EXHIBIT A17

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF SOUTH DAKOTA

IN THE MATTER OF THE APPLICATION BY PREVAILING WIND PARK, LLC FOR A PERMIT FOR A WIND ENERGY FACILITY IN BON HOMME, CHARLES MIX, AND HUTCHINSON COUNTIES, SOUTH DAKOTA, FOR PREVAILING WIND PARK ENERGY FACILITY

SD PUC DOCKET EL-18-026

PREFILED REBUTTAL TESTIMONY OF SCOTT CREECH
ON BEHALF OF PREVAILING WIND PARK, LLC

September 26, 2018

I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Scott Creech. My business address is 2180 South 1300 East, Suite 600, Salt Lake City, Utah 84106.

Q. Did you provide Direct Testimony in this Docket?

A. No.

Q. Please describe your background and duties.

A. I have been working in renewable energy for more than a decade, and my experience has primarily been related to the construction, operation, and repowering of wind projects. I have a B.S. in Industrial Engineering from Texas A&M University. My resume is attached as **Exhibit 1**.

Q. What is your role with the Prevailing Wind Park Project ("Project")?

A. My current position is construction manager. I am tasked with development support until the start of construction. Pulling from past experience in the wind industry, I assist with the development of our Engineering, Procurement and Construction ("EPC") Scope of Work and contract, the turbine purchasing agreement and developing the relationships that will be critical in the smooth flow of the Project. Once construction starts, I will be on site full time acting as Prevailing Wind Park, LLC's representative for all things Project-related, throughout the entirety of construction and into the beginning of the operations of the Project. My primary focus will be scheduling and coordinating with our landowners, government entities including county and state highway departments, and the local communities. I will also be responsible for helping ensure EPC adherence to their safety program and schedule.

Q. What is the purpose of your Rebuttal Testimony?

A. The purpose of my Rebuttal Testimony is to provide additional information regarding Project operations in response to the testimony of Darren Kearney submitted on behalf of South Dakota Public Utilities Commission ("Commission") Staff.

Q. Are there any exhibits attached to your Rebuttal Testimony?

A. My resume is attached as **Exhibit 1** to this rebuttal testimony.

II. PROJECT OPERATIONS

Q. Are you familiar with the issue of icing on wind turbine blades?

A. Yes, I am aware that icing on wind turbine blades is sometimes raised as an issue with respect to wind projects. Specifically, concerns are raised regarding ice shedding, which is when ice that has built up on blades falls from the blades.

Q. Is icing a common occurrence on wind turbines?

A. Icing can occur on blades, but it is not common and is generally controlled by ice detection systems on the turbines.

Q. What causes icing on wind turbine blades?

A. Turbines experience icing during conditions of freezing rain – this occurs as temperatures are dropping down to and below freezing and moisture is falling.

Q. How will icing on the wind turbine blades be detected for the Prevailing Wind Park Project?

A. The Prevailing Wind Park turbines will include the standard turbine control system on each turbine and an additional purchased accessory software package, including Turbine Computer Monitoring ("TCM"). The turbine controller senses when the rotor revolutions per minute are not consistent with the measured wind speed. This is a naturally occurring phenomenon as the buildup of ice breaks the perfected aerodynamic shape of the blade. The turbine controller then evaluates the

temperature and recognizes that icing conditions may exist. The TCM system measures vibration on many components of the turbine and, when it senses vibration above pre-set levels, the turbine automatically shuts down.

Q. What happens when the turbine detects icing?

A. The system safety shuts the turbine down when the rotor speed diminishes and also when vibrations exceed predetermined levels. The turbine knows that the conditions are present and will not attempt to restart until conditions (temperature) become favorable or human intervention occurs.

Q. Can ice throw be thrown from a turbine that has an ice detection system?

A. Yes, but it is very rare, and there are methods to minimize and prevent ice throw. Typically, ice is shed from (i.e., falls in close proximity to) a turbine. The farthest distance I am aware of ice being thrown from a turbine is approximately 250 feet. My experience is consistent with the Commission's finding with respect to the Dakota Range project, where the Commission found:

> Applicant provided evidence that the potential for ice to be thrown from turbines is not a common occurrence. The Project meets both the state and county non-participating property line setback requirements. The concern for ice shedding is typically within 300 feet of the turbine. While there is the potential for ice to be thrown further, impacts are not anticipated at 620 feet from a turbine (the closest distance of a turbine to a nonparticipating property line). The record also demonstrates that Applicant has in place appropriate operational mechanisms to minimize and avoid the potential for ice throw. In addition, turbines have ice detection systems that will detect icing conditions from a remote control center, enabling the turbines to be paused remotely in the event that icing is taking place. Further, Applicant has committed to the following condition: Applicant will use two methods to detect icing conditions on turbine blades: (1) sensors that will detect when blades become imbalanced or create vibration due to ice accumulation; and (2) meteorological data from on-site permanent meteorological towers, on-site anemometers, and other relevant meteorological sources that will be used to determine if ice accumulation is occurring. These control

> systems will either automatically shut down the turbine(s) in icing conditions (per the sensors) or Applicant will manually shut down turbine(s) if icing conditions are identified (using meteorological data). Turbines will not return to normal operation until the control systems no longer detect an imbalance or when weather conditions either remove icing on the blades or indicate icing is no longer a concern.[1]

Q. Mr. Kearney notes that Prevailing Wind Park is generally willing to accept the conditions attached to the permit issued for Dakota Range. Would you like to comment on any of these conditions?

