

# HOOT LAKE PLANT

RETIREMENT CELEBRATION



*Leaving a legacy of safe, reliable generation*

July 21, 2021

## Welcome! We're glad you're here.

On May 27 we retired Hoot Lake Plant, marking the end of 100 years of coal-fired energy generation at the site. The plant was a cornerstone in our company's history of generating safe, reliable, and affordable energy.

Today we reflect on and celebrate its contributions to our company, communities, and customers. Whether you worked at, visited, or simply supported Hoot Lake Plant's operations, we thank you for being a part of its legacy.

## Program

### Speakers

- Tim Rogelstad, President, Otter Tail Power Company
- Ben Schierer, Mayor, City of Fergus Falls
- Chuck MacFarlane, President and CEO, Otter Tail Corporation

### Reception

Please enjoy refreshments and conversations following closing remarks.

**Return shuttles to the parking lots are available until 11:45 a.m.**

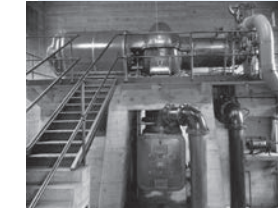
## Did you know?

- The boilers are taller than 12-story buildings.
- The stack is more than 22 floors high.
- During periods when the river's flow rate fell below 36,400 gallons per minute, or when the river temperature exceeded 86° F, we used cooling towers to recirculate plant cooling water and reject excess heat into the air.
- At peak use, we unloaded approximately 15 railcars of coal daily and crushed the coal to the consistency of face powder.

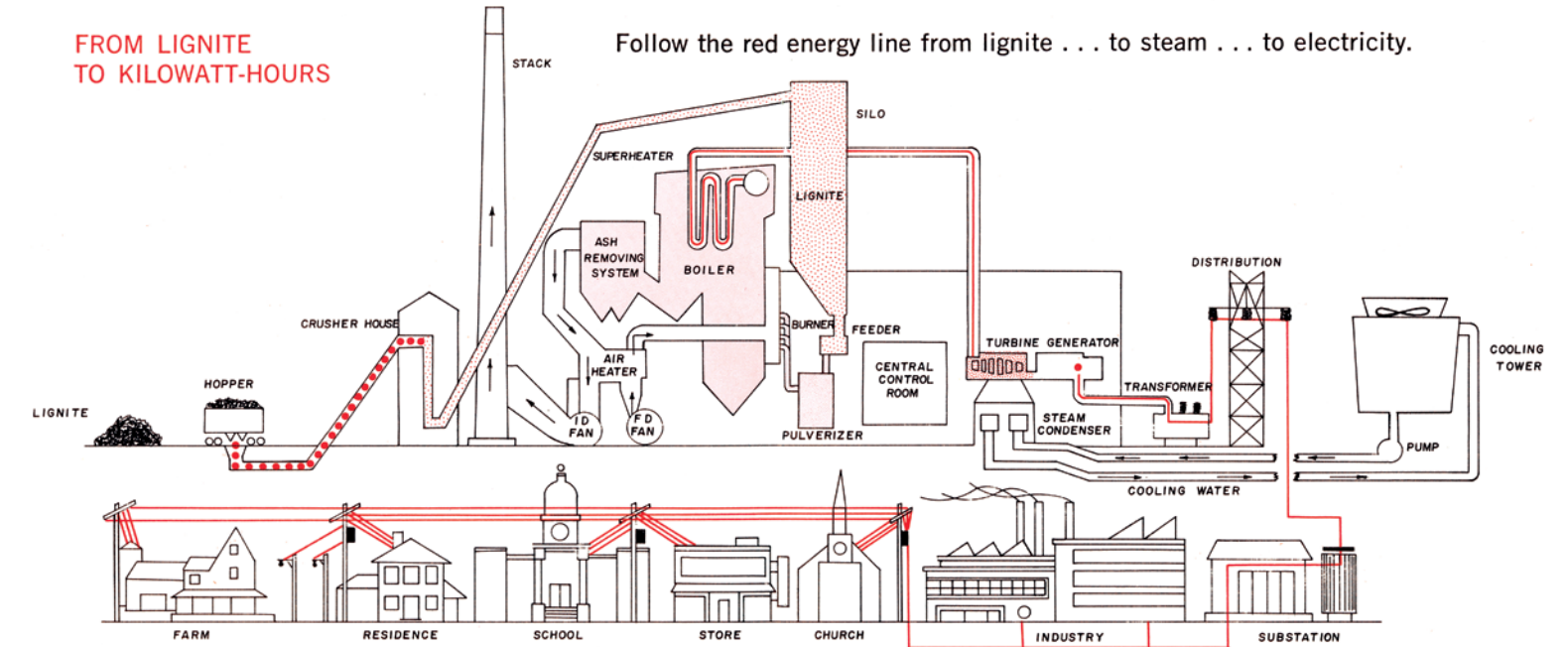


## How Hoot Lake Plant generated electricity

Pulverized coal entered 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° F., drove the turbine blades which drove the generator. Inside the generator a huge spinning magnet, surrounded by coils of copper wire, created a magnetic field and produced electricity.



