

Direct Testimony
Daniel P. Kline
Exhibit A

Before the South Dakota Public Utilities Commission
of the State of South Dakota

In the Matter of Black Hills Power, Inc. d/b/a Black Hills Energy
for a Facility Permit to Construct a 230/69 kV Transmission Line and
Associated Substation

Docket No. EL 19- _____

January 23, 2019

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I. INTRODUCTION AND QUALIFICATIONS

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Daniel Kline. My business address is 7001 Mount Rushmore Road, Rapid City, South Dakota, 57702.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am employed by Black Hills Service Company, LLC as Director, Transmission and Engineering Services.

Q. FOR WHOM ARE YOU TESTIFYING ON BEHALF OF TODAY?

A. I am testifying on behalf of Black Hills Power, Inc. d/b/a Black Hills Energy (“Black Hills” or the “Company”).

Q. PLEASE DESCRIBE YOUR EDUCATION AND BUSINESS BACKGROUND.

A. I graduated from Iowa State University with a Bachelor’s degree in Electrical Engineering. I began my career with Pacific Gas and Electric Company as a Transmission Planning Engineer. Additionally, I have held positions with Open Systems International as a Power System Engineer responsible for design, installation, and testing of energy management systems for utilities. I also earned a Master’s of Engineering in Engineering Management from the University of Idaho.

In 2006, I joined Xcel Energy as a Transmission Planning Engineer for their utility subsidiary, Northern States Power Company, a Minnesota corporation. Subsequently, I held a number of positions of increasing responsibility, culminating in a position as Director of Strategic Transmission Initiatives, where I was responsible for execution of large capital transmission projects throughout Xcel Energy’s service territory, including with Public Service Company of Colorado.

I began my employment with Black Hills Corporation (“BHC”) in July 2015 as Director-Electric Transmission Services for all the Company’s utility properties in South Dakota, Montana, Wyoming and Colorado.

My current duties include leadership and oversight of transmission planning and policy, compliance with Federal Energy Regulatory Commission (“FERC”) regulations and tariff administration, substation and protection engineering, transmission and distribution line engineering, and capital project execution. I lead a team of roughly forty engineering, operational and administrative professionals in this area.

Q. PLEASE DESCRIBE YOUR PRIMARY RESPONSIBILITIES.

A. I am responsible for overall leadership and direction for the Transmission & Engineering Services team. In this capacity, I oversee the following functional areas and programs, providing services to all of the BHC electric operating companies, including Black Hills.

Transmission & Distribution Planning: I am responsible for analysis of the transmission and distribution systems, identification of system deficiencies in need of resolution, and initial planning of projects necessary to address deficiencies.

Tariff Administration and Policy: I am responsible for administration of the Company’s FERC Open Access Transmission Tariff, which provides non-discriminatory access to the Company’s transmission facilities. Working with Transmission Planning and other departments, the Tariff Administration department also leads the Company’s interconnection process and coordinates these processes with interconnection customers as well as other utilities. Additionally, this department is responsible for participation in regional

transmission forums exploring the formation of joint tariffs and other market initiatives.

Transmission and Distribution Engineering: I am responsible for the engineering and design of transmission lines, as well as large distribution lines.

Transmission and Distribution Standards: I am responsible for the Standards Program, as it reports through the Transmission and Distribution Engineering department. The Standards Program is responsible for aligning the design and construction practices of the electric operating companies, driving cost savings through economies of scale, and identification of new or better ways of executing the transmission and distribution work for Black Hills Corporation's electric operating companies, including Black Hills.

Substation & Protection Engineering: I am responsible for the engineering and design of the Company's transmission and distribution substations, as well as the protective systems that isolate elements of the system when faults occur.

Project Delivery: I am responsible for project management and execution of projects on the Company's transmission and distribution systems. This is a relatively new department, created in early 2017 to develop and implement additional project management capabilities and oversight into the Company's capital project execution processes.

II. PURPOSE OF TESTIMONY

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my direct testimony is to provide an overview of the proposed 230/69 kV substation and 230 kV transmission line.

III. THE PROPOSED PROJECT

Q. PLEASE PROVIDE AN OVERVIEW OF THE PROPOSED PROJECT

A. Black Hills is seeking authority from the South Dakota Public Utilities Commission (the “Commission”) to construct, own and operate a new 230/69 kV substation at the location of the former Ben French Power Plant and to construct, own and operate a new 230 kV transmission line connecting to the proposed substation. The proposed project is needed to accommodate Rapid City, SD load growth without manual system demand reduction or load shedding under a critical outage situation. The former Ben French Power Plant property is currently vacant land owned and maintained by Black Hills and located within the city limits on the northwest side of Rapid City, SD. Black Hills proposes to construct, own and operate approximately 0.7 miles of new 230 kV transmission line connecting to the new 230/69 kV substation. The new 230 kV transmission line will be constructed from the substation extending to the southeast for approximately 0.2 miles and then to the east for approximately 0.5 miles. The new 230 kV transmission line will be completely constructed with an existing Black Hills easement; therefore, eliminating the need to obtain any new easements.

Q: PLEASE PROVIDE MORE DETAILS ON THE PROPOSED TRANSMISSION LINE.

