



Central Power Electric Cooperative, Inc.

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June 10, 2016



Mr. Darrell Nitschke
Executive Secretary
North Dakota Public Service Commission
600 East Boulevard Avenue
Department 408
Bismarck, ND 58505-0480

Dear Mr. Nitschke:

Please find the original and nine copies of Central Power Electric Cooperative's Ten Year Plan as required for Public Service Commission review. Feel free to contact me at 701-837-7421 or on my cell phone at 701-721-1421 with any questions or concerns.

Sincerely,

A handwritten signature in blue ink that reads 'Mark Sherman'.

Mark Sherman, P.E.
Manager of Operations & Engineering

Enclosures

1 **PU-16-296** Filed: 6/13/2016 Pages: 8
2016 Ten Year Plan

Central Power Electric Cooperative, Inc
Mark Sherman, P.E.

CENTRAL POWER ELECTRIC COOPERATIVE, INC.

TEN YEAR PLAN

2016

**SUBMITTED TO THE
NORTH DAKOTA
PUBLIC SERVICE COMMISSION**

**Central Power Electric Cooperative, Inc.
525 20th Avenue Southwest
Minot, ND 58701
(701) 852-4407**

INTRODUCTION

Central Power Electric Cooperative respectfully submits this ten-year plan to the North Dakota Public Service Commission in accordance with the format guidelines issued in November, 1979, and as required by Section 49-22-04 of the North Dakota Century Code.

Central Power is a wholesale transmission cooperative that serves all of the power supply needs of six North Dakota rural electric distribution cooperatives. Central Power has a contract with the Western Area Power Administration (WAPA) for approximately one-tenth of Central's power supply and an all requirements contract with Basin Electric Power Cooperative for all power supply requirements over and above the power supplied by WAPA.

Should the Commission require any additional information regarding this ten year plan, Central Power stands ready to furnish whatever further information is required.

SECTION A – Existing Energy Conversion Facilities

Central Power does not own or operate any energy conversion facility.

SECTION B – Energy Conversion Facilities Under Construction

Central Power does not have any energy conversion facility under construction.

SECTION C – Proposed Energy Conversion Facilities on Which Construction is Intended Within the Ensuing Five Years

Central Power does not have any plans to construct an energy conversion facility.

SECTION D – Proposed Energy Conversion Facilities During the Next Ten-Year Time Period

Central Power has not proposed any energy conversion facilities for the next ten-year period.

SECTION E – Existing Transmission Facilities (Electric)

1. Central Power is not required to file a Federal Energy Regulatory Commission Form 12.
2. Central Power has six transmission facilities in excess of 115 kV:

<u>Facility</u>	<u>In Service Date</u>
Harvey 230 kV Substation	December 2, 1986
Underwood 230 kV Substation	December 4, 1981
Wilton Wind 230kV Transmission Line	December 3, 2005

<u>Equipment in Foreign Substations</u>	<u>In Service Date</u>
Hankinson 230 kV Substation (Otter Tail)	October 1, 1984
Wahpeton 230 kV Substation (Otter Tail)	December 1, 1985

<u>Equipment in Jointly Owned Substations</u>	<u>In Service Date</u>
Ward 230kV Substation (WAPA)*	February 2006

*Capital Electric Cooperative, Inc. (Capital) became a fully consolidated member of Central Power in 2014 at which time Central Power assumed ownership and maintenance responsibilities for all of Capital's transmission and substation facilities. The Ward 230kV substation was jointly owned by Capital and WAPA until Central Power assumed ownership of the Capital owned facilities within the Ward substation in 2014.

3. Central Power has no plans to retire any existing transmission facilities within the next ten-year period.

SECTION F – Existing Transmission Facilities (Pipeline)

Not applicable to Central Power

SECTION G – Proposed Transmission Facilities on Which Construction is Intended Within the Ensuing Five Years (Electric)

Central Power does not plan to construct any transmission facilities in excess of 115kV in the next five years.

SECTION H – Proposed Transmission Facilities on Which Construction is Intended Within the Ensuing Five Years (Pipeline)

Not applicable to Central Power.

SECTION I – Proposed Transmission Facilities During the Next Ten-Year Time Period (Electric and Pipeline)

Central Power has no proposed transmission facilities in excess of 115-kV.

SECTION J – Regional Coordination

1. Central Power is a preference power customer of the Western Area Power Administration (WAPA) and a member of Basin Electric Power Cooperative. Central holds an all-requirements contract with Basin Electric for power supply above the amount provided by WAPA. Central is thus relieved of the responsibility for power generation and is able to benefit from Basin's and WAPA's comprehensive network of 115-kV, 230-kV, and 345-kV transmission facilities used in the delivery of power to Central's facilities.

