



**BASIN ELECTRIC  
POWER COOPERATIVE**

# **SOUTH DAKOTA TEN-YEAR PLAN**

**July 1, 2000**

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**20:10:21:04**

**EXISTING ENERGY CONVERSION FACILITIES**

1. Spirit Mound Station, located six miles north of Vermillion, SD, was declared available for commercial operation on June 30, 1978.
2. The station is composed of two combustion turbines, fired with number 2 fuel oil obtained from Midwest markets. The nameplate capacity of each unit is 60 MW; the units currently have a net rating of 52 MW each.
3. Spirit Mound Station was constructed primarily as a peaking unit to be used as reserves during outages of other Basin Electric or Mid-Continent Area Power Pool (MAPP) resources. Therefore, operation of the station is limited. Net generating production in 1998 was 13,607 MW hours (MWh) and 11,448 MWh in 1999.
4. Spirit Mound Station does not require water for production of electricity.
5. Spirit Mound Station consumed 1,342,640 gallons of fuel oil during 1998, and 1,202,723 gallons during 1999.
6. A projected service removal date for Spirit Mound Station has not been determined.

**20:10:21:05**

**PROPOSED ENERGY CONVERSION FACILITIES**

No activities are proposed for energy conversion facilities at this time.

**20:10:21:06**

**EXISTING TRANSMISSION FACILITIES**

<u>Location</u>	<u>Type</u>	<u>Conductor</u>	<u>Voltage</u>
Leland Olds-Groton-Watertown, SD	Steel Tower	2183.5 MCM	345 kV
Leland Olds-Ft. Thompson, SD	Steel Tower	2183.5 MCM	345 kV
Antelope Valley-Broadland	Steel Tower	2-2306 MCM	345/500 kV*
Philip-Philip Tap, SD	Wood Pole	954 MCM	230 kV
Broadland-Huron, SD	Steel Tower	2306 MCM	230 kV
Groton, SD Substation			345/115 kV
Spearfish-Yellow Creek, SD	Wood/Steel Pole	1272 MCM	230 kV
Yellow Creek, SD-Osage, WY	Wood/Steel Pole	1272 MCM	230 kV

Retirement dates on these facilities are indeterminate.

- \* The Antelope Valley-Broadland transmission line is constructed for 500 kV operation but is currently being operated at 345 kV. Operation at 500 kV is planned if an Antelope Valley Station Unit 3 is constructed.

**20:10:21:07**

**PROPOSED TRANSMISSION FACILITIES**

No construction of transmission facilities is anticipated.

**20:10:21:08**

**COORDINATION OF PLANS**

Basin Electric provides capacity and energy above WAPA's allocations to those preference customer cooperatives who have executed electric service contracts with Basin Electric. In order to provide service Basin Electric must augment WAPA's existing transmission system. Existing transmission facilities listed in section 20:10:21:06 are coordinated facilities which tie into WAPA's existing transmission system. The Miles City, MT, to New Underwood, SD, line constructed by WAPA is also a coordinated transmission line which provides service to Basin Electric, Montana-Dakota Utilities Co. and WAPA customers. The Groton 345/115 kV substation constructed by Basin Electric provides Northwestern Public Service Company and Heartland Consumers Power District with additional capacity in the Aberdeen-Groton area.

**20:10:21:09**

**SINGLE REGIONAL PLAN**

The Spearfish-Yellow Creek and Yellow Creek-Osage 230 kV lines are part of a regional plan with Black Hills Power and Light Company to provide transmission service and electric power to consumers of Basin Electric's member cooperatives and Black Hills Power and Light in the Spearfish-Deadwood-Rapid City-Hot Springs area of South Dakota.

**20:10:21:10**

**SUBMISSION OF REGIONAL PLAN**

Future joint transmission studies between Basin Electric and Black Hills Power and Light which show the potential need for transmission to support the northeast area of Wyoming and the Black Hills area of South Dakota will be submitted to the commission.

**Coordinated Planning**

Basin Electric and Black Hills Power and Light Company executed an Agreement for Transmission Service and the Common Use of Transmission Systems dated January 1, 1986. In addition to the use of each others transmission system, this agreement provides for the establishment of a "high voltage planning committee" to jointly plan, coordinate and construct joint facilities to service areas which overlap both utilities. The Spearfish-Yellow Creek and Yellow Creek-Osage 230 kV lines are examples of coordinated planning.

