STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

Application of Baron Winds LLC for a Certificate under Article 10 of the Public Service Law — Case No. 15-F-0122

PRE-FILED TESTIMONY OF:

KENNETH KALISKI

SENIOR DIRECTOR

RSG

55 RAILROAD ROW

WHITE RIVER JUNCTION, VERMONT 05001

Q: Please state your name, employer, and business address.

A: My name is Kenneth Kaliski. I am employed by RSG in White River Junction, Vermont.

Q: What is your position at RSG?

A: I am a Senior Director at RSG.

Q: How long have you been employed with RSG?

A: I have been employed by RSG for over 30 years.

Q: Please describe your educational background and professional experience.

A: I have a BA in Biology and Environmental Studies from Dartmouth College and a BE in Engineering from the Thayer School of Engineering at Dartmouth College. My educational experience includes coursework in sound level monitoring, noise control engineering, active noise control, indoor and outdoor acoustical modeling, vibration control, sound level meter design, the physics and mathematics involving sound and its propagation, biology, environmental health, and environmental engineering.

I am a licensed professional engineering in the states of Vermont, New Hampshire, Michigan, Massachusetts, and Illinois. I am Board Certified through the Institute of Noise Control Engineering (INCE) and formally served on INCE's Board of Directors and Vice President of Board Certification. Within INCE I am currently the co-chairman of the Wind Turbine Technical Activity Committee. I am also a member of the Acoustical Society of America and serve on its Noise Technical Activity Committee.

I have been involved in noise from wind projects since 1993. I am actively involved in research involving wind turbine noise and have more than a dozen publications on the subject. My resume is attached.

Q: Please describe your current responsibilities with RSG.

A: I oversee the Acoustics and System Dynamics Group.

Q: Have you previously testified before the New York State Public Service Commission or Siting Board on Electric Generation?

A: I recently provided written and oral testimony in the matter of Cassadaga Wind LLC Application for a Certificate of Environmental Compatibility and Public Need Pursuant to Article 10 to Construct a 126 MW Wind Energy Project; Case No. 14-F-0490.

Q: Have you previously served as an expert witness before any other court, agency, or other body on the subject you plan to offer testimony on today?

A: Yes, I have testified before the Vermont Public Service Board, the Maine Department of Environmental Protection, Maine Board of Environmental Protection, Maine Legislature, Ohio Power Siting Board, and many other quasi-judicial settings (Planning Commissions, Zoning Boards, County Commissions, etc.)

Q: What is the purpose and scope of your testimony in this proceeding?

A: To sponsor certain portions of the Baron Winds Project Application or the Exhibits thereto.

Q: What portion(s) of the Application is your testimony sponsoring?

A: Exhibit 19: Noise and Vibration. RSG prepared a Noise Impact Assessment for the construction and operation of the Baron Winds Wind Farm, related facilities and ancillary equipment.

Q: Were these Exhibits, Application sections, or studies prepared by you or under your direction and supervision?

A: Yes.

Q: In your testimony, will you refer to, or otherwise rely upon, any studies, publications, data or documents produced by persons other than yourself/your company? If so, please cite these sources. [These are independent studies, etc.]

A: References are provided in Exhibit 19 and RSG's report.

Q: Does this conclude your testimony?

A: Yes.

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KENNETH KALISKI, PE, INCE BD. CERT.

Senior Director

Ken Kaliski has 30 years of experience, having worked in all of RSG's market areas with a focus on engineering and advanced analytics. His technical specialty is in noise control engineering, where he works on projects such as community noise monitoring and modeling, architectural acoustics, transportation noise, and industrial noise control. He also works on complex modeling projects in the fields of market and energy research. Ken is the co-holder of Patent 7,092,853 for an Environmental Noise Monitoring System.

EXPERIENCE

30 years

EDUCATION

BE, Engineering, Thayer School of Engineering, Dartmouth College (2002)

AB, Biological Sciences and Environmental Studies, Dartmouth College (1985)

PROJECT EXPERIENCE

Spruce Mountain Wind, Maine – Conducted assessment of turbulence intensity and potential impacts to amplitude modulation during permitting. During post-construction, ongoing management of continuous 24/7/365 compliance monitoring system. Developed software for processing combining 50 ms sound monitoring data with turbine SCADA and met tower instrumentation to assess sound pressure level, amplitude modulation, and tonal sound over 10-minute compliance periods.

