We Energies

Oak Creek Power Plant (OCPP)

COAL
610 MW

The Oak Creek generating site is composed of two power plants: Oak Creek Power Plant (OCPP) and Elm Road Generating Station (ERGS). (See the ERGS fact sheet for information specific to that plant.)

Location: Generating site occupies 1,000 acres along Lake Michigan, 20 miles south of Milwaukee

Type of plant: Coal-based, base-load (typically operating 24 hours a day)

Initial cost: $246 million

Number of active generating units:
2 steam turbines
South plant service operations
Unit 5: In service 1959, retired 2024
Unit 6: In service 1961, retired 2024
Unit 7: In service 1965
Unit 8: In service 1967

Generating capacity: Unit 7: 298 megawatts
Unit 8: 312 megawatts

Unit 8 is Oak Creek's largest turbine-generator unit, measuring 125 feet long, 28 feet wide, and 31 feet high and weighing 1,600 tons. The entire turbine and generator are bolted together in one long shaft system. Unit 7 has two parallel shaft systems with two separate generators.

Total net generating capacity: 610 megawatts

Fuel: Pulverized coal; natural gas for boiler startup

Average coal use: 3,600-4,000 tons daily (depending on system demands)

Air quality control system (AQCS): Advanced AQCS systems were installed on all four generating units in 2012 for $750 million. The AQCS system consists of SCR and WFGD emission control components as noted below.

Selective catalytic reduction (SCR): SCR controls reduce emissions of nitrous oxides (NOx) by 50% to 60%. One SCR control was installed for each pair of generating units.

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Wet flue gas desulfurization (WFGD): WFGD controls are reducing sulfur dioxide (SO2) emissions by more than 90%. One WFGD system was installed for each pair of generating units.

Boilers: Units 5-8, one per turbine generator

Height:	18 stories (Unit 8)
Furnace temperature:	2,500 degrees Fahrenheit
Steam temperature:	1,050 degrees Fahrenheit
Steam pressure:	2,400 pounds per square inch

Ash handling: More than 99% of fly ash is removed by electrostatic precipitators. Bottom ash is removed by a hydraulic removal system.

Chimney: One 368-foot chimney supported all four generating units and continues to support units 7 and 8. Two separate flues inside the stack service a pair of generating units. The chimney discharges a water vapor plume as a result of the new emission-reduction controls.

Cooling system: The Oak Creek generating site uses a combined cooling water intake system for OCPP and ERGS. Up to 1.15 million gallons (410,000 for OCPP and 740,000 for ERGS) 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 are controlled by operators with computer support to continuously monitor and report on pressures, temperatures, flow rates, etc. The computer also aids in startup, shutdown, load adjustments and information for future reference.

Questions: Call 800-242-9137