Member cooperatives of Basin Electric have a common service area with MDU in the western half of North Dakota and a portion of South Dakota. In order to avoid the duplication of transmission facilities, an agreement was entered into on January 1, 1972, which provides for joint construction and use of transmission facilities. This agreement provides for studies to be performed every two years to determine what additional transmission will be required to meet area load growth. The agreement calls for the sharing of facilities on the basis of each utility's respective projected loads.

The following facilities represent a partial listing of coordinated planning with MDU.

- a) Leland Olds-Mallard 230 kV Line
- b) Logan (ND)-Tioga (ND) 230 kV Line
- c) Miles City (MT)-Baker (MT)-Bowman (ND)-Hettinger (ND)-Bison (SD)-New Underwood (SD) 230 kV Line
- d) Wishek (ND) Junction 230/115 kV Substation
- e) Northwest Mandan (ND)-New Salem (ND) 115 kV Line
- f) Medora (ND) 230/41.6 kV Substation
- g) Dawson (ND) 230/41.6 kV Substation (Herbert Weber)
- h) Dickinson 230/115/41.6 kV Substation
- i) Antelope Valley-Charlie Creek (ND) 345 kV Line
- j) Logan (ND)-Kenmare (ND) 115 kV Line
- k) Dickinson (ND)-Hettinger (ND) 115 kV Line
- l) Whitlock (SD) 230/41.6 kV Substation
- m) Glenham (SD) 230/115/41.6 kV Substation Addition

The Miles City-Hettinger-New Underwood, SD, 230 kV line is another example of coordinated planning. This line was jointly planned and constructed with WAPA, MDU and Basin Electric. Basin Electric and MDU each have 25% capacity rights and WAPA owns and has capacity rights to 50% of the line.

### Mid-Continent Area Power Pool (MAPP)

The Mid-Continent Area Power Pool (MAPP), operates as a Regional Reliability Council and Power Pool to further the reliability and other benefits of interconnected operations among a large number of entities engaged in the electric utility business in the MAPP region. Basin Electric participates on various committees which review the transmission adequacy and plans of area utilities as a function of the Mid-Continent Area Power Pool.

The Transmission Planning Subcommittee (TPSC), which coordinates MAPP's ten-year plan, has formed five sub-regional working groups whose primary purpose is to perform coordinated transmission planning. The five sub-regional planning groups are:

- Red River Valley
- Missouri Basin
- Upper Mississippi Valley
- Nebraska
- Iowa Transmission Working Group

The Missouri Basin Sub-Regional Planning Group includes utilities in the North and South Dakota area. The Red River Valley Sub-Regional Planning Group includes utilities in Northeastern North Dakota and Western Minnesota. In compliance with NERC planning standards, the working groups are required to develop a coordinated ten-year plan for MAPP every two years for their specific regions. These ten-year plans evaluate the adequacy of existing interconnected systems to support load growth and provide an indication of the ability of the system to meet regional reliability criteria.

Basin Electric also participates on the Design Review Subcommittee which ensures that long term reliability of the MAPP system is not adversely affected by changes to generation and transmission facilities. Many other MAPP committees, in which Basin Electric is involved also review the transmission, generation, and operations of the MAPP interconnected system.

### Mid-West Electric Consumers Association

Basin Electric Power Cooperative is a member of the Mid-West Electric Consumers Association (Mid-West). Mid-West, which was founded in 1958, is a regional coalition of consumer-owned electric utilities that purchase power from the federal multi-purpose projects in the Missouri River Basin. Mid-West's Water & Power Marketing Committee meets throughout the year to discuss and review planned additions of Mid-West member utilities.

## Other

Basin Electric Power Cooperative is continuing to work with area utilities to form an Independent System Operator (ISO) and area wide transmission tariffs. Basin Electric Power Cooperative is active in the MAPP formation of an ISO and is committed to work with utilities in the west such as Black Hills Power and Light to form an ISO and area wide transmission tariff.