Massachusetts Research Study on Wind Turbine Acoustics – Leading a study on wind turbine sound to help the State of Massachusetts Clean Energy Center and Department of Environmental Protection improve the regulation of wind turbines in the State. The study includes detailed data collection around five wind projects in New England, support to the Wind Turbine Technical Advisor Committee of the MassDEP, and quantitative analysis of factors such as infrasound, amplitude modulation, sound levels, and sound propagation modeling.

Highland Plantation Wind Farm – Managed the noise study for the Highland Plantation Wind Farm near Bingham, Maine. The project included long-term sound monitoring at five locations around the site and modeling the 39 turbines proposed for the project. Sound propagation modeling was done to assess conformance with the Maine DEP standards, and mitigation was recommended in a report as part of the permitting proceedings.

Saddleback Ridge Wind Farm – Conducted the pre-construction noise study for the Saddleback wind farm under both the old and new Maine noise standards. Participated in public meetings and hearings for the 33 MW project near Carthage, Maine.

Kenneth.Kaliski@rsginc.com

Review of Wind Project on Behalf of Oakfield Township – Retained by the Oakfield Township in Maine, reviewed the noise portion of the application of First Wind to construct a wind farm. Provided presentations to the Township on general noise topics and, separately, on the findings of our review. Consulted to the Wind Energy Committee on language for a proposed ordinance.

Wind Farm Noise Analysis – Conducted a study of the noise impacts of the Brodie Mountain Wind Project specifically with respect to a nearby condominium development. Sound levels were monitored continuously over several days and these monitored levels were then correlated against ridgeline wind speed.

Deerfield Wind Farm, VT – Prepared a noise study for Vermont's Section 248 filing on a 34 MW wind power project proposed for southern Vermont. The project included background sound monitoring, sound propagation modeling of the wind turbines and substation, and preparation of reports and exhibits. Sound modeling included analyses of 8760 hours of meteorology. A report was prepared and testimony was presented to the Section 248 Board

Noise Forecasting for a Wind Turbine Demonstration Project, VT – conducted noise measurements and modeling for a proposed 12-tower wind turbine project by the Green Mountain Power Company in Searsburg, Vermont. Used the NTerrain model to quantify the effects of atmospheric loss, vegetation, wind, and terrain features on octave-band noise levels in the area.

Black Fork Wind – Conducted a noise assessment of this 100.5 MW wind project in Richland and Crawford Counties in Ohio. Monitored background sound levels over a two-week period for eight locations over an eight-day period. Correlated wind speed measured at project met towers with background wind speeds and assessed the average background sound level over all sites for use in comparing modeled wind turbine sound levels to Ohio's relative sound standard. Presented testimony to Ohio Power Siting Board.

Review of Wind Turbine Impact Study, Maine – For the Maine Land Use Regulatory Council, reviewed the noise impacts for a proposed 580 turbine, 210 MW wind farm in the Boundary Region in western Maine.

Kingdom Community Wind – Prepared a noise assessment of a 63 MW wind project in Lowell, Vermont. The project included background sound monitoring at six locations, detailed sound modeling to assessment annualized impacts, testimony before the Public Service Board, and ongoing post-construction sound monitoring.

Kansas Wind Farm Study – Conducted sound propagation modeling for a proposed 100 MW wind farm in Kansas. Measured background sound levels at several locations around the proposed site. Calibrated the sound model using measurements at an operating wind farm in Kansas. Prepared a report comparing the impacts to a noise standard and suggested mitigation necessary to meet the standard.

PUBLICATIONS

McCunney, R., Mundt, K., Colby, D., Dobie, R., Kaliski, K., and Blais, M., "Wind Turbines and Health; A Critical Review of the Scientific Literature," Journal of Occupational and Environmental Medicine 56(11) 2014.

Kaliski, K.; Duncan, E.; McPhee, P; West, C.R.; O'Neal, R.; Zimmerman, J.; Snyder, J., "The Massachusetts research study on wind turbine acoustics - Methods and goals", Proceedings of NoiseCon14, Fort Lauderdale, Florida, 2014.

Kaliski, K., Neeraj, G., Prevalence of complaints related to wind turbine noise in northern New England," Proceedings of Meetings on Acoustics, Vol 19, 2013

Kaliski, K., "Winning Community Acceptance: Dispelling Myths and Promoting the Realities about Wind Power – Noise Impacts," AWEA New England Regional Wind Energy Summit, 2012, and AWEA Community Wind Working Group webinar, 2012

Kaliski, K., Wilson, D.K., Vecherin, S., Duncan, E., "Improving Predications of Wind Turbine Noise Using PE Modeling," *Proceedings of the 2011 Institute of Noise Control Engineers NOISECON 2011*

Kaliski, K., and Duncan, E. "Calculating Annualized Sound Levels for a Wind Farm," *Acoustical Society of America, Proceedings of Meetings on Acoustics*, Vol. 9, 2010.

