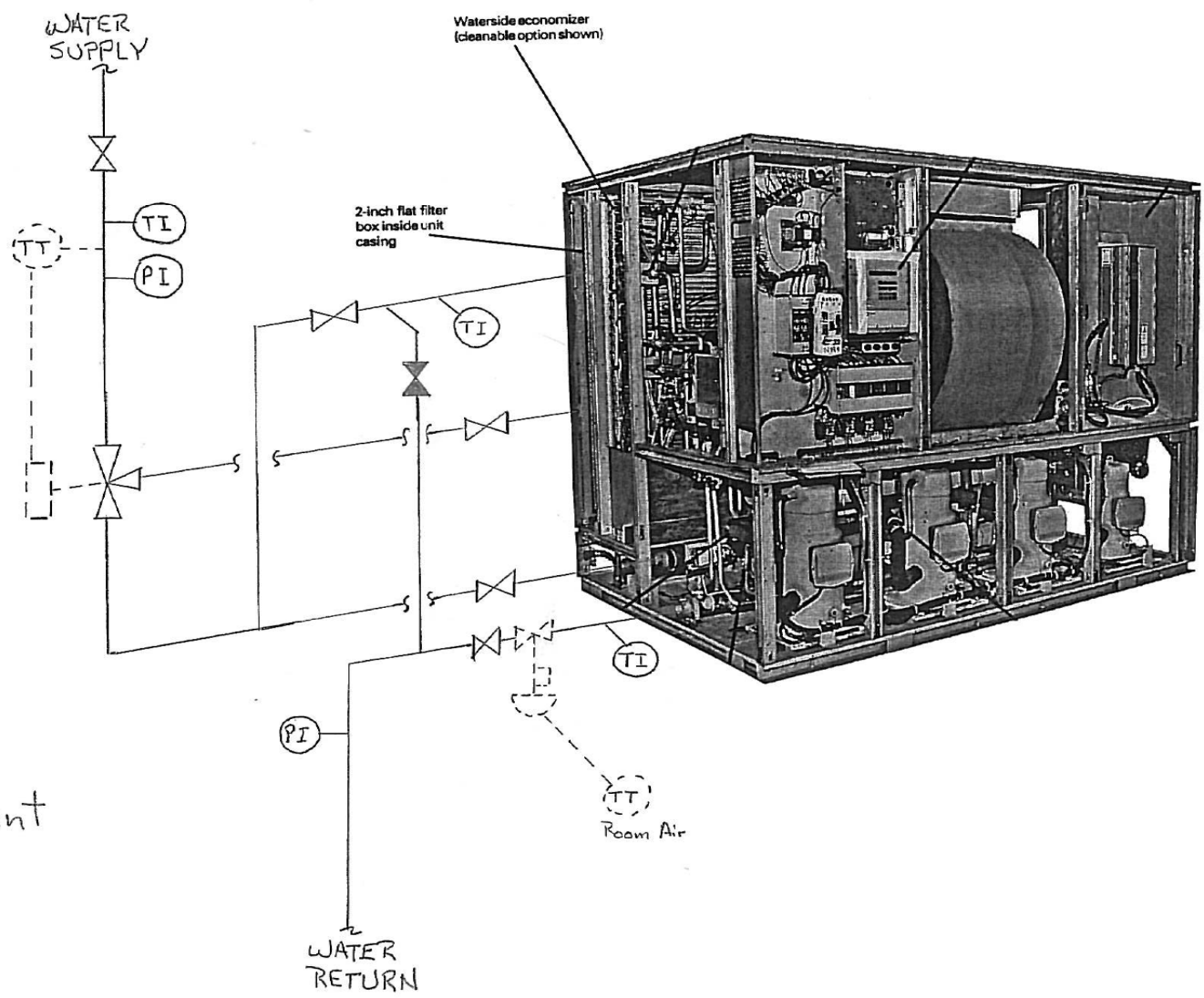
- Alternative:
- Use outside air for cooling. ... Issues with air quality (pulp mills) and humidity. Ducting costs may be an issue in some circumstances.

# Nominal Wisconsin (Madison) Temperatures





Actual Temperature Chart, Example



Piping  
Arrangement

--- ≡ Optional

# What is Focus on Energy?

- Wisconsin's statewide energy efficiency and renewable energy program
- Legislature created the program in 1999; expanded in 2005
- Helps implement projects that would not occur otherwise
- Customer eligibility based on their electric and/or natural gas utilities

# Focus on Energy Offers...

- Residential, Business and Renewable Energy Programs
  - Single and multifamily homes
  - Commercial, industrial, agricultural and school/government buildings
- Education, technical expertise and financial assistance

# Focus Accomplishments

## 2001 – 2007

- More than 54,000 businesses and 834,000 residents have participated in Focus
- More than 3,000 Wisconsin businesses partner with Focus to sell energy related goods and services
- By 2007, Wisconsin's residents and businesses were saving more than \$164 million *annually* thanks to Focus programs