**20:10:21:12**

## **EFFORTS TO MINIMIZE ADVERSE EFFECTS**

Basin Electric Power Cooperative is concerned with maintaining and improving environmental quality in the broadest sense, which can be summarized as concern for the quality of human life. The first obligation of the Cooperative is to provide an adequate wholesale supply of dependable, low-cost electric power under democratic member control, consistent with the public interest. In conjunction with this, Basin Electric continually endeavors to maximize the socio-economic benefits associated with electrical generation and transmission projects and to minimize negative effects associated with these projects. This is particularly true when it comes to protecting the agricultural lifestyle and productivity of this region. Additionally, the Cooperative is committed to preserving and enhancing the ecological balance of this region for the benefit of future generations. It is the policy of Basin Electric that environmental impacts should be monitored and steps taken to mitigate and alleviate adverse impact. Basin Electric has instituted a wide variety of programs and techniques designed to maximize the most efficient use of energy and to benefit the human, agricultural, and biological environments.

Projects proposed by Basin Electric adhere to the requirements of the Rural Utilities Service Environmental Policies and Procedures which describe the procedures for compliance with the provisions of the National Environmental Policy Act (NEPA). One of the provisions of NEPA requires interagency and public scoping meetings to assist in identifying potential environmental, social and economic impacts of a proposed project. It is through this scoping process that Basin Electric encourages state, federal and public participation so that once potential impact issues are identified, appropriate mitigation measures can be formulated, with the assistance of the participants, to minimize potential impacts. An Environmental Assessment is then written which includes a comprehensive discussion and evaluation of these issues and serves as a baseline document for subsequent environmental regulatory permits and a federal Environmental Impact Statement when required. The eventual goal of this process is to select a facility location that best minimizes environmental, cultural and socio-economic impacts and engineering and construction costs.



As future projects are identified, Basin Electric will also adhere to the appropriate South Dakota statutes regulating industrial development projects such as electrical generating facilities and high voltage transmission lines and substations. In addition, it is Basin Electric's practice to hold meetings with those state and federal agencies when prospective projects are identified to solicit agency input early in the planning process.

In 1979, Basin Electric identified a need to add additional base load generating capacity based upon member system power requirement studies. This load growth data indicated that additional base load capacity would be required in the late 1980s, which was later revised to the early 1990s. In response to this 1979 forecast, Basin Electric conducted an extensive information program to ensure that the appropriate state, federal, and county agencies and the general public of South Dakota were informed of these plans for the potential coal-fired generating facilities.

Today, the need for additional generating capacity has been further extended due to slowing growth rates in member systems' electrical demands. Load forecast information recently provided by member systems indicates that additional base load generating capacity will be required to serve the member system needs on the east side of the national transmission separation beyond the 2010 period of time. If sites are selected in South Dakota for consideration as alternatives for new facilities development, Basin Electric will adhere to the appropriate South Dakota statutes to ensure that federal, state, and local environmental and land use planning agencies are informed and involved in the project planning process.

Basin Electric has developed and maintains a detailed socio-economic impact management program to assist communities in addressing population growth associated with the construction of energy conversion facilities. Basin Electric follows an open-planning process to determine the specific negative and positive impacts that may develop in the area, and works closely with the local citizens and public officials on key issues. Once issues are defined, strategies are recommended to alleviate the adverse conditions. Basin Electric further provides public officials with the technical assistance to secure financing for public services and facilities needed to alleviate negative impacts.

Several methods have been developed by Basin Electric to assist a community in managing growth. One method involves use of a computer model to project household, population and school enrollment increases resulting from an influx of a construction and operations work force. Another method utilized is a comprehensive impact monitoring program which develops a work force profile from data gathered from individual workers. This impact alleviation program continued throughout the construction of Antelope Valley Station (AVS) located near Beulah, ND and Laramie River Station (LRS) near Wheatland, Wyoming. Basin Electric's efforts toward socio-economic planning and mitigation have demonstrated how industry and local communities can effectively work towards mutual goals in a cooperative manner. The

techniques and programs implemented by the AVS and LRS projects have become models for other utilities throughout the United States.

Basin Electric is also making every effort to utilize electrical generation by-product resources such as warm water and fly ash. According to feasibility studies concluded in 1982, warm water from generating stations is well suited for use in greenhouse facilities. Results of the studies indicate that the use of warm water to heat greenhouse operations is both technically and economically feasible. In northern latitudes, such as North Dakota, fuel for heating can account for up to 40 percent of the cost of a year-round greenhouse operation. Although the future of warm water/greenhouse operations hinges on economic considerations and the willingness and ability of growers to relocate, Basin Electric will continue to evaluate alternative uses.

