To the Board of Environmental Protection,

Thank you for the opportunity to speak today as a Maine resident. My name is Robert Rand. I am a resident of Brunswick, and a member of the Institute of Noise Control Engineering (or INCE). I have over thirty years of experience in general and applied acoustics including ten years work on power plant noise control engineering in the Noise Control Group at Stone and Webster Engineering Corporation in Boston. I run a small business providing consulting, investigator and design services in acoustics.

I speak today in support of the Proposed Amendments to the DEP Noise Rule for wind turbine projects. With respect to environmental noise impacts, my professional guiding principle is coded in the INCE Canon of Ethics, which states, "Hold paramount the safety, health and welfare of the public". Welfare means well-being, or "the state of being happy, healthy, or prosperous." Because of the reports of adverse noise impacts on well-being near large wind turbines in Maine and elsewhere, well-being has become a focus of my work with towns and the public in discussions and evaluations of the effects of wind turbine noise on people.

The bottom line in environmental noise impacts is this. People respond to the change above the background sound level and to the noticeability or character of the intrusive noise. The World Health Organization stated in 1999, "In all cases noise should be reduced to the lowest level achievable in a particular situation. When there is a reasonable possibility that the public health will be endangered, even though scientific proof may be lacking, action should be taken to protect the public health, without awaiting the full scientific proof."

Community noise impact assessments and "criteria noise limits" may be developed based on measured noise emissions and reasonable presumptions in order to prevent widespread complaints and promote public well-being. Criteria noise limits are not necessarily the same as the regulatory limits, which may lag the current understanding of adverse effects on people. Criteria are determined in consultation and agreement with the utility or developer, and may address for example, avoiding adverse community reaction, and being a good neighbor either from consideration of nearby residents or to preserve and enhance goodwill.

I now present graphs that show probable community reaction, annoyance, and health effects for assessing the suitability of the existing Maine regulation and the proposed rulemaking. These graphs are based on the A-weighted sound level, the regulatory instrument of the existing Maine noise regulation. It is worth noting that wind turbines are predominately low-frequency noise sources, and increasingly so with larger size. The
A-weighted sound level filters out low-frequency and infrasonic energy and additional regulatory instruments such as C-weighting limits are needed to control excessive low-frequency noise.

In Summary

- Community noise impact assessment of community reaction, annoyance, and effects on health provide insight to the suitability of wind turbines sited in quiet rural areas of Maine.

- These assessments indicate that the existing Maine regulatory night noise limits can allow excessive levels of adverse community reaction, annoyance, and health effects for wind turbines sited in quiet rural areas of Maine. Lower-than-existing maximum sound levels are indicated to protect public well-being.

- The existing law's language on penalties for tonal and impulsive noise left open room for interpretation and could be simplified to be consistent with the law's original intent.

I welcome and urge your support of the Proposed Amendments to the DEP Noise Rule for wind turbine projects.

Thank you,

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