

needs of more than half a million people. Dairyland's service area encompasses 62 counties in five states (Wisconsin, Minnesota, Iowa, Illinois and Michigan).

Dairyland operates five generating stations in Wisconsin: three coal-fired facilities, one natural gas/fuel oil and one hydroelectric. Dairyland also purchases energy for its members from two wind farms in Minnesota.

Energy Use Fact

The average residential energy use in the Dairyland system is 14,000 kilowatt-hours per year. JPM produces over 2 billion kilowatt-hours of electric energy each year. The Alma Station produces over 800 million kilowatt-hours of electric energy each year.

Contact Information

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Alma Site



**Dairyland Power Cooperative
Alma, Wisconsin**

**DAIRYLAND POWER
COOPERATIVE**

A Touchstone Energy® Cooperative 

The Alma Station

The Alma Station, located on the bank of the Mississippi River in Alma, Wis., was built in 1947 when the first two units of the station, Alma #1 and #2, were constructed. Together, they cost \$5.2 million to build and generated 40 megawatts (MW) of electricity—a



huge amount at the time. (One MW is enough power to light 10,000 100-watt lightbulbs for one hour.)

Alma #3 was built in 1950 and

Alma #4 in 1957. The largest unit of the Alma Station, Alma #5, came online in 1960 at 80 MW.

Today, the five units of the Alma Station generate a total of 214 MW of electricity.

Alma #4 was Dairyland's first reheat unit. Both Alma #4 and #5 take advantage of this improved technology that utilizes reheated steam, reducing fuel use.

The Alma Station is equipped with a cold-side electrostatic precipitator that removes nearly 100 percent of all particulate from the flue gas given off when the coal is burned.

John P. Madgett Station

The John P. Madgett Station (JPM) is located just south of the Alma Station on the Mississippi River. JPM was built in the late 1970s at a cost of \$179 million.



Named after the late John P. Madgett, general manager of Dairyland Power Cooperative from 1947 to 1978, JPM has been in operation since November 1979. The single-unit station has a generating capacity of 369 MW of electricity.

The hot-side electrostatic precipitator at JPM is equipped to remove nearly 100 percent of all particulate from the flue gas given off when the coal is burned.

Fuel for Electricity

The Alma Site (Alma Units 1-5 and JPM) burns blended coal that arrives by barge, train and truck from Wyoming and Utah. The barge coal moves by train to St. Louis and then up the Mississippi River about 575 miles to Alma.

After being crushed, the coal is fed into coal mills, also called pulverizers, where it is ground into a fine powder. The pulverized coal is then burned in the boilers to generate steam.

The entire steam cycle operates to rotate the turbine shaft, which is connected to the shaft of the electric generator. The rotation of the generator by the turbine is the origin of electric energy.

The Alma Off-site

This facility handles the small percentage of fly ash that is non-recyclable from the Alma and Genoa sites. Fly ash is a byproduct of coal generation. The ash is transported to the Off-site facility, located three miles from the two Alma generation stations.

Once ash is transported to the site, it is pressure-pumped from the truck trailer into a pair of holding silos, preceding treatment and disposal. The treatment process—moistening the ash—takes place in specially designed mixers located inside an adjoining process building.

The ash enters the building simultaneously from both holding silos via an air-slide conveyor and is directed to a mixer where a small amount of water is added in preparation for final disposal.

The low-moisture treated ash is hauled in dump trucks to a hillside disposal site near the facility. The ash is terraced

in six foot depths at a grade similar to the topography of the area. Each six foot lift is covered on the outer edges with about two and a half feet of soil and seeded as the terracing "climbs" the hillside. Drainage is controlled to prevent contaminated water from entering the environment.

The hillside feature is a radical departure from traditional ash disposal methods and was one of the first such operations in the electric utility industry.

Who We Are

The Alma Station, John P. Madgett Station and the Off-site facility make up Dairyland Power Cooperative's Alma Site. The Alma Site is located on the bank of the Mississippi River about 50 miles northwest of Dairyland's La Crosse, Wis., headquarters.

Dairyland Power Cooperative, formed in December 1941, is a generation and transmission cooperative, otherwise known as a G&T. A G&T does not market electricity directly to the consumer. Instead, it supplies electricity on a wholesale basis to locally owned cooperatives and municipal utilities.

There are 25 electric distribution cooperatives and 20 municipal utilities in the Dairyland system. These cooperatives and municipals, in turn, supply the energy