Basin Electric also produces fly ash at its generating stations and has developed innovative and marketable uses of this by-product. During 1999, approximately 52,380 tons of fly ash was marketed for use in oil well cementing, soil stabilization, abandoned mine reclamation, concrete block manufacturing, grouting and redi-mix concrete production in North Dakota, South Dakota, Wyoming, Montana and west coast states. The Cooperative will continue to promote and actively market this fly ash resource.

#### **20:10:21:13**

#### **EFFORTS RELATING TO LOAD MANAGEMENT**

Throughout the Basin Electric service area, local rural electric cooperatives maintain load management plans that vary from voluntary peak alert programs to very sophisticated central control systems.

Basin Electric staff offers some technical assistance and assists in efforts to coordinate energy management and/or load management programs to best benefit the entire Basin Electric service area.

Basin Electric staff emphasizes the wise use and management of available resources to provide the most economical supply of energy to the consumer, rather than only a conservation or peak shaving program.

**20:10:21:14**

**LIST OF REPORTS**

No reports at this time.

**20:10:21:15**

**CHANGES IN STATUS OF FACILITIES**

No change in the status of facilities.

**20:10:21:16**

**PROJECTED ELECTRIC DEMAND**

1. Exhibits 1 and 2 represent Basin Electric's historical and projected sales to its Class A members. These exhibits represent Basin Electric's supplemental power supply responsibility to the Class A members. As a supplemental power supplier, Basin Electric is responsible for providing the members' requirements in excess of the fixed amount of power they receive from the Western Area Power Administration.

An econometric based Power Requirements Study (PRS) was completed in early 1999. The econometric forecasting system in the PRS is a bottom up process that begins by developing econometric equations and forecasts for each distribution cooperative. The total system consists of approximately 200 forecasting equations and over 500 explanatory variables. Annual and monthly forecasts of energy and demand are conducted for a 17 year period. The distribution cooperative forecasts are combined up to obtain the generation and transmission cooperative forecasts (G&T's). The G&T's power requirements are then separated into various power supply responsibilities. The Basin Electric components are combined to obtain the Basin Electric total power supply responsibility.

The modeling and forecasting is performed at Basin Electric. Throughout the modeling and forecasting process there is constant communication and review by member systems and the Rural Utilities Service (RUS) in Washington, D.C. The RUS is responsible to review and approve close to 1,000 distribution

cooperative forecasts as well as large G&T systems forecasts such as Basin Electric. The RUS insures that state of the art methods and technologies are being used to produce short term and long term forecasts. Historical energy data is combined with external data obtained from government and private sector sources as well as membership to form econometric forecasting equations. External projections of explanatory economic and demographic variables used in the forecasting process are obtained from the Food and Agricultural Policy Research Institute at the University of Missouri-Columbia, MO, and Woods & Poole Economics, Inc., and the Department of Energy, Wn D.C.

Exhibits 3 and 4 provide a geographical breakdown by state of the Basin Electric sales indicated in Exhibits 1 and 2.

2. Basin Electric's service area is electrically divided into western and eastern systems. These systems are separated by the east-west ties which are boundaries that separate two major electrical regions of the United States. This boundary essentially runs south from Fort Peck, Montana, approximately along the South Dakota-Wyoming, Nebraska-Wyoming, and Colorado-Kansas borders.

As a result of this, Basin Electric must construct additional generating capacity or purchase capacity and energy on both sides of the ties in order to serve its member load requirements.

The resources available to Basin Electric to serve its members east-side requirements are as follows:

- a) Leland Olds Generating Station: Leland Olds Unit 1 was placed in service on January 9, 1966 and is a base load thermal unit located near Stanton, ND, with a net capacity of 221 MW. Leland Olds Unit 2 was placed in service on December 15, 1975 with a net capacity of 447 MW.
- b) WAPA Peaking Capacity: In 1968, Basin Electric executed a long-term contract with the federal government for USBR (now WAPA) hydro peaking from the dams in the Missouri River Basin. This contract currently provides Basin Electric with 293 MW of winter peaking capacity.
- c) Spirit Mound Station: Basin Electric placed in service on June 30, 1978, two oil-fired combustion turbines. The combined winter rating of the two units is 104 MW (net) and the summer rating is 96 MW (net). The capacity is intended to be used primarily as reserves or replacement during initial outages of base load units or during peak load periods when existing base load units cannot meet the demand. The Spirit Mound Station is located near Vermillion, SD.
- d) Neal IV: Basin Electric and Northwest Iowa Power Cooperative (NIPCO), one of Basin Electric's member cooperatives negotiated a new power

