

SOUTH DAKOTA

TEN YEAR PLAN

Report BD02 - 6

Resource Planning Department

Otter Tail Power Company

June 2002

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June 24, 2002

South Dakota Public Utilities Commission
State Capitol Building
Pierre, SD 57501

Attention: Executive Director

Commissioners:

Subject: OTTER TAIL POWER COMPANY'S BIENNIAL TEN YEAR PLAN - JUNE 2002

Pursuant to the rules of the South Dakota Public Utilities Commission Energy Facility Plans ARSD 20:10:21, Otter Tail Power Company hereby files its Biennial Ten Year Plan.

With the above introduction, Otter Tail Power Company submits the following biennial ten year plan in accordance with ARSD 20:10:21 and Guidelines issued October 1977.

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INTRODUCTION

In accordance with the rules and regulations of the South Dakota Public Utilities Commission Energy Facility Plans ARSD 20:10:21, Otter Tail Power Company hereby files its Biennial Ten Year Plan.

Ten copies of this Biennial Ten Year Report are being filed with the Commission with enclosures. Notice of Filing of the plan is being sent to each of the state agencies and officers designated in Section 23 of the Energy Facility Plans.

SECTION 4 -- EXISTING ENERGY CONVERSION FACILITIES

A. Big Stone Plant

1. The Big Stone Plant is located in Grant County, South Dakota, approximately two miles west-northwest of Big Stone City, 1-3/4 miles from Big Stone Lake, and approximately two miles north of U.S. Highway 12. The site is in the central portion of Section 12, Township 121 N, Range 47 W.
2. The turbine-generator was built by Westinghouse and has a nameplate capacity of 414,590 kW at the generator terminals with inlet steam conditions of 2,400 psig, 1000 degrees F, a condenser pressure of 3.25 inches HgA, and 0% makeup.
3. Big Stone Unit #1 has a cruise rating of 450 MWs using the subbituminous coal. Net generation for the year 2000 was 3,507,344 MWh, and for 2001 was 3,458,451 MWh.
4. The Big Stone Plant appropriates its entire supply of water from Big Stone Lake. During calendar year 2000, 4435 acre-feet of water was appropriated, and during 2001, 3222 acre-feet was appropriated.
5. The Big Stone Plant continued to burn subbituminous coal in 2000 and 2001. The amount of subbituminous coal burned in 2000 was 2,130,536 tons and 2,080,563 tons in 2001. Big Stone also supplemented its coal supply by burning alternative fuels totaling about 3% of its annual fuel requirements. Tire-derived fuel (TDF) and renewable resource material (RRM) are burned at Big Stone Plant. TDF consumption for calendar year 2000 was 43,959 tons and for 2001 was 51,866 tons. In addition, 17,013 tons of RRM was burned in 2000 and 27,390 tons of RRM was burned in 2001.
6. Otter Tail Power does not have a projected date of removal from service for the Big Stone unit.

NOTE: Big Stone Plant is jointly owned by Otter Tail Power, Montana-Dakota Utilities Co., and Northwestern Public Service. Otter Tail Power serves as the operating agent for the unit.

3. A section of the Big Stone-Hankinson 230 kV line starting at a point on the South Dakota line in Section 26, Township 129, Range 50, to a point .3 miles north of the Roberts County Highway #23 in Section 11, Township 127, Range 50, a distance of 22.62 miles, all in Roberts County. This is a wood-pole, H-frame line. No date has been projected for the removal of this line. Maps were provided with the 1998 plan.

SECTION 7 -- PROPOSED TRANSMISSION FACILITIES

No transmission 230 kV and above is under consideration in South Dakota during the ten year period.

SECTION 8 -- COORDINATION OF PLANS

In 2001 Otter Tail Power Company and other transmission-owning members of the Mid-Continent Area Power Pool (MAPP), voted to integrate with the FERC approved Midwest Independent Transmission System Operator (MISO). MISO is headquartered in Indianapolis, Indiana. The objective of MISO will be to continue to coordinate the planning and operation of transmission facilities to provide reliable and economic electric service to it's members customers in a broader Midwest region. MISO also has the responsibility and authority over the process to interconnect new or expanded generation to the MISO transmission system. MAPP, located in St. Paul, MN will continue to operate as part of the MISO. MAPP will serve as a reliability organization responsible for establishing standards in accordance with National Energy Reliability Council (NERC) standards. In addition, Otter Tail Power is involved from time to time with other utilities serving load in South Dakota on various study groups and task forces.

Montana-Dakota Utilities Co., Northern States Power Company, Northwestern Public Service Company, Otter Tail Power Company, Minnkota Power Cooperative, and Basin Electric Cooperative are members of the Dakotas-Montana Power Suppliers Group. This group was formed in 1979 to provide regional planning coordination.

SECTION 9 -- SINGLE REGIONAL PLANS

The proposed facilities mentioned in Sections 5 and 7 comprise a part of the Mid-Continent Area Power Pool (MAPP) Regional Plan.

