

We Energies' generating system



COAL

Milwaukee County Power Plant

Milwaukee County is primarily a thermal plant. Its main purpose is to supply steam and chilled water.



Location:

This plant occupies more than 15 acres on the Milwaukee County Grounds in Wauwatosa, Wis.

Type of Plant:

Coal-based plant generates heating steam and electricity for customers and supplies steam to a chiller plant that generates chilled water for cooling.

Cost of Plant and Distribution System:

\$57 million

Number of Steam Generators:

5 boilers

Number of Turbine Generators:

3 generators

Year in Service:

Boilers 1-3:	1955	TG 1-2:	1955
Boiler 4:	1970	TG 3:	1964
Boiler 5:	2009		

Generating Capacity:

Generator 1:	3 megawatts
Generator 2:	3 megawatts
Generator 3:	5 megawatts

Total Net Generating Capacity:

11 megawatts

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Steam-Heating Capacity:

405,000 pounds of steam/hour

Steam-Heating Customers:

8 on County Grounds in Wauwatosa

Voltage:

Generator: 4,160

Step-Up Transformer: 13.200 and 24.900

Fuel:

Bituminous coal in 1, 2 and 3; natural gas or #2 fuel oil in 4; natural gas in 5.

Coal Handling:

Transportation: Self-unloading coal boats to Greenfield Avenue dock; trucks deliver coal to plant.

Storage: Three 250-ton capacity coal silos within plant.

Average Coal Use:

160 tons per day

Boilers:

Height: 6 stories

Furnace temperature: 2,300 degrees Fahrenheit

Steam temperature: 750 degrees Fahrenheit

Steam pressure: 600 pounds per square inch

Ash Handling:

98 percent of fly ash is removed by electrostatic precipitators and mechanical cyclone collectors. Bottom ash is removed by a vacuum removal system.

Chimney:

158-ft. chimney for each boiler

Control Room:

The control room houses monitoring systems to report exceptions from the steam and generation plant. Control boards are located on the operating floor in the vicinity of major equipment. The chiller plant is operated and monitored from the control room as well.

Chilled Water Units:

6 steam absorption units

8 compressed refrigerant units:

- 6 electric motor driven centrifugal compressor units
- 2 steam turbine driven centrifugal compressor units

Year in Service:

1979-2009

Production Capacity:

1,100-2,800 tons/unit

Distribution Systems:

Electric: Approximately 4 miles,
13.2 kv underground

Steam: 2 miles steam tunnels
11 miles steam piping

6 miles condensate piping

Chilled Water: 4 miles