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
Lonesome Creek Generation Station Phase III Project

Case No. PU-14-852

Pre-filed Testimony

of

Becky Kern

Q. **What is your name, business address and your occupation?**

A. My name is Becky Kern. My business address is 1717 East Interstate Avenue, Bismarck, North Dakota. I am the Director of Utility Planning for Basin Electric Power Cooperative. I have worked for Basin Electric for twelve years.

I oversee the development of the long term load forecasting for Basin Electric and its members and the long term power supply planning activities which includes the development of Basin Electric's Integrated Resource Plan.

Q. **Please describe your educational background.**

A. I received a Bachelor of Science degree in Electrical Engineering from the North Dakota State University in 2002.

Q. **Please describe your responsibilities in connection with the proposed Lonesome Creek Station Phase III Project?**

A. Basin Electric identified the need for additional natural gas generation to meet the growing load obligations of our membership through the load forecasting process and subsequent evaluation of Basin Electric's ability to meet that load obligation through the development of an Integrated Resource Plan.

Q. **How are load forecasts conducted?**

A. The load forecasts are performed either every other year or every three years with annual updates and are prepared in accordance with the Rural Utilities Services criteria. The Load Forecast represents a joint effort by the distribution cooperatives, the G&T cooperatives, and Basin Electric. In order to ensure all segments of the cooperative's structure are involved, a Load Forecast Technical Committee was established. This committee consists of representatives from the distribution cooperatives, the G&T cooperatives and Basin Electric. The Load Forecast is prepared on a distribution cooperative basis.

The RUS criteria define a Load Forecast as a thorough study of a cooperative's electric loads and the factors that affect those loads in order to determine as accurately and as practical the cooperative's future requirements for energy and capacity. The basis for econometric modeling is to identify factors in the economy that have historically affected electrical consumption. This is accomplished by using regression analysis software that establishes a mathematical relationship between the economic factors and power usage. The mathematical relationship, which is in the form of algebraic equations, represents the econometric model. Different models are developed for each member, depending on the type of load they serve. Examples of these models include residential, oil related, coal related, ethanol and biodiesel related forecasts.

There are certain instances where a mathematical equation cannot be developed to predict the future. In these cases judgmental forecasts are created with the help of the distribution cooperatives serving the loads because of their local knowledge and expertise. These results of the Load Forecasts are then translated into a model that represents the Basin Electric system on a delivery point basis. This allows the planning of infrastructure improvements to be made where needed. The Load Forecast is then monitored on a monthly basis to ensure that the forecast is performing as expected. Due to the detailed information available from the large commercial sector, individual projects can be monitored to ensure that they are proceeding as planned. If the load deviates significantly from the forecast, modifications can be made for future load forecasts.

Q. **Please describe Basin Electric's Integrated Resource Plan.**

A. The Integrated Resource Plan is a review of Basin Electric's forecasted member load obligations, current operating system and provides for the framework for future expansion, including both supply-side and demand-side resource expansion. Basin Electric reviews resources that are available in meeting the forecasted obligations and utilizes both a capacity expansion model and a production cost model to determine what mix of resources can most effectively meet our member obligations. As previously stated, these resources can be both supply-side and demand-side, and the supply-side resources are not limited to Basin Electric's self-build options. Basin

Electric issued a Power Supply Request for Proposal in the summer of 2013 and sought power supply alternatives that could be evaluated within our Integrated Resource Plan. This plan will typically identify a five year action plan to meet the forecasted load growth of our member systems, with a general sense of what additional power supply may be needed beyond five years.

Q. **Would you please describe the results of the 2014 load forecast?**

A. The 2014 Load Forecast was approved by the members' Board of Directors as well as Basin Electric's Board of Directors in the Spring of 2014. This forecast showed that Basin Electric's entire membership was anticipated to grow almost 1,900 MW from 2014 through 2035. The load forecast process and results are discussed in greater detail in section 1.3 of the application.

Q. **Why and when did Basin Electric elect to construct Phase III of the Lonesome Creek Station?**

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

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

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

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

A. These units will be dispatched based on market conditions and local area reliability needs to support the Bakken area. The plant will be notified that the units are needed to operate and provided a time for when they need to be at a specified generation level. These units are capable of being online and generating electricity within about 10 - 15 minutes.

Q. **How does the proposed Project affect the reliability of the electrical system in northwestern North Dakota and Eastern Montana?**

A. This Project, as well as the Culbertson Generation Station and Pioneer Generation Station, will provide local generation in the event of transmission line outages or for local area support as necessary.

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

A. Basin Electric is also developing phase 3 of the Pioneer Generation Station to be in-service in 2016. Basin Electric has also entered into several power purchase agreements for additional wind generation to be online in 2015 and 2016. These additional wind power purchase agreements will bring Basin Electric's wind generation portfolio to almost 1,400 MW when all completed. Basin Electric has also entered into a number of power purchase agreements to provide additional capacity and energy to meet our growing obligations as we continue to monitor the load growth on our system, as well as evaluate the need for additional generation within our service territory in the next three to seven years.

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

A. Yes

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

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

Q. **Are there any plans for expansion of the proposed Project?**

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

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

A. Yes.