Central Power, through its membership in Basin Electric and its association with WAPA, participates in the regional power supply network, and has worked with Basin and WAPA to help develop their outstanding record of regional power supply and transmission planning with all electric utilities serving the area. Central Power's cooperation with its power suppliers assures maximum coordination with the Department of Energy, Montana Dakota Utilities Company, Otter Tail Power Company, and the members of the Southwest Power Pool, Inc. (SPP).

2. Central Power works with Basin Electric Power Cooperative – Central Power's all supplemental requirements power supplier – in reviewing power

planning arrangements and assisting with the preparation of forecasts of Central Power's future load requirements.

3. Proposed facilities would be those that meet criteria to serve Central Power's six distribution members from a generation and transmission network that has been developed as a regional plan. Future facilities would be designed to utilize parts of other electrical utility systems, as well as Central Power-owned facilities. The other electrical systems are as follows:

Basin Electric Power Cooperative
Western Area Power Administration
Montana Dakota Utilities Company
Xcel Energy (Northern States Power Company)
Otter Tail Power Company

4. Central Power recognizes that the cost and construction difficulties associated with new facilities make coordinated planning as important now as at any time in the past. We would recommend that long range planning continue to include input from and cooperation between all utilities, industry, state planning agencies and state regulatory agencies.

SECTION K – Environmental Information

1. Central Power's environmental awareness has greatly influenced and shaped the methods used in planning, routing and locating the facilities built by the cooperative. Central Power has long been concerned over the impact of its facilities on the people in its service area – who are, for the most part, its member-owners – and on the environment in which these people live.

Central has developed methods of line routing, procedures for public meetings and construction practices that closely follow the guidelines for transmission line routing and facility siting developed under the North Dakota Plant and Transmission Siting Act, and utilizes these guidelines as are relevant for 43.8-kV, 60-kV, 69-kV and 115-kV facilities that do not come under the requirements of this Act. Central will follow the requirements of the guidelines in the planning, routing and construction of all facilities in excess of 115-kV. In this endeavor, Central Power will employ its own personnel, reference advice from the North Dakota Public Service Commission, utilize advice and help from Basin Electric and utilize the help of hired expert consultants to meet all of the requirements of this Act.

SECTION L – Projected Demand for Service

1. Central Power's historical peak loads are shown in the following table. Central Power is a winter peaking utility and the table therefore represents peaks from each winter season.

Historical Annual Peak Demand

Winter Season	Peak (MW)	Annual Year to Year Growth %	Cumulative Overall Growth %
2006/07	273	0	0
2007/08	297.4	8.9%	8.9%
2008/09	322	8.3%	17.9%
2009/10	328.6	2.0%	20.4%
2010/11	330.6	0.6%	21.1%
2011/12	373.8	13.1%	36.9%
2012/13	377.4	1.0%	38.2%
2013/14	479.3*	27.0%*	75.6%*
2014/15	463.7	-3.3%	69.9%
2015/16	438.2	-5.5%	60.5%

*The 2013/14 load values are skewed, when compared to prior years, by the fact that Capital Electric Cooperative became a fully consolidated member of Central Power on January 1, 2014 and began purchasing 100% of their power from Central Power instead of 25% of their power in previous years. As a comparison, if Capital Electric's 2013/14 purchases were reduced by 75% to their pre-2014 purchase levels, Central Power's peak would have been 421.2 MW which would have resulted in an 11.6% Annual Year to Year Growth percentage.

All RUS electric distribution and power supply borrowers must conduct Load Forecasts which are used in engineering and financial studies, including long-range planning, system work plans, rate studies, financial forecasts, and any studies in support of loan applications. Central Power's 2016 update of the 2014 Load Forecast was prepared in accordance with RUS general guidelines and the procedures specified in the Load Forecast work plan submitted to and approved by RUS.

The Load Forecast was conducted according to consumer classification, including residential, oil related commercial, irrigation, small commercial and industrial (50 KVA or less), large commercial and industrial (larger than 50 KVA), public building, residential-seasonal, security lights, public streets and highway lighting. Future kWh usage per average consumer is projected for

each classification and based on an econometric model that was developed taking into consideration factors that statistical and economic analysis indicates has historically influenced Central Power member's load.

The total projected usage for each consumer classification is obtained from the result of the projected consumer and average use per consumer. The cooperatives' total power requirements are then calculated based on the individual consumer classification totals.

Projected Annual Peak Demand

Winter Season	Projected Peak (MW)
2016/17	468.3
2017/18	482.5
2018/19	500.0
2019/20	513.7
2020/21	522.6
2021/22	532.8
2022/23	543.2
2023/24	553.4
2024/25	564.1
2025/26	574.6

2. Central will continue to meet its projected peak demands through the purchase of power from the Western Area Power Administration and from Basin Electric.
3. Central's load centers are the distribution substations that serve the distribution needs of its members.