SECTION 10 -- SUBMISSION OF REGIONAL PLAN

The Mid-Continent Area Power Pool publishes a ten-year map entitled 'Principal Power Supply Facilities Existing and Authorized-10Year Map'. Facilities to be added during the ten-year period

by a process similar to that employed in a distillery. Benefits of the brine concentrator include reduced disposal volume of plant wastewater and improved cooling pond water quality.

Diking of oil storage tanks and larger chemical storage facilities will prevent contamination of large areas of soil or water should rupture of a storage tank occur. All underground petroleum storage tanks have been removed and replaced where necessary with above ground storage tanks. All above ground tanks are in compliance with existing requirements of the Department of Water and Natural Resources.

Otter Tail Power will continue to cooperate with the South Dakota Public Utilities Commission, Department of Health and Department of Water and Natural Resources in an effort to site and operate future power plants and transmission lines in an environmentally acceptable manner, contingent with the needs of a reliable supply of electrical energy.

Social and Economic Effects

Social and economic effects are very closely related. In fact, they are often referred to as "socioeconomic" effects. Because of their close relationship, the socioeconomic effects will be discussed jointly.

From experience gained in past construction projects, such as Big Stone Plant, and Coyote Station located near Beulah, North Dakota, Otter Tail Power has been made aware of the socioeconomic effects of large construction projects. Pre-construction and post-construction socioeconomic monitoring was conducted in the vicinity of Big Stone in order to evaluate the effect of a large construction force on such things as the business community, housing, and essential services such as hospital and dental care. This type of monitoring was employed in conjunction with the construction of Coyote Station. Should Otter Tail Power need to construct a large facility in South Dakota, socioeconomic monitoring would be initiated to identify potential problem areas and direct the proper steps to problem solving.

In order to aid the economy in the area of construction, it has been Otter Tail Power's policy to utilize the local labor force and local contractors as much as possible. Local contractors also provide essential services during plant operations.

Health Effects

Various governmental regulations, including, for example, primary and secondary ambient air quality standards and water quality standards, have been promulgated to protect the public health and welfare. Otter Tail Power will comply with these regulations. In addition, Otter Tail Power contributes to research organizations, such as the Edison Electric Institute, which work to identify potential health and environmental problems as they relate to the electric utility industry.

Total installations include 39,800 radio receivers and 39 radio transmitters on the Otter Tail Power system. There are 4,125 of these receivers and 5 transmitters located in the state of South Dakota.

The radio receivers are used to control approximately 36,500 (about 3,900 in S.Dak.) electric water heaters, 8,990 (630 in S.Dak.) small dual fuel accounts (less than 80 kW), 290 (18 in S.Dak.) large dual fuel accounts (greater than 80 kW), 1040 (81 in S.Dak.) thermal storage accounts, and 6,626 (458 in S.Dak.) residential demand control customers on Otter Tail Power Company lines. The radio signal to control these loads is initiated at the System Operations Center in Fergus Falls, Minnesota.

Two-hundred and seventy-nine (23 in S.Dak.) customers with thermal storage loads have chosen the fixed time of delivery rate where service is provided from 11 PM to 7 AM and controlled by a contact from the meter register.

SECTION 14 -- LIST OF REPORTS

No reports or studies have been filed with federal or state agencies relating to the proposed facility mentioned in Section 5. Should any of the other facilities mentioned be scheduled for construction, Otter Tail Power Company, when acting as the lead agency, will file all studies and reports then required with governmental agencies.

SECTION 15 -- CHANGES IN STATUS AT FACILITIES

There is no change in the Big Stone Plant status. The unit continues to be operated as a base-loaded unit for Otter Tail system load. Lake Preston continues to be operated during peak demands and line stability conditions. In the summer of 2001 an inlet fogging system was added at Lake Preston to increase monthly summer ratings.

Table 1, on page 10, shows the OTP 2002 Seasonal Load & Capability forecast. This information is reported to MAPP for publication in the April 1 Load & Capability Report. The table represents data from the Base Scenario of the Company's Long Range End-Use Forecast. Included in the table are projected peak savings from Market Planning & Pricing Department's Conservation Forecast, and the Load Management Forecast.

The 2002-2016 MAPP Load & Capability Forecast Report shows Otter Tail surpluses and deficits by season. The surpluses and deficits shown in Table 1 use Schedule L (Load Management) to reach a target of 30 MW of surplus capacity. The amount of Schedule L used may not exceed the maximum load management capability. In 2001, Otter Tail Power had a system peak of 630 MW on February 16th for hour ending at 9 a.m.

Otter Tail Power has purchased summer season peaking capacity for the year 2002. Otter Tail has also purchased summer and winter capacity from Manitoba Hydro Electrical Board for May 1997 through April 2005 and also for May 1, 2000 through April 30, 2010. Further detailed information may be obtained from Otter Tail Power's 2002 Resource Plan filed with the Minnesota Department of Commerce. A copy of the 2002 Resource Plan is provided to the South Dakota Public Utilities Commission.

SECTION 17 -- CHANGES IN ELECTRIC ENERGY

Refer to Section 16.

SECTION 18 -- MAP OF SERVICE AREA

A map of the Otter Tail Service Area is shown below.

