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Stephen E. Ambrose

15 Great Falls Road
Windham, ME 04062, USA

Education:

1973-75	**University of Massachusetts**, Amherst, MA	B.S. Civil Engineering
1971-73	**Cape Cod Community College**, Barnstable, MA	A.A. Math/Science

Professional:

1978	**Institute of Noise Control Engineering**	Full Member 1981/Board Certified 1993
1981	**Acoustical Society of America**	Full Member

Expert Testimony:

Wind Turbine Noise Technical Advisory Group (WNTAG), Massachusetts Department of Environmental Protection, Boston, MA, June 2013 to December 2013

Wind turbine peer-review, Remanded Court Decision to the Town of Charlestown Zoning Board of Review, Charlestown, RI, June 2013.

Wind turbine legislation re: S 30 Vermont House Committee on Natural Resources and Energy, April 18, 2013, Montpelier, VT.

Wind turbine moratorium legislation re: S. 30 and S.21, Vermont Senate Natural Resources & Energy Committee, January 31, 2013, Montpelier, VT.

Wind turbine adverse health effects, Environmental Review Tribunal Hearing**,** Ministry of the Environment June 15, 2012, Ontario, Canada.

Community noise impact assessment, Maine Senate Environmental and Natural Resources Committee, February 8, 2012, Augusta, ME.

Published Professional Reports:

Falmouth, Massachusetts wind turbine infrasound and low frequency noise measurement; Inter-Noise 2012, Session 325, 10-02, New York City, NY, August 19-22, 2012, Stephen Ambrose, Robert Rand, Carmen Krogh.

Wind Turbine Acoustic Investigation: Infrasound and Low-frequency Noise – Case Study, Bulletin of Science Technology & Society, August 22, 2011, 0270467611417849, Stephen Ambrose, Robert Rand, Carmen Krogh.

Occupational Health and Industrial Wind Turbines: A Case Study, Bulletin of Science Technology & Society, August 22, 2011, 0270467611417849, Robert Rand, Stephen Ambrose, Carmen Krogh.

Noise ordinance design: mapping by land use, Noise-Con 2007, Reno Nevada, October 22-24, 2007, Robert Rand, Stephen Ambrose, Caroline Segalla.

Published White Paper:

The Bruce McPherson Infrasound and Low Frequency Noise Study, For Christopher Senie & Associates, Westborough, MA December 14, 2011, Stephen E. Ambrose, Robert W. Rand

Professional Reviews - industrial wind turbines:

Independent Peer-review – Douglas Woods Wind Farm, Douglas, Massachusetts, Report to Brian Swartz, Esq., Senie & Associates, P.C., Westborough, MA, July 26, 2013, Stephen Ambrose, Robert Rand.

Independent Peer-review – Saddleback Ridge Wind Farm, Carthage, Maine, Report to Rufus Brown, Esq., Brown & Burke, Portland, ME, June 28, 2013, Stephen Ambrose, Robert Rand.

Acoustic Analysis Report – Whale Rock Wind Development Project – Charlestown, RI, Report to John Mancini Esq., MAK Law Offices, Providence, RI, June 4, 2013.

Acoustic Analysis Report – Environmental Sound Level Assessment – The Rte. 44 Stop & Shop Wind Project, Report to David Paliotti, Greenbaum, Nagel, Fisher & Paliotti, LLP, Boston, MA, March 13, 2013, Stephen Ambrose, *Hoosac Wind Project*, Letter to Kenneth Kimmell, Commissioner, Massachusetts Department of Environmental Protection, Boston, MA, September 12, 2012, Stephen Ambrose, Robert Rand.

Vermont Noise Monitoring Plan, Sheffield Wind Project Operational Sound Level Compliance Test - Wintertime Conditions, Sheffield Wind Project Operational Sound Level Compliance Test - Springtime Conditions, letter to Annette Smith, Executive Director, Vermont for a Clean Environment, Inc., Danby, VT.

Anderson Cranberries Wind Project, Letter to Marilyn Byrne, Plymouth Zoning Board of Appeals, Plymouth, MA, February 7, 2012, Stephen Ambrose, Robert Rand.

Madaket Wind Turbine Acoustic Analysis, letter to Common Sense Nantucket, February 1, 2012, Robert Rand, Stephen Ambrose,

TTOR Wind Turbine Project, Cohassett, MA, Letter to Damon Seligson, DiNicola, Seligson & Upton, LLP, Boston, MA, April 19, 2012, Stephen Ambrose, Robert Rand.

Salem Wind Turbine Generator Study, letter to Christopher Senie & Associates, Westborough, MA, September 9, 2011, Stephen Ambrose, Robert Rand

Pisgah Mountain Wind Project, letter to Charles E. Gilbert III, Gilbert & Grief, P.A., Bangor, ME, April 12, 2011, Stephen Ambrose, Robert Rand.