The diagram below is from our 1970s-era Hoot Lake Plant tour booklet. We converted from lignite to sub-bituminous coal in the 1980s.



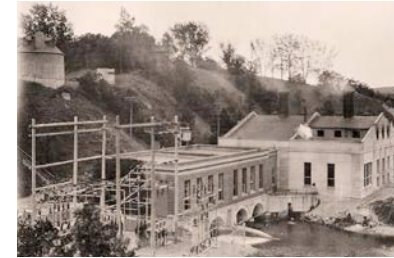
## Key plant data

2 Turbines	148,000 kilowatts
2 Generators	152,235 kilovolt-amperes
2 Boilers	1,119,000 pounds of steam per hour
Transmission outlet	128,800 volts
Fuel	Sub-bituminous coal and hydropower
Coal-handling system	Conveyed 400 tons per hour

### Brook Haus Chief Operator

*It's not about a single person [at the plant]. It's about a group of guys that helped the company provide a service for the area. **I just think they all need a round of applause for what they've done—for what we've done—over the years.***

# Hoot Lake Plant through the years



## Generating electricity for our customers

We started generating electricity at the Hoot Lake hydroelectric plant in 1914.

1914

## Introducing Unit 1

With the 7,500-kW Unit 1 on line, we replaced the 1921 and 1923 steam generating units in 1949 and 1950.

Unit 1 retired in 2006.



1948

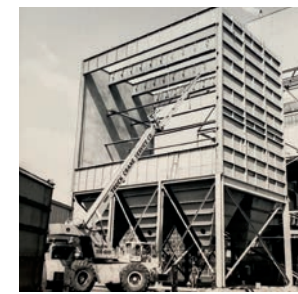
## Introducing Unit 2

Built to accommodate the rapidly increasing energy demands of our 100,000 customers, the 53,500-kW Unit 2 was the largest single unit on company lines at that time. During construction, approximately 175 men were employed with an average monthly payroll of \$112,000.

We completed the project at a total cost of approximately \$11.3 million—the cost of about 750 medium-priced homes. It could produce enough power to serve a city of 140,000.



1959



## Environmental stewardship

We installed an electrostatic precipitator that removed approximately 99% of the fly ash (fine particles of ash, dust, and soot) before gas was released from the plant.

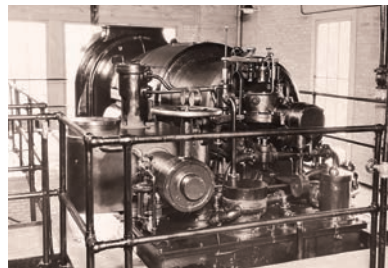
1972

2021

1921 & 1923

## Increasing generating capacity

As our number of customers grew, we increased generating capacity by building 1,500-kW steam generating units at the Hoot Lake site.



1955



## Engaging our communities

We've led tours of Hoot Lake Plant since at least the 1950s!

1964

## Introducing Unit 3

We completed Unit 3 at a cost of \$10.9 million. The peak labor force for construction included 158 men. The unit had a nameplate rating of 66,000 kW, but tests conducted shortly after construction demonstrated actual load-carrying capabilities in excess of 80,000 kW.

Units 2 and 3 greatly increased the plant's generation capacity from 5 MW to 145 MW to help accommodate significant growth.

COMPARISON OF YEARS 1922 AND 1955			
As an indication of the growth of the Company in the 33-year period between 1922 and 1955, the following figures will be of interest:			
	1922	1955	Ratio 1955 1922
Miles of Transmission Lines	050	6,500	10:1
Towns Served	110	478	4:1
Number of Customers	8,000	66,805	12:1
Yearly Output in KWH	17,205,857	604,907,000	35:1
Employees (General Office)	40	143	3.5:1
All Employees Present Line		934	
Stockholders	450	7,271	16:1

\* Includes Wheeling, Interchange and Purchased Energy.



The community joined us for an open house celebrating the addition of these two units, and more than 5,000 people toured the facility.

2013

## Planning for retirement

In October 2013 we announced the upcoming retirement of Hoot Lake Plant, as new Environmental Protection Agency requirements didn't allow for economical upgrades to current plant systems.

