

Professional Qualifications

Michael Hankard



Education:

B.S. Electrical Engineering
Acoustics Specialization
University of Maine, 1990

Professional Affiliations:

Institute of Noise Control Engineering
Acoustical Society of America

Agency Experience:

Public Service/Utility Commissions
(NY, WI, MN, WV, SD, RI)
World Bank
Federal Highway Administration
Dozens of cities/counties in 20 states

Summary:

Mr. Hankard has been practicing in the fields of acoustics and noise control engineering for the past 30 years. In 1996 he started Hankard Environmental. The firm consults in environmental noise and has successfully completed over 500 projects relating to wind energy, solar facilities, gas-fired power generation facilities, oil and gas extraction operations, highways, mines, gravel pits, entertainment venues, lawsuits, and land development projects.

Mr. Hankard has experience in all aspects of environmental noise, including field measurements, predictions, impact assessments, mitigation design, and expert testimony at local and state proceedings. He has conducted ambient and compliance noise surveys lasting from days to years, used a variety of models to predict noise from wind turbines, roadways, and industrial facilities, and designed a wide variety of mitigation measures such as walls, enclosures, baffles, and silencers.

Vibration experience includes the measurement and prediction of ground-borne and structure-borne levels from sources such as railroads and blasting; and the assessment of impact according to internationally-accepted standards.

Noise Level Compliance Measurements

Mr. Hankard has conducted dozens of extensive environmental noise measurement studies for projects involving transmission line construction and operation, electrical substations, utility-scale wind turbines, photovoltaic solar plants, and fossil-fuel fired power plants. Over the past 30 years he has conducted compliance surveys at some of the largest wind, solar, and gas-fired power plants. These surveys include near-field measurements of noise from individual pieces of equipment, attended property line measurements, and the collection and analysis of long-term monitoring. Mr. Hankard is versed in the various standards that are applicable to these measurements, including ANSI S12.9, ANSI S12.18, and ISO 1996-2.

Ambient Noise Measurements

Mr. Hankard has conducted more than 100 ambient sound surveys for the power generation, land development, mining, and other industries. His experience includes the design, execution, data analysis, and reporting of these studies. A successful study begins with a careful consideration of the project environs, the relative location of sources and residences, applicable regulations, and potential seasonal fluctuations. The selection of the measurement locations is paramount as is the need to possibly measure for weeks to months to ensure collection of sufficient data.

Modeling

Mr. Hankard has modeled (predicted) noise from hundreds of industrial sources, including wind, solar, and gas-fired power plants, transmission lines, substations, construction operations, roadways, and commercial developments. Mr. Hankard has experience with different modeling methods, including ISO 9613-2:1996, Nord2000, and CONCAWE, the different settings to be used within these methods (ground type, propagation rate, directivity, low frequency considerations), and the determination of emission factors based on measurements or estimates. Most importantly, Mr. Hankard has the experience to know how to relate modeling results to each project, putting the numerical results into perspective for the benefit of the audience of the study at hand.

Expert Testimony

Mr. Hankard has represented clients at public service commission hearings as an expert on noise in New York, Wisconsin, Minnesota, West Virginia, South Dakota, and Rhode Island. He has also provided testimony in legal proceedings, including municipal courts, local and county hearings, and federal courts. In addition, he has presented noise-related information at dozens of local and county hearings and meetings, and before the general public at project information sessions.

Representative Projects

Mr. Hankard was lead consultant for the acoustical aspects of the following projects:
Southern Oak Solar Facility, Georgia: Noise emission measurements (2019)
Phish: Outdoor concert noise monitoring (2017-2019)
Freeborn Wind, MN: Ambient survey, modeling, testimony (2017-present)
Badger Hollow Solar, WI: Ambient survey, modeling, testimony (2019)
Akyem Gold Mine, Ghana: Ambient measurements and impact analysis (2010)
Lackawanna Energy Center, PA: Design and compliance measurements (2019)
Lake Winds Energy Park, MI: Compliance measurements (2016-2017)
Prairie Breeze Wind Energy Center, NE: Compliance measurements (2016)
California Ridge Wind Energy Center, IL: IPCB Compliance measurements (2013)
Willow Creek Energy Center, OR: Long-term compliance monitoring (2009-2016)
Highland Wind, WI: Ambient survey, Public Service Commission testimony (2013)
Shirley Wind, WI: Ambient survey and compliance testing (2010-2012)