Proposed Wind Energy Facility in the Town of Brewster Massachusetts, letter to Christopher Senie & Associates, Westborough, MA, January 6, 2011, Stephen Ambrose, Robert Rand.

Professional Experience:

2008-present **S.E. Ambrose & Associates** **Windham, ME**
1991 to 2008 part-time

Principal Consultant / Owner

- Wind turbine noise, infrasound and low frequency noise investigations to understand why neighbor complain and government agencies unable to protect public from adverse health impacts. Wind turbine application peer-reviews and community impact assessments.
- Acoustic measurements for noise source identification and mitigation. Noise compliance for workplace and community environments. Peer-reviews for states and municipalities. Public education, presentations, and guidance for municipal ordinances.

2001-2008 **Stone & Webster / A Shaw Group Company** **Stoughton, MA**

Senior Environmental Engineer

- Noise & vibration control responsibilities for industrial & power generation projects.
- Combustion turbine, reciprocating engine & compressor station evaluations.
- Community and environmental impact assessments, industrial noise investigations, and noise control feasibility and installation.

1994-2001 & 1989-91 **Tritek Inc.** **Lexington, MA**

Manager Instruments & Applications

- Manufacturer's rep for dynamic measurement, test, analysis, predictive maintenance & inspection instruments.
- Instruments; spectrum analyzers, time-wave form analyzers, data acquisition systems, multi-channel AM, FM & digital tape recorders, precision sound level meters, vibration sensors and transducers, and RF / microwave frequency components.
- Inspection; hi-resolution CCD cameras, SESI radio frequency eddy current analyzers and lubrication oil analysis service.

1976-89 & 1991-93 **Stone & Webster Engineering** **Boston, MA**

Senior Environmental Engineer

- Instrumentation Lab Manager, Noise Control Specialist, Vibration and Dynamic Measurement Specialist, Equipment and Station Start-up Engineer,
- In-situ measurements, evaluations & mitigation, in-house post-analysis & reports.
- Dynamic evaluations using spectrum, modal & finite element analysis, multi-channel data acquisition, predictive maintenance & related application programs.
- Dynamic & static sensors; acceleration, velocity, displacement, torque, acoustic, pressure, strain gage, & temperature.

Significant Projects:

Shoreham Nuclear Power Station

- Responsible for compliance vibration tests for major mechanical equipment prior to being accepted by the station owners.
- Solved 500 HP screen-well pump excessive vibration problems when vendor gave-up after 3 installs and 2 factory rebuilds. Improper mounting connections enabled the system to vibrate at a natural frequency excited by running speed imbalance.
- During the critical 900 MW steam turbine test, identified that a vibration was caused by a shaft-rider sensor was positioned above a defect that was not part of the bearing surface. Factory team could not clearly define the problem. The test was successful.
- Solved a long-term excessive vibration problems on a 500 HP screen-well pump after the vendor/installer gave-up in frustration after 3 installs, removing for 2 factory rebuilds. Problem corrected by stiffening mounting bracket so the pump would not excite a running speed natural frequency.
- Involved with identifying the cause for two emergency generator crankshaft failures.
- Performed the start-up vibration compliance tests for 2 V12 replacement emergency generators.

Chesterfield Power Station Unit 5

- This project replaced to top 70-ft of a very large-size 300-ft column with more than 100-tons of dead load.
- Responsible for 110 channels of strain and LVDT transducer system used to monitor structure stability during the critical 10 MW thermal jacking procedure to remove and replace top 70-ft of a main support column. Monitored for three weeks to determine the structural movement and load transfers caused by the summertime sun movement.
- Calculated building dead load transfers between main-support columns during dynamic thermal jacking. Preferred vs. telephone conversation with Boston engineering staff.

Massachusetts Water Resources Authority

- Developed a computer spreadsheet, prediction noise model to account for over 250 pieces of construction equipment moving about the site for over 10-years. Recommendations were made for installing noise control equipment, devices and techniques to comply with noise limits at several noise sensitive properties.

Tennessee Natural Gas / FERC

- Performed environmental noise impact assessments for expanding the northeast corridor capacity with more than 30 new or expanded combustion turbine compressor stations. Some station had to meet 40 dBA noise limits at 400-ft.

Boston Edison

- Performed 20 environmental noise assessments throughout Massachusetts to determine which sites would be feasible for new development or expanding existing electric power-generation facilities.

Volunteer:

1994-2005	Zoning Board of Appeals Windham, ME	Windham, ME
1993-2005	Ordinance Review Committee	Windham, ME

Military:

1967-1971	Search and Rescue Crew Member Radio/Navigator, Avionics Technician	U.S. Coast Guard