## Retiring the coal-fired facility

Hoot Lake Plant completed operations with 23 employees. Of those, some have or will retire, some transferred to other roles within our company, and some elected to pursue other opportunities.

We expect deconstruction of the plant to take 18 to 24 months, depending on weather and similar unknowns. We'll continue to use an office building and two storage buildings related to the hydro facility, as well as nearby lineworker training grounds. Safety and security of both residents and our property remain top priority during and after deconstruction.

Following deconstruction, the plant's former site will remain an open field in the short term.



# Hoot Lake Plant, we thank you.

Hoot Lake Plant employees in 1977.



Hoot Lake Plant employees in 2016.



## Mike Dougherty IDS

*I know to a lot of people this looks like an old industrial plant, but to engineers like me it was an engineer's dream.*

*I remember the first time I went to the plant. They needed some support for their Honeywell control system. Having never been there, I followed the directions through beautiful Fergus Falls and down Water Plant Road. As I rounded the corner I saw a power plant tucked in a beautiful setting. Little did I know that I would come to know and love this plant. Out of the many, many sites I have worked at, this is one I will always remember fondly.*

*As an engineer geek, I couldn't believe this plant. First, by walking through the walk-in gate into the water turbine-generator room. There was a turn-of-the-century hydro generator still generating power with its mechanical flyball governor and leather belt driving the exciter.*

***This plant is not just a slice of history, but many slices.***  
*I loved getting to see the 1940s pneumatic controls and stoker boiler of Unit 1.*

*Then I got to know the people at the plant. A great bunch of people and loved working with them. These units weren't like some of the giant plants I have worked at, but **the pride the people had for this plant was awesome.***

## Terry Graumann

Former Environmental Services Manager, retired 2012

*I was not located at Hoot Lake Plant during my working career, but I worked with a number of plant employees as part of my assigned general office responsibilities.*

***The fondest memories of Hoot Lake Plant are of its people.*** *They were dedicated, hardworking, resourceful individuals who were willing to rise to the challenges.*

*I am reminded of that resourcefulness in some of the pranks that they pulled with unsuspecting plant visitors, particularly when those visitors needed to bring their noon lunch. One had to take inventory of their lunch contents to make sure that the lunch that was packed in the morning was actually the lunch eaten at noon. Did I really pack an apple or was it an orange? Why were there only four and not five cookies in the lunch?*

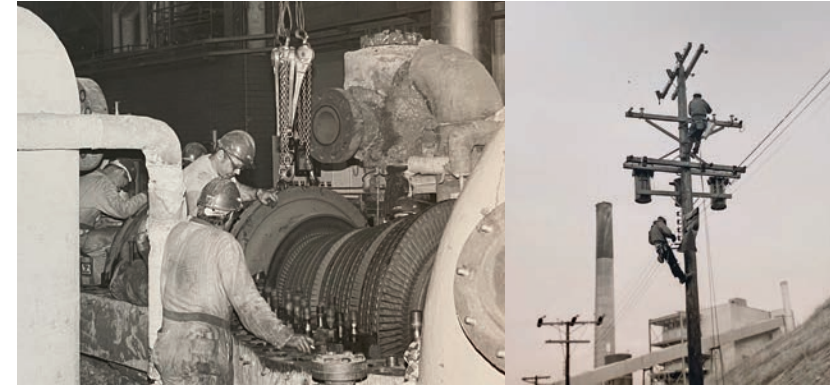
*One time in particular I remember biting into a sandwich and it would not bite. It turned out that someone had neatly cut clear plastic-wrap sized just smaller than a bread slice and then added it to the sandwich. Spirits would perk up during long days of emission tests if a fresh baked peach pie appeared.*

*I will miss the reassurance that the vapor plume on a cold winter day provided. But times are changing and other technologies—in existing as well as new locations—will continue to provide our electrical energy.*

## Ward Uggerud

Former Energy Supply Vice President, retired 2012

*One of the benefits of having a power plant there was just for electrical reliability. We had a generating station that had four generators and associated transmission lines that connected us to the north and to the south and to the east and to the west. **There was an undeniable reliability aspect to have sources of power—significant sources of power—that close.***



## John MacFarlane

Former President, retired 2010

*[Hoot Lake Plant] has always served the company and customers well and **everybody that worked there can be proud of the contribution they made to the company and to customers.***

*One of the things that comes up when I hear Hoot Lake Plant mentioned is the incredible safety record they had—13 years without a lost workday case. It was just phenomenal."*



Be sure to visit [otpc.com/HootLakePlant](https://otpc.com/HootLakePlant) for a virtual 360-degree tour and today's video documentary!