supply contract which provides that NIPCO will sell to Basin Electric NIPCO's 30 MW of uncommitted capacity and associated energy from Unit No. 4 of the George Neal Generating Station (Neal IV). In return NIPCO entered into a wholesale power contract with Basin Electric whereby Basin Electric will sell and deliver to NIPCO all of NIPCO's capacity and energy requirements in excess of the power and energy available to NIPCO from the Western Area Power Administration.

- e) Laramie River Station: Basin Electric, together with five other consumer-owned power supply entities, began construction in July 1976 on the Laramie River Station near Wheatland, in southeast Wyoming. The station's three 550 MW (net) units became fully operational in November 1982. As project manager and operating agent for the Missouri Basin Power Project (MBPP), Basin Electric was assigned overall responsibility for the design, construction and operation of the power plant and related transmission. Units 2 and 3 of the Laramie River Station are electrically connected to the western system; Unit 1 is electrically connected to the eastern system. During 1998 the maximum output rating of each of these units was increased by 15-20 MW. This increased output capability will be used in emergency situations to maintain system reliability. The amount of power that Basin Electric receives from the east side unit is 48 MW (net).
- f) Antelope Valley Station: Basin Electric operates two 450 MW (net) thermal-generating units near Beulah, ND. Approximately 90+ MW of electric power for the Dakota Gasification Company Synfuels Plant facilities are supplied by the Antelope Valley Station. Basin Electric has sold 66 MW of participation power from AVS Unit 2 to Montana-Dakota Utilities Co. The contract terminates on November 1, 2006. Basin Electric has sold 20 MW of participation power from AVS #1 to the Municipal Energy Agency of Nebraska. This sale is for the May through October periods through 2001. Basin Electric has also sold 98 MW of participation power from AVS #1 and #2 to the Montana Power Company. This sale is for the November through April periods through 2010. The remaining AVS power is available for use by Basin Electric to serve its member cooperatives' increasing loads. Unit 1 began commercial operation on July 1, 1984 and Unit 2 began partial commercial operation on June 1, 1986.
- g) Saskatchewan Interchange: Basin Electric and the Saskatchewan Power Corporation (SPC) have agreed to the seasonal exchange of power between the two systems, which began in 1982. The Cooperative will receive 100 MW (net) of peaking capacity and energy during the summer seasons and will return an equal amount of peaking capacity to SPC during the winter season through 2001. Basin Electric is working on extending this arrangement.

- h) Other Short Term Resources: Basin Electric has also entered into a number of short-term purchase agreements to meet contractual power supply obligations. Due to the relatively short-term duration of these arrangements no specifics are provided.
- i) Future Power Supply: None

The resources available to Basin Electric to serve its members west-side requirements are as follows:

- a) Laramie River Station: The Laramie River Station capacity that Basin Electric will receive from the two west-side units is 671 MW (net).
- b) Miles City DC Tie: Basin Electric and WAPA have jointly constructed a 200 MW back-to-back, AC-DC-AC tie at Miles City, MT. This tie enables Basin Electric to serve Central Montana Electric Power Cooperative Inc., a Class A member with electrical loads located primarily west of the east-west ties, using capacity from east-side resources such as Antelope Valley Station.

The projected load values contained in Exhibits 1 through 4 were obtained from the econometric based PRS completed in 1999. These loads have been adjusted to an at-generator system coincident basis by allowing for reserves, on-peak losses, and system diversity as outlined in Exhibits 5 and 6.

**20:10:21:17**

**CHANGES IN ELECTRIC ENERGY DEMAND**

**BASIN ELECTRIC PROJECTED SOUTH DAKOTA WINTER DEMAND INCREASES**

<u>Year</u>	<u>MW</u>	<u>% Increases</u>
1999/2000	-21.2	-7.3
2000/2001	97.3*	35.9*
2001/2002	7.3	1.9
2002/2003	5.7	1.5
2003/2004	6.6	1.7
2004/2005	7.2	1.9
2005/2006	9.9	2.5
2006/2007	8.3	2.1
2007/2008	9.2	2.2
2008/2009	8.9	2.1

\* Growth between 97/98 winter peak and 98/99 winter peak seems unusually high due to mild weather conditions during the 97/98 winter peak which resulted in an unusually low peak usage.