Park, L, Lawson, S, Kaliski, K., Newman, P. and Gibson, A. "Modeling and Mapping Hiker's Exposure to Transportation Noise in Rocky Mountain National Park," *Park Science* Vol. 26 No 3, Winter 2009-2010.

Kaliski, K. and Duncan, E. "Propagation modeling Parameters for Wind Power Projects*," Sound & Vibration Magazine*, Vol. 24 no. 12, December 2008.

Duncan, E. and Kaliski, K. "Improving Sound Propagation Modeling for Wind Turbines," *Acoustics 08*, Paris 2008.

Kaliski, K. "Sound Advice: Evaluating Noise Impacts in a Changing Landscape," American Wind Energy Association Fall Symposium, November 2008.

Kaliski, K., and Duncan, E. "Propagation Modeling Parameters for Wind Turbines," *Proceedings of the 2007 Institute of Noise Control Engineers NOISECON* 2007.

Collier, R. and Kaliski, K. "A Low-Complexity Environmental Noise Monitoring System for Unattended Operation in Remote Locations," Presented at the *Acoustical Society of America conference*, Salt Lake City, 2007.

Hathaway, K, and Kaliski, K. "Assessing Wind Turbines using Relative Noise Standards," *Proceedings of the 2006 Institute of Noise Control Engineers INTERNOISE* 2006.

Kaliski, K. H., Mills-Tettey, A., Seitaridou, E., Collier, R. "Low-Complexity Continuous Noise Monitoring System for Communities, Small Airports, and Remote Areas," *Proceedings of the 2001 Institute of Noise Control Engineers NOISECON 2001.*

PRESENTATIONS

Kaliski, K., Lozupone, D., McPhee, P., O'Neal, R., Zimmerman, J., Wilson, K., Rowan-West, C., "The MassCEC Wind Turbine Noise Research Project – Research Goals and Preliminary Results," Acoustical Society of America, Indianapolis, 2014.

Kaliski, K., Duncan, D., McPhee, P., O'Neal, R., Zimmerman, J., Rowan West, C., "The Massachusetts Research Study on Wind Turbine Acoustics – Methods and Goals", American Wind Energy Association 2014.

Kaliski, K., "Wind Turbines – Noise Generation, Exposure, and Stressors," Society of Environmental Toxicology and Chemistry North Atlantic Chapter, 2013

Kaliski, K., Neeraj, G. "Prevalence of complaints related to wind turbine noise in northern New England," 21st International Congress on Acoustics, Montreal, 2013

Kaliski, K., "Winning Community Acceptance: Dispelling Myths and Promoting the Realities about Wind Power – Noise Impacts," AWEA New England Regional Wind Energy Summit, 2012, and AWEA Community Wind Working Group webinar, 2012

Kaliski, K., "Topics in Public Acceptance, Human Impacts: Sounds and Shadow Flicker," New England Wind Energy Education Project Conference *Wind Energy in New England: Understanding the Issues Affecting Public Acceptance*, 2011

Kaliski, K., "Wind Turbine Noise Regulation," (webinar) New England Wind Energy Education Project, 2010

Kaliski, K. "Sound Advice: Evaluating Noise Impacts in a Changing Landscape," American Wind Energy Association Windpower 2009 Conference and Exposition 2009.

Kaliski, K. "Calibrating Sound Propagation Models for Wind Power Projects," *State of the Art in Wind Siting Seminar*, October 2009, National Wind Coordinating Collaborative.

Kaliski, K., Aultman-Hall, L. (organizer), "Transportation, Health, and Environment," University of Vermont Honors College seminar, 2008

Kaliski, K. "Challenges and Opportunities for Noise Mapping in the United States," *Acoustics 08*, Paris 2008.

LICENSES, CERTIFICATIONS, MEMBERSHIPS, AND AFFILIATIONS

- Qualified Environmental Professional, Institute of Professional Environmental Practice
- Licensed Professional Engineer (PE), States of Vermont, New Hampshire, Massachusetts, and Michigan
- Board Certified, Institute of Noise Control Engineering
- Acoustical Society of America
- Air and Waste Management Association
- Institute of Professional Environmental Practice
- Tau Beta Pi Engineering Society