A. Yes. I have reviewed Permit Condition No. 40 related to ice throw, which states:

> Applicant will use two methods to detect icing conditions on turbine blades: (1) sensors that will detect when blades become imbalanced or create vibration due to ice accumulation; and (2) meteorological data from on-site permanent meteorological towers, on-site anemometers, and other relevant meteorological sources that will be used to determine if ice accumulation is occurring. These control systems will either automatically shut down the turbine(s) in icing conditions (per the sensors) or Applicant will manually shut down turbine(s) if icing conditions are identified (using meteorological data). Turbines will not return to normal operation until the control systems no longer detect an imbalance or when weather conditions either remove icing on the blades or indicate icing is no longer a concern. The Project Owner will pay for any documented damage caused by ice thrown from a turbine.

Prevailing Wind Park would accept this same condition in a permit issued for the Project.

[1] Final Decision and Order Granting Permit to Construct Wind Energy Facility; Notice of Entry, at ¶ 69, Commission Docket EL18-003 (July 23, 2018).

Q. Mr. Kearney also testifies that he believes a property line setback of 1,500 feet would "provide added protection for an individual's personal property or livestock in the event of ice throw or blade malfunction". Do you agree?

A. I disagree with this conclusion. I note that Mr. Kearney also testified that there is inadequate record evidence to support a 1,500 foot property line setback and I agree. The setbacks incorporated into the layout for the Project provide adequate protection for ice throw and blade malfunction and a 1,500 foot property line setback is not necessary and would not provide additional protection.

As I detailed above, the risk of ice throw is very low and, as the Commission has already found, limited to within approximately 620 feet of the turbine. The concern of ice throw, as I understand, would be primarily with adjacent non-participating landowners. In accordance with South Dakota law, the turbines in the Prevailing Wind Park Project are set back from the property lines of non-participants a minimum of 1.1 times the tip height of the tower (i.e., the hub height (365.8 feet) + the radius of the rotor (224.75 feet)), or 649.61 feet. This distance is sufficient to contain an ice throw event to the participating landowner's property. Therefore, the additional distance would not create additional protection for non-participating landowners.

A blade malfunction that results in a separation from the tower is an even rarer event and provides less support for a 1,500 foot setback. I have seen this occur only once. The distance from the hub was approximately 54 meters, or approximately 178 feet.[2] Again, a setback of 1,500 feet would not provide additional protection to non-participating landowners.

[2] *See* Prevailing Wind Park Response to Staff DR 1-8; Prevailing Wind Park Responses to Intervenors' DRs 1-23, 1-24, 1-25, 1-26, and 1-27 in Exhibit DK-2.

Q. To the extent the Commission has questions regarding Project operations at the evidentiary hearing in this matter, will you be available to answer such questions?

A. Yes.

III. CONCLUSION

Q. Does this conclude your Rebuttal Testimony?

A. Yes.

Dated this 26th day of September, 2018.

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Scott Creech

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SCOTT CREECH

2180 South 1300 East, Suite 600, Salt Lake City, Utah 84106

RENEWABLE ENERGY

sPower **August 2018 – Present**

- *Construction Manager*
  - Preconstruction work in site development, TSA, FSA, and scope of work; oversight direction for sPower consultants.
  - Site coordination with general contractor, landowners, and turbine suppliers involving all aspects of construction, including safety, quality, production, and environmental.

Pattern Energy **February 2012 – August 2018**

- *Construction Site Manager*
  - Oversight direction for consultants; site coordination with general contractor involving all aspects of construction, including safety, quality, production, and environmental.
- *Operations Manager*
  - 150 MW wind site at Ely, NV, and 400+ MW wind site at Panhandle, TX.
  - Initiated all site programs and procedures while mentoring two assistant facility managers.

Third Planet Windpower ("TPW") **August 2009 – January 2012**

- *Construction Site Manager*
  - Oversight direction for TPW consultants.
  - Site coordination with general contractor involving all aspects of construction, including safety, receiving, installation, commissioning, production, and environmental.
- *Mechanical Construction Superintendent*
  - Owner representative for receiving, turbine installation, and commissioning.

Florida Power & Light ("FPL") (NextEra) **April 2006 – July 2009**

- *Project Leader*
  - Resurrected two of FPL's lowest performing wind sites, improving productivity by over 390% and 30%, respectively.
  - Successfully overhauled the sites' performance through leadership style of building people, stating expectations, emphasizing safety, and increasing morale.
- *Project Leader and Wind Technician*
  - Managed successful start-up operation at an 84 MW site of GE 1.5-turbines
  - Staffed and directed O&M while coordinating warranty work with turbine vendor
  - Set national GE fleet records with four months of availability exceeding 99%

MANUFACTURING **1986 – 2005**

20-year career in various manufacturing industries: computers, air conditioners, shock absorbers, highway construction equipment, tire inflation system.

- Progressive areas of responsibility, including Director of Operations, Business Unit Manager, Manufacturing Engineering Manager, Quality Control Manager, and Supervisor.
  - Operations Manager – Led 325 employees in a self-contained business unit.
  - Change Agent – Introduced and implemented LEAN principles in five diverse operations.
- Start-Up Director – Designed and implemented start-up operations for a new product.
- Varied labor arrangements – non-union, union, union in right-to-work, contract, and temporary.

EDUCATION

Bachelor of Science, Industrial Engineering **1986**
Texas A&M University, College Station, TX