**20:10:21:18**

**MAP OF SERVICE AREA**

Exhibit 7 is a map of Basin Electric's service area.

## **LIST OF EXHIBITS**

1. Summer Loads
2. Winter Loads
3. Summer Loads by States
4. Winter Loads by States
5. Eastern System Summer Season Load-Resources
6. Eastern System Winter Season Load-Resources
7. Basin Electric Service Area Map

NOTE: Resource values used in Exhibits 5 and 6 are based on actual or estimated results of Uniform Rating of Generating Equipment (URGE) tests, whereas the values referred to in the narrative are generally net or estimated net capacities for each plant. All east-side generator capabilities are on a net at-plant basis. The total responsibility includes adjustments for losses, diversity and reserves.



# **BASIN ELECTRIC RESPONSIBILITY TO MEMBER COOPERATIVES**

## Summer Loads (MW)

1990		867
1991		933
1992		749
1993		826
1994		893
1995		1005
1996		985
1997		1078
1998		1138
1999	Historical	1195

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2000	Projected	1185
2001		1227
2002		1252
2003		1269
2004		1290
2005		1306
2006		1328
2007		1347
2008		1359
2009		1377

## BASIN ELECTRIC RESPONSIBILITY TO MEMBER COOPERATIVES

### Winter Loads (MW)

1990/91		996
1991/92		865
1992/93		1002
1993/94		1060
1994/95		923
1995/96		1107
1996/97		1140
1997/98		1063
1998/99		1133
1999/00	Historical	1084

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2000/01	Projected	1308
2001/02		1337
2002/03		1358
2003/04		1380
2004/05		1398
2005/06		1423
2006/07		1444
2007/08		1460
2008/09		1480
2009/10		1498

## BASIN ELECTRIC MEMBER LOADS BY STATE

### Summer Peak Demand (MW)

#### Historical

<u>Year</u>	<u>ND</u>	<u>%</u>	<u>SD</u>	<u>%</u>	<u>MN</u>	<u>%</u>	<u>IA</u>	<u>%</u>	<u>NE</u>	<u>%</u>	<u>MT</u>	<u>%</u>	<u>CO/WY</u>	<u>%</u>	<u>Total</u>
1990	179.7	20.7	202.8	23.4	31.9	3.7	41.6	4.8	186.0	21.5	27.4	3.2	197.3	22.7	866.7
1991	195.6	20.9	243.0	26.0	40.3	4.3	41.3	4.4	184.9	19.8	22.1	2.4	206.7	22.2	933.9
1992	184.2	24.6	159.8	21.3	25.8	3.4	40.0	5.3	111.6	14.9	18.1	2.4	210.0	28.1	749.4
1993	179.3	21.7	194.0	23.5	32.0	3.9	54.1	6.6	131.6	15.9	16.9	2.0	217.7	26.4	825.6
1994	170.1	19.1	187.0	21.0	36.7	4.1	72.7	8.1	189.0	21.2	16.3	1.8	220.7	24.7	892.6
1995	224.2	22.3	235.7	23.5	39.0	3.9	71.6	7.1	186.2	18.5	20.9	2.1	226.8	22.6	1004.5
1996	222.3	22.6	220.8	22.4	37.7	3.8	67.2	6.8	170.2	17.3	27.6	2.8	238.9	24.3	984.7
1997	243.8	22.6	239.7	22.2	40.4	3.7	77.7	7.2	195.5	18.1	27.1	2.5	253.9	23.6	1078.1
1998	249.0	21.9	274.0	24.1	46.1	4.0	83.2	7.3	211.3	18.6	27.7	2.4	247.1	21.7	1138.4
1999	268.2	22.4	290.2	24.3	51.0	4.3	101.9	8.5	197.4	16.5	28.4	2.4	257.7	21.6	1194.9

