Pikes Peak Regional Building Department

2880 International Circle
Colorado Springs, Colorado 80910

SPECIAL MEETING
TECHNICAL COMMITTEE MINUTES

March 19, 2019 1:00 p.m.

MEMBERS PRESENT:	Chairman Chris Richardson, Building Contractor A or B Steve Horner, Structural Engineer Micah Langness, Master Plumber Dan Rial, Mechanical Contractor Michael Finkbiner, Building Contractor D
MEMBERS ABSENT:	Swagata Guha, Architect Larry Bobo, Electrical Contractor
OTHERS PRESENT:	Roger Lovell, Regional Building Official Virjinia Koultchitzka, Regional Building Counsel Jay Eenhuis, Deputy Building Official – Plans John Welton, Deputy Building Official – Inspections Linda Gardner, Executive Administrative Assistant

PROCEEDINGS:

Chairman Chris Richardson called the meeting to order at 1:01 p.m.

VARIANCE REQUEST (as continued from March 6, 2019)

1. 31275 Washington Road – Alsey Davidson, Grazing Yak Solar, LLC, requests a variance to Section RBC302.4.37, 2017 Pikes Peak Regional Building Code, and Section 1609.3, 2015 International Building Code, to allow wind design using 105 mph (Vult), where 130 mph (Vult) is required.

   Chairman Richardson stated the Colorado Springs Fire Department takes no exception with this variance request.

   Alsey Davidson appeared and gave the definition of power generating facilities as noted in the ASCE 7-10 Code. She stated solar plants are different in nature and do not fall under this category/definition. She stated Mortensen Construction ("Mortensen") sent RBD staff and this Committee a letter describing the various solar projects across the country that Mortensen has built to Risk Category I. Ms. Davidson stated Nextera Energy Resources

("Nextera") has built hundreds of projects across the country to a Risk Category I, with only one other project that had a similar variance request in Arapahoe County, Colorado, i.e. Titan Solar. She stated Arapahoe County approved the variance request at a 105 mph threshold, and the project was built to a Risk Category I. She stated Mortensen submitted a letter to the Committee regarding Risk Category I facilities that they have built around the country. Ms. Davidson stated they have found with their other facilities when there is a wind event, it does not take the entire site offline; but only those panels that have been broken, which is usually a small percentage of the whole solar farm.

Dr. David Banks appeared and stated he has a Ph.D. in wind engineering from Colorado State University, and he has worked for a wind engineering firm in Fort Collins for 18 years, focusing for the past 10 years on wind loads on solar projects. He stated he prepared the site study submitted to the Committee for this variance request. He stated he supports the variance request and believes the wind speeds provided in his site study are consistent with ASCE 7-16 at 114 mph wind speed.

Steve Horner stated he believes this site should be listed as a Risk Category III, with a minimum of 120 mph wind speed. He stated the western portion of El Paso County is in the special wind region, thus exceeding the baseline of 120 mph wind speed for a Risk Category III structure.

Ms. Davidson stated the closest residence to this solar farm is approximately 600 feet from the site. She stated there are only two residences within a 1/2-mile radius of the solar farm, and the area is primarily used for livestock grazing.

Dr. Banks stated the down-slope winds in Colorado can be substantial. He stated there is a wind region map for the front range. He stated he has done an analysis for wind sites in the region and the closer you are to the mountains, the more substantial the wind speeds are. He stated the Grazing Yak solar farm is not in the special wind region.

Alex Roedel, Director, NEXTracker Solar Tracker System, appeared by telephone. Mr. Roedel stated he is the Director of Design and Engineering for NEXTracker. He stated he is in charge of the engineering for the NEXTracker structures for this project, and had worked the structural calculations.

Steve Horner asked Mr. Roedel if the racking system is capable of withstanding 120 mph wind speeds. Mr. Roedel stated with that wind speed, they would use a slightly different version of the tracker that would stow at 50 degrees rotational.

Ms. Davidson asked Mr. Roedel if the trackers can withstand the increased wind speeds of 120 mph. Mr. Roedel stated NEXTracker can supply the structures within the timeline required by Nextera. He asked what the justification is for a Risk Category III because 95% of their sites with similar terrain and population are a Risk Category I. He stated it is very rare to have a Risk Category III wind speed. Jay Eenhuis stated that the 2017 edition of the PPRBC (the "Code") amends the wind speeds from the mapped wind speeds in ASCE 7-10 to a minimum wind speed of 130 mph (Vult) for Risk Categories I and II, and then a higher value for Risk Categories III and IV, currently shown as 150 in the Code. He stated it is being reviewed because an error has been brought to their attention, which may result in a design windspeed of 140 mph for Risk Categories III and IV.

Mr. Horner stated this is a power generation plant. Mr. Roedel stated the solar panels are considered extremely low as life safety structures. Mr. Horner stated just last week this area had 97 mph winds measured at the Colorado Springs airport. Mr. Roedel stated in most situations they have found that the winds go around the structures because of the design of the structures.

Ms. Davidson stated that their hesitancy in categorizing these panels as a Risk Category III is due to not wanting to set a precedence that will require that they go to Tier Two suppliers, which they feel are not of the same quality. Jay Eenhuis stated the Clear Springs Ranch solar farm was classified as a Risk Category I, and was designed per the Code minimum of 130 mph.

Dr. Banks stated there is a misconception that if you increase the wind speeds for the structures, you get a safer system, which is not necessarily true. He stated he recommends that the Committee consider the wind speeds in his report for this solar farm. Mr. Horner stated he does not believe the Committee is necessarily increasing the wind speeds, but just following the Code. He stated the suppliers should have products to handle different wind speeds. Dr. Banks stated he believes the wind speeds at the Grazing Yak site are approximately 114 mph.

The applicant had no further witnesses it wished to call. There were no comments from the public on the variance application.

Ms. Koultchitzka stated the Technical Committee has authority to interpret and recommend minor variances from the Code, contingent upon a finding that at least one of the following conditions exists: (1) the true intent of the applicable Code has been incorrectly interpreted; (2) the provisions of the applicable Code do not fully apply; and (3) an equally good or better form of construction is proposed.

A motion was made by Steve Horner to recommend to the Board of Review **APPROVAL** of the variance request to allow for the design wind speed of 114 mph (Vult) for a Risk Category III structure based on the Wind Speed Analysis Report provided by the applicant, seconded by Micah Langness; the motion carried unanimously.

The meeting adjourned at 2:03 p.m.

Respectfully submitted,

Roger N. Lovell
Regional Building Official

RNL/llg

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