# We Energies' generating system

January 2011

COAL

# Oak Creek Expansion Units 1 and 2

***Among the cleanest and most efficient coal-fueled power plants in the country.***

**Location:**
This plant occupies 1,000 acres of land on the shore of Lake Michigan, 20 miles south of Milwaukee.

**Type of Plant:**
Supercritical coal-based, base-load (typically operating 24 hours a day).

**Number of Active Generating Units:**
2 steam turbines

**Years in Service:**
Unit 1: 2010
Unit 2: 2011

**Generating Capacity:**
Unit 1: 615 megawatts
Unit 2: 615 megawatts

**Total Net Generating Capacity:**
1,230 megawatts

**Voltage:**

| | |
|---|---|
| Generator: | 25,000 |
| Step-Up Transformer: | 345,000 (Unit 1) |
| | 345,000 (Unit 2) |

# Oak Creek Expansion Units 1 and 2

**Fuel:**
Pulverized coal; natural gas or propane for boiler start-up

**Coal Handling:**

Transportation: Unit train
- Oak Creek Expansion Units 1 and 2 (OCXP): 130 coal cars per train
- Oak Creek Power Plant (OCPP): 142 coal cars per train

Storage: Indoor: 55,000 tons

Outdoor total: 750,000 tons
- OCXP: 330,000 tons
- OCPP: 420,000 tons

Preparation: OCXP: 10 pulverizers crush coal at 54 tons per hour each

OCPP: 16 pulverizers crush coal at 33 tons per hour each

**Average Coal Use:**
7,000-7,500 tons daily (depending on system demands)

**Boilers:**
One per turbine generator.

| | |
|---|---|
| Height: | 250 feet |
| Furnace temperature: | 2,080 degrees Fahrenheit |
| Steam temperature: | 1,050 degrees Fahrenheit |
| Steam pressure: | 3,700 pounds per square inch |

**Ash Handling:**
More than 99 percent of the fly ash is removed by a baghouse. Bottom ash is removed by a submerged conveyor.

**Chimney:**
A single chimney serves both boilers. Height: 530 feet.

**Cooling System:**
The site utilizes a combined cooling water intake system for the two facilities. Up to 1,560,000 (820,000 for OCPP and 740,000 for OCXP) gallons of water from Lake Michigan are used every minute to convert the exhaust steam from the turbines back into water for reuse. The water is returned to the lake.

**Control Room:**
All major functions in the plant are controlled by operators with computer support to continuously monitor and report on pressures, temperatures, flow rates, etc. In addition, the computer aids in start-up, shutdown, makes load adjustments during operation and records information for future reference.