A: The new 230 kV transmission line the company is proposing is a double-circuit 230 kV line that is approximately 0.7 mile in length. Upon completion, the proposed line will loop into and out of the new 230/69 kV substation from the existing Lange to South Rapid City 230 kV transmission line.

Q: WHAT ARE THE DRIVERS OF THE PROPOSED PROJECT?

A: The proposed project is being driven by the assumed load growth within the Rapid City area and the need to harden the Rapid City area sub-transmission network under normal operating conditions. With a historical peak Rapid City area demand of 212 MW and only 130 MW of nameplate generation installed on the Rapid City 69 kV transmission network, the ability to import energy into the Rapid City-area sub-transmission system is needed; therefore, driving the proposed project. The Rapid City area is currently served by two (2) 150 MVA transformers and one (1) 100 MVA transformer. In the event that the two (2) 150 MVA transformers were lost, overloads on the remaining 100 MVA transformer will be encountered. The loss of two transformers is an outage commonly studied in the industry in order to ensure adequate load-serving capability in an import-constrained area.

Q: DESCRIBE THE IMPACTS OF A TRANSFORMER OVERLOAD.

A: Transformer overloads can lead to equipment damage, reduced transformer lifecycle, and potential catastrophic failure; in addition, replacing failed transformers can take up to a year due to the long lead-time associated with large power transformers such as these.

Q: DOES THE PROJECT APPLICATION MEET THE CRITERIA SET FORTH IN SOUTH DAKOTA CODIFIED LAW AND THE ADMINISTRATIVE RULES OF SOUTH DAKOTA?

A: Yes. Pursuant to SDCL 49-41B-22, the Application establishes that the project complies with applicable law and rules; the proposed project will not pose a threat of serious injury to the environment or the social and economic conditions of inhabitants or expected inhabitants in the siting area, the proposed project will not substantially impair the health, safety, or welfare of the inhabitants, and the proposed project will not unduly interfere

with the orderly development of the region with due consideration having been given the views of governing bodies of affected local units of government.

Q: PLEASE PROVIDE A SUMMARY OF THE ESTIMATED COST OF THE PROPOSED PROJECT.

A. Black Hills estimates construction costs of the proposed project to be \$9.7 million. The estimated cost for the new 230/69 kV substation is \$8.1 million and the estimated cost for the new 230 kV transmission line is \$1.6 million.

Q. DESCRIBE THE NECESSARY PERMITS AND/OR EASEMENTS FOR THE PROPOSED PROJECT.

A: The proposed site, the former Ben French Power Plant land, for the new 230/69 kV substation is company owned and maintained land located within the city limits on the northwest side of Rapid City, SD. The only required permits for the construction of the new 230/69 kV substation are: 1) a storm water discharge permit from the State of South Dakota, and 2) a grading permit from the City of Rapid City, which will be obtained prior to construction.

The proposed new 230 kV transmission will run generally due west from the existing Lange to South Rapid City 230 kV line. It will cross Deadwood Avenue and parallel West Chicago Street before traveling northwest further into the new substation.

The new 230 kV transmission line will be constructed within an existing easement secured for the existing 69 kV line traveling the same route.

Q. WERE ALTERNATIVE SITES CONSIDERED FOR NEW 230/69 kV SUBSTATION?

A: Yes. Black Hills studied three locations, the existing Lange substation, the existing South Rapid City substation and the site of the former Ben French Power Plant, for the proposed substation. The existing Lange substation was not a viable option due to lack of substation expansion capability and transmission availability on the 69 kV or the 230 kV transmission system. The existing South Rapid City substation provided opportunity for expansion and provided the transmission availability, but the existing 230 kV capacitor located on-site would have to be relocated to another site. After further analysis of alternative locations for the 230 kV capacitor, the South Rapid City substation became a non-viable option.

Q: WERE ALTERNATIVE ROUTES CONSIDERED FOR THE NEW 230kV TRANSMISSION LINE?

A: Yes. Black Hills looked at routes north of the proposed route, which all proved to cause the greatest impact to private land and encroached into more developed areas. Black Hills bases its route selection on the following criteria: 1) least amount of impact to private property, least amount of encroachment into already developed areas, shortest route length, and utilization of existing easements and property owned by Black Hills.

Q. WHEN DOES BLACK HILLS PLAN TO BEGIN CONSTRUCTION OF PROPOSED PROJECT?

A. Provided the Commission approves the Application, Black Hills Power plans to begin construction of the Project as soon as Commission approval is obtained.

Q. WHEN DOES BLACK HILLS EXPECT CONSTRUCTION TO BE COMPLETE?

A. Black Hills expects nine (9) month construction timeframe.

IV. CONCLUSION

Q. WHAT RISKS EXIST IF THE APPLICATION IS DELAYED OR DENIED?

A. As explained in more detail in the application, should the application be delayed or denied, the Company will continue to be at risk of incurring must-run generation costs as Rapid City load grows in the winter and summer.

Q. DOES THIS CONCLUDE YOUR WRITTEN PRE-FILED DIRECT TESTIMONY?

A. Yes, it does.