#### Projected

<u>Year</u>	<u>ND</u>	<u>%</u>	<u>SD</u>	<u>%</u>	<u>MN</u>	<u>%</u>	<u>IA</u>	<u>%</u>	<u>NE</u>	<u>%</u>	<u>MT</u>	<u>%</u>	<u>CO/WY</u>	<u>%</u>	<u>Total</u>
2000	270.7	22.8	281.5	23.8	48.2	4.1	90.2	7.6	195.4	16.5	31.0	2.6	268.2	22.6	1185.2
2001	276.9	22.6	296.4	24.2	50.1	4.1	94.2	7.7	197.7	16.1	34.1	2.8	277.4	22.6	1226.8
2002	279.8	22.4	302.4	24.2	50.9	4.1	96.8	7.7	199.5	15.9	34.7	2.8	287.7	23.0	1251.
2003	281.7	22.0	307.0	24.2	51.7	4.1	99.4	7.8	200.8	15.8	34.5	2.7	294.3	23.2	1269.4
2004	284.2	22.0	312.5	24.2	52.7	4.1	101.1	7.8	202.7	15.7	34.7	2.7	301.5	23.4	1289.5
2005	287.0	22.0	318.4	24.4	53.7	4.1	102.8	7.9	204.3	15.6	35.2	2.7	304.3	23.3	1305.7
2006	291.0	21.9	326.6	24.6	55.0	4.1	104.8	7.9	206.5	15.6	36.4	2.7	307.4	23.2	1327.7
2007	294.1	21.8	333.4	24.8	56.1	4.2	107.0	7.9	208.1	15.5	37.2	2.8	310.8	23.1	1346.6
2008	297.8	21.9	341.1	25.1	57.3	4.2	100.3	7.4	209.1	15.4	38.0	2.8	315.4	23.2	1359.0
2009	301.1	21.9	348.4	25.3	58.6	4.3	102.1	7.4	210.7	15.3	38.8	2.8	316.9	23.0	1376.5

## BASIN ELECTRIC MEMBER LOADS BY STATE

### Winter Peak Demand (MW)

#### Historical

<u>Year</u>	<u>ND</u>	<u>%</u>	<u>SD</u>	<u>%</u>	<u>MN</u>	<u>%</u>	<u>IA</u>	<u>%</u>	<u>NE</u>	<u>%</u>	<u>MT</u>	<u>%</u>	<u>CO/WY</u>	<u>%</u>	<u>Total</u>
1990/91	289.2	29.0	276.2	27.7	41.6	4.2	71.4	7.2	28.7	2.9	39.9	4.0	248.7	25.0	995.7
1991/92	248.0	28.7	211.3	24.4	34.7	4.0	69.7	8.1	23.9	2.8	26.9	3.1	250.5	28.9	865.0
1992/93	287.9	28.7	272.9	27.2	40.8	4.1	71.6	7.1	33.5	3.3	33.4	3.3	261.8	26.3	1001.9
1993/94	292.2	27.6	301.7	28.5	47.2	4.4	93.1	8.8	34.0	3.2	29.0	2.7	262.8	24.8	1060.0
1994/95	264.8	28.7	236.5	25.6	38.0	4.1	74.6	8.1	28.8	3.1	25.1	2.7	254.6	27.6	922.5
1995/96	326.3	29.5	310.1	28.0	49.7	4.5	89.2	8.1	33.2	3.0	31.1	2.8	267.3	24.1	1107.0
1996/97	334.1	29.3	303.6	26.6	46.8	4.1	98.7	8.7	35.7	3.1	30.6	2.7	290.5	25.5	1140.1
1997/98	324.7	30.5	264.5	24.9	40.9	3.8	77.6	7.3	35.8	3.4	28.6	2.7	291.4	27.4	1063.4
1998/99	331.8	29.3	292.8	25.8	46.7	4.1	109.2	9.6	37.0	3.3	30.0	2.6	285.5	25.2	1133.1
1990/00	312.7	28.9	270.9	25.0	46.5	4.3	102.2	9.4	31.0	2.9	27.7	2.6	292.9	27.0	1083.8

