Plant history

Otter Tail Power Company started generating electricity on the Otter Tail River in 1909. Four years later, we began building the hydroelectric plant at Hoot Lake. By then our electric system covered 2,000 square miles and included about 44 towns.

Otter Tail Power Company increased generating capacity as our number of customers grew. We built two 1,500-kilowatt steam generating units at Hoot Lake in 1921 and 1922. In the 1940s we replaced these units with the current steam generating units. We added two coal-fired units in 1959 and 1964.

About 40 Otter Tail Power Company employees operate and maintain the plant.

Generating electricity

Coal power

Each week we unload approximately 120 train cars of coal and crush the coal to the consistency of face powder. The pulverized coal enters the furnace that fuels the boiler, converting water to steam. The steam, at a pressure of up to 1,500 pounds per square inch and temperatures of up to 1,000 degrees, drives the turbine blades that, in turn, drive the generator. Inside the generator a huge spinning magnet, surrounded by coils of copper wire, creates a magnetic field and produces electricity.

Hydro power

Hoot Lake Plant’s hydroelectric unit is one of five hydro units we operate and maintain. It produces 0.3 megawatts (MW) of electricity. Other units include:

- Dayton Hollow Hydroelectric Plant, established in 1909, produces 0.9 MW.
- Pisgah Dam, established in 1918, produces 0.6 MW.
- Wright Dam, established in 1922, produces 0.4 MW.
- Taplin Gorge Hydroelectric Plant, established in 1925, produces 0.5 MW.

Hydroelectric power plants usually are built on rivers because hydropower is dependent on a high water drop and large amounts of water. The energy of flowing or falling water turns a wheel or turbine that is attached to a generator to produce electricity.
Respecting our environment
We take particular care in complying with environmental standards and have a strong compliance history. Our environmental control system includes these primary components:

- Electrostatic precipitators that remove approximately 99 percent of the fly ash (fine particles of ash, dust, and soot) before gas is released from the plant.
- An activated carbon injection system that reduces mercury emissions.
- Overfire air and low nitrogen oxide (NO\textsubscript{X}) burners that reduce nitrogen oxides.

Hoot Lake Plant also uses a multitude of other systems to balance commitment to reliable, cost-effective service with environmental responsibility.

The legacy of Hoot Lake Plant
Hoot Lake Plant plays a vital role in Otter Tail Power Company’s history of reliable and economical electric service. Unfortunately, new Environmental Protection Agency requirements don’t allow for economical upgrades to current systems. To continue a balanced mix of generation resources, Hoot Lake Plant will retire as a coal-fired facility around 2021. Otter Tail Power Company is exploring the most cost-effective location in our service area to build a new facility as a replacement, likely using natural gas as fuel.

### Key plant data

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
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<tbody>
<tr>
<td>2 Turbines</td>
<td>148,000 kilowatts</td>
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<tr>
<td>2 Generators</td>
<td>152,235 kilovolt-ampere</td>
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<tr>
<td>2 Boilers</td>
<td>1,119,000 pounds of steam per hour</td>
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<tr>
<td>Transmission outlet</td>
<td>128,800 volts</td>
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<tr>
<td>Fuel</td>
<td>Subbituminous coal and hydropower</td>
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<tr>
<td>Coal-handling system</td>
<td>Conveys 400 tons per hour</td>
</tr>
</tbody>
</table>

For more information
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