



Before the Public Service Commission of
The State of North Dakota

In the Matter of the Application of
BASIN ELECTRIC POWER COOPERATIVE
For a Certificate of Site Compatibility for the
Pioneer Generation Station Phase III Project

Case No. PU-12-509

Pre-filed Testimony
of
Becky Kern

1 Q. **Ms. Kern, would you please state your name, business address and your**
2 **occupation?**

3
4 A. My name is Becky Kern. My business address is 1717 East Interstate Avenue,
5 Bismarck, North Dakota. I am the Director of Utility Planning for Basin Electric Power
6 Cooperative. I oversee the development of the long term load forecasting for Basin
7 Electric and its members and the long term power supply planning activities which
8 includes the development of Basin Electric's Integrated Resource Plan.

9
10 Q. **Would you please state your educational background?**

11
12 A. I received a Bachelor of Science degree in Electrical Engineering from the North
13 Dakota State University in 2002. I have worked for Basin Electric for twelve years.

14
15 Q. **What have been your responsibilities in connection with the Pioneer**
16 **Generation Station Phase III Project?**

17
18 A. I was responsible for identifying the need for additional generation. Through our load
19 forecasting process and subsequent evaluation of our ability to meet our member
20 load obligation through the development of an Integrated Resource Plan, we were
21 able to identify that Basin Electric needed additional natural gas generation to help
22 meet the growing load obligations of our membership.

23
24 Q. **How do you conduct the Basin Electric load forecasts?**

25
26 A. The load forecasts are performed either every other year or every three years with
27 annual updates and are prepared in accordance to the Rural Utilities Services
28 general criteria. The Load Forecast represents a joint effort by the distribution
29 cooperatives, the G&T cooperatives, and Basin Electric. In order to assure all
30 segments of the cooperative's structure are involved, a Load Forecast Technical
31 Committee was established. This committee consists of representatives from the
32 distribution cooperatives, the G&T cooperatives and Basin Electric. The Load
33 Forecast, is prepared on a distribution cooperative basis. The criteria defines a Load
34 Forecast as a thorough study of a cooperative's electric loads and the factors that

1 affect those loads in order to determine as accurately and as practical the
2 cooperative's future requirements for energy and capacity. The basis for econometric
3 modeling is to identify factors in the economy that have historically affected electrical
4 consumption. This is accomplished by using regression analysis software that
5 establishes a mathematical relationship between the economic factors and power
6 usage. The mathematical relationship, which is in the form of algebraic equations,
7 represents the econometric model. Different models are developed for each member,
8 depending on the type of load they serve. Examples of these models include
9 residential, oil related, coal related, ethanol and biodiesel related forecasts. There are
10 certain instances that a mathematical equation cannot be developed to predict the
11 future and in these cases judgmental forecasts are created with the help of the
12 distribution cooperatives serving the loads because of their local knowledge and
13 expertise. These results of the Load Forecasts are then translated into a model that
14 represents the Basin Electric system on a delivery point basis. This allows the
15 planning of infrastructure improvements to be made where needed. The Load
16 Forecast is then monitored on a monthly basis to ensure that the forecast is
17 performing as expected. Also, due to the detailed information available from the large
18 commercial sector, individual projects can be monitored to ensure that they are
19 proceeding as planned. If the load deviates significantly from the forecast,
20 modifications can be made for future load forecasts.

21
22 **Q. Earlier you mentioned one of your duties is to prepare Basin Electric's**
23 **Integrated Resource Plan. Could you please describe that document.**

24
25 **A.** The Integrated Resource Plan is a review of Basin Electric's forecasted member load
26 obligations, current operating system and provides for the framework for future
27 expansion, including both supply-side and demand-side resource expansion. Basin
28 Electric reviews resources that are available in meeting the forecasted obligations
29 and utilizes both a capacity expansion model and a production cost model to
30 determine what mix of resources can most effectively meet our member obligations.
31 These resources as I have stated can be both supply-side and demand-side, the
32 supply-side resources are not limited to Basin Electric's self-build options. We issued
33 a Power Supply Request for Proposal in the summer of 2013 and sought power
34 supply alternatives that could be evaluated within our Integrated Resource Plan. This

1 plan will typically identify a five year action plan to meet the forecasted load growth of
2 our member systems, with a general sense of what additional power supply may be
3 needed beyond five years.

4
5 **Q. Can you describe the results of the 2014 load forecast?**

6
7 A. The 2014 Load Forecast was approved by the members' Board of Directors as well
8 as Basin Electric's Board of Directors in the spring of 2014. This forecast showed that
9 Basin Electric's entire membership was anticipated to grow almost 1,900 MW from
10 2014 through 2035.

11
12 **Q. Why and when was Phase III of the Pioneer Generation Station chosen?**

13
14 A. Basin Electric is forecasted to be short of generation capacity within our eastern
15 system starting in 2016. In July 2014, the Basin Electric Board of Directors made the
16 decision that the need would be best supplied by developing additional peaking
17 generation at the Pioneer Generation Station and the Lonesome Creek Station. In
18 doing so, Basin Electric will receive the generation capacity it requires to reliably
19 serve its member load obligations.

20
21 **Q. As part of your duties as Director of Utility Planning, are you familiar with the
22 dispatching of generation?**

23
24 A. In general yes; however, I am responsible for long term power supply planning, which
25 is beyond the next 12 -18 months. Short term power supply planning activities, for the
26 next 12 months, are performed by Basin Electric's Marketing & Asset Management
27 Department.

28
29 **Q. What will the process be for dispatching of this unit and the timeframe on that
30 dispatch?**

31
32 A. These units will be dispatched based on market conditions and local area reliability
33 needs to support the Bakken area. The plant will be notified that the units are needed
34 to operate and provided a time for when they need to be at a specified generation

1 level. These units are capable of being online and generating electricity within about
2 10 -15 minutes.

3
4 Q. **Ms. Kern, how does this Project affect the reliability of the electrical system in**
5 **this area of northwestern North Dakota and Eastern Montana?**

6
7 A. This Project, as well as the Culbertson Generation Station and Lonesome Creek
8 Station, will provide local generation in the event of transmission line outages or for
9 local area support if needed.

10
11 Q. **Besides the Project, what else is Basin Electric doing to meet electrical demand**
12 **throughout Basin Electric's footprint?**

13
14 A. Basin Electric is also developing Phase 3 of the Lonesome Creek Station to be in-
15 service in 2016. We have also entered into several power purchase agreements for
16 additional wind generation to be online in 2015 and 2016. These additional wind
17 power purchase agreements will bring Basin Electric's wind generation portfolio to
18 almost 1,400 MW when all completed. We have also entered into a number of power
19 purchase agreements to provide additional capacity and energy to meet our growing
20 obligations as we continue to monitor the load growth on our system as well as
21 evaluate the need for additional generation within our service territory in the next 3-7
22 years.

23
24 Q. **Does the proposed Project ensure that the energy needs of the area will be**
25 **fulfilled in an orderly and timely fashion?**

26
27 A. Yes

28
29 Q. **Will the Project benefit the area through which Basin Electric is proposing to**
30 **construct?**

31
32 A. Yes. The Project will provide a direct benefit for service into the area allowing reliable
33 service to area consumers as well as provide the needed capacity to meet Basin
34 Electric's entire membership obligations.

1

2 Q. **Are there any plans for expansion of this Project?**

3

4 A. There are no plans for expansion of this particular Project.

5

6 Q. **Does this conclude your direct testimony?**

7

8 A. Yes.