#### Projected

<u>Year</u>	<u>ND</u>	<u>%</u>	<u>SD</u>	<u>%</u>	<u>MN</u>	<u>%</u>	<u>IA</u>	<u>%</u>	<u>NE</u>	<u>%</u>	<u>MT</u>	<u>%</u>	<u>CO/WY</u>	<u>%</u>	<u>Total</u>
2000/01	363.9	27.8	368.2	28.1	58.6	4.5	120.0	9.2	38.1	2.9	39.7	3.0	319.7	24.4	1308.4
2001/02	367.6	27.5	375.5	28.1	59.6	4.5	123.6	9.2	38.6	2.9	40.4	3.0	332.2	24.8	1337.3
2002/03	369.8	27.2	381.2	28.1	60.5	4.5	127.0	9.4	38.9	2.9	39.9	2.9	340.2	25.1	1357.6
2003/04	372.8	27.0	387.8	28.1	61.7	4.5	129.2	9.4	39.4	2.9	40.0	2.9	348.7	25.3	1379.6
2004/05	376.3	26.9	395.0	28.3	62.9	4.5	131.5	9.4	39.8	2.8	40.5	2.9	352.0	25.2	1398.1
2005/06	381.3	26.8	404.9	28.5	64.4	4.5	133.9	9.4	40.3	2.8	42.0	3.0	355.8	25.0	1422.6
2006/07	385.2	26.7	413.2	28.6	35.7	4.5	136.5	9.5	40.9	2.8	42.9	3.0	359.9	24.9	1444.3
2007/08	389.9	26.7	422.4	28.9	67.1	4.6	130.3	8.9	41.2	2.8	43.9	3.0	365.6	25.0	1460.4
2008/09	393.9	26.6	431.3	29.1	68.6	4.6	132.4	8.9	41.6	2.8	44.8	3.0	367.3	24.8	1479.8
2009/10	398.2	26.6	439.9	29.4	69.9	4.7	135.1	9.0	42.0	2.8	45.7	3.1	367.2	24.5	1497.9

## BASIN ELECTRIC EASTERN SYSTEM LOAD-RESOURCES

### Summer Season

	<u>Members' Load Projections</u>	<u>Contracted Sales to Others</u>	<u>Losses, Diversity, and Reserves</u>	<u>Total Responsibility</u>
2001	1032	423	224	1679
2002	1046	277	219	1542
2003	1057	280	215	1552
2004	1070	252	217	1539
2005	1084	252	220	1556
2006	1103	252	223	1578
2007	1118	252	225	1595
2008	1120	252	225	1597
2009	1136	252	228	1616
2010	1152	252	231	1635

### Resources

	<u>Leland Olds</u>	<u>Laramie River</u>	<u>Spirit Mound</u>	<u>Antelope Valley</u>	<u>Neal IV</u>	<u>Sask Peaking</u>	<u>Total Resources</u>
2001	668	46	96	900	30	99	1839
2002	668	46	96	900	30	0	1740
2003	668	46	96	900	30	0	1740
2004	668	46	96	900	30	0	1740
2005	668	46	96	900	30	0	1740
2006	668	46	96	900	30	0	1740
2007	668	46	96	900	30	0	1740
2008	668	46	96	900	30	0	1740
2009	668	46	96	900	30	0	1740
2010	668	46	96	900	30	0	1740

## BASIN ELECTRIC EASTERN SYSTEM LOAD-RESOURCES

### Winter Season

	<u>Members' Load Projections</u>	<u>Contracted Sales to Others</u>	<u>Losses, Diversity, and Reserves</u>	<u>Total Responsibility</u>
2000/01	981	678	242	1901
2001/02	998	481	215	1694
2002/03	1010	349	204	1563
2003/04	1023	349	206	1578
2004/05	1038	349	208	1595
2005/06	1058	349	211	1618
2006/07	1076	282	214	1572
2007/08	1080	283	216	1579
2008/09	1097	283	218	1598
2009/10	1115	283	221	1619

### Resources

	<u>Leland Olds</u>	<u>Laramie River</u>	<u>Spirit Mound</u>	<u>Antelope Valley</u>	<u>Neal IV</u>	<u>WAPA Peaking</u>	<u>Total Resources</u>
2000/01	668	46	104	900	33	281	2044
2001/02	668	46	104	900	33	281	2044
2002/03	668	46	104	900	33	281	2044
2003/04	668	46	104	900	33	281	2044
2004/05	668	46	104	900	33	281	2044
2005/06	668	46	104	900	33	281	2044
2006/07	668	46	104	900	33	281	2044
2007/08	668	46	104	900	33	281	2044
2008/09	668	46	104	900	33	281	2044
2009/10	668	46	104	900	33	281	2044

