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A self-funded project of NHA.

February 27, 2009

Thomas S. Burack, Chairman
Site Evaluation Committee
N.H. Department of Environmental Services
29 Hazen Drive
Concord, NH 03301

Re: Application of Granite Reliable Power, LLC
Docket No. 2008-04

Dear Chairman Burack,

The Audubon Society of New Hampshire is a statewide non-profit organization dedicated to the conservation of wildlife and habitat throughout New Hampshire. We appreciate the opportunity to comment on the application of Granite Reliable Power, LLC for a certificate for site and facility for a wind energy installation in Coos County (Docket 2008-04). In the interests of full disclosure, our staff biologists conducted breeding bird surveys at the project site in contract with Noble Environmental Power during the summer of 2007. A clause in the contract specifically reserved our right to comment on the proposed project once the application was submitted.

New Hampshire Audubon supports appropriately sited wind turbines as one component of New Hampshire's renewable energy portfolio. We consider appropriate siting to include avoidance of substantial impacts to sensitive habitats and species of conservation concern. The turbines on Dixville Peak, northern Owlhead Mountain, and especially on Mt. Kelsey fail to meet these criteria.

High elevation spruce-fir forests occur from approximately 2500 ft to approximately 3500 ft elevation in New Hampshire's White Mountains and North Country. While the lower limit of these forests varies with aspect and soil conditions and exists as a transition zone rather than a sharp boundary, 2700 ft is commonly considered a reasonable elevation limit for management guidelines. (We note, however, that the U.S. Forest Service uses 2500 ft. for such purposes.) High elevation spruce-fir forests are adapted to survive harsh growing conditions. Compared to forests at lower elevations, these sites have shallower, more nutrient-poor soils; higher levels of precipitation; stronger winds; colder temperatures; more frequent exposure to ice damage; and shorter growing seasons. These conditions result in low tree species diversity, very slow growth rates, and high

mortality rates. The shallow soils, steep slopes, and high precipitation also create a high risk of erosion when vegetation is removed. It is these conditions that qualify high elevation spruce-fir forests as sensitive habitat, and that led the State of New Hampshire to engage industrial forest landowners of high-elevation spruce-fir forests in special management agreements to protect this unique resource by limiting harvest levels.

Maine's Land Use Regulation Commission (LURC) includes all land above 2700 ft. elevation within the Mountain Area Protection Subdistrict, where land uses are regulated to "preserve the natural equilibrium of vegetation, geology, slope, soil and climate in order to reduce danger to public health and safety posed by unstable mountain areas, to protect water quality, and to protect mountain areas for their scenic values and recreational opportunities." LURC has twice denied the request of Maine Mountain Power to rezone land on Black Nubble Mountain from Mountain Area Protection to Planned Development Subdistrict in order to construct a wind farm there, based, in part on the high ecological value of the high elevation lands and the proposed project's alteration of a "particularly sensitive area." These concerns and justifications apply equally to high elevation lands in New Hampshire.

While many of the road miles required for this project follow existing logging roads and skid trails, forestry roads exist primarily at elevations below 2700 feet, since harvesting is neither economical nor sustainable above this elevation. The impacts of road construction along these high ridgelines will extend far beyond the footprint of the openings. The extensive linear openings in the forest canopy will expose the adjacent forest to increased wind, resulting in significant and progressive blowdown. In addition, road construction at the higher elevations is likely to require significant terrain alteration, including use of explosives, in an area of high erosion risk and fragile soils. Standard road construction in such areas involves minimizing grades with numerous switchbacks. This approach would require more extensive clearing and terrain alteration, while straighter roads would greatly increase erosion risk both during and after construction. There is no minimal-damage strategy for constructing these roads.

In addition to being highly sensitive habitat, the high elevation forests on Dixville Peak and Mt. Kelsey support several species of conservation concern in the state and region, including American marten, Bicknell's Thrush, and possibly American Three-toed Woodpecker. Turbine placement above 2700 ft. will result in direct habitat loss and additional habitat degradation for these species.

The American Three-toed Woodpecker was common in the spruce-fir forests of New Hampshire's White Mountains and North Country prior to extensive harvesting in the late 1800s. This woodpecker and its Eurasian equivalent are now considered species of conservation concern in both the eastern and western hemispheres. American Three-toed Woodpeckers require large areas of natural spruce-fir forest, and occupy home ranges of

nearly 400 ha. Progressive harvesting of large diameter spruce and fir trees over the course of the twentieth century has left few areas of suitable habitat large enough to support breeding pairs. We acknowledge that our surveys did not definitively document the presence of this woodpecker in the project area. However, habitat conditions at the locations on Mt. Kelsey where potential encounters occurred, strongly suggest this species rather than the similar Black-backed Woodpecker, which favors younger, more open spruce-fir forest. American Three-toed Woodpeckers were documented during the 1980s in an extensive stand of spruce-fir forest in the Phillips Brook valley, which has since been harvested. Mt. Kelsey is the closest area of suitable habitat, lending further credence to the likelihood of the species' current presence there.

Studies in Quebec indicate that these woodpeckers favor interior forest, and respond to the presence of clearcuts up to 262 ft from the forest edge. By bisecting the extensive high elevation spruce-fir forest at the northern end of the project area, turbines above 2700 feet will reduce suitable habitat for this species well beyond the footprint of the proposed development.

High elevation spruce-fir forests of northeastern North America provide the only breeding habitat available to the Bicknell's Thrush, which has the smallest breeding range of any North American bird. For this reason, habitat loss has more significant implications for this bird than for more widely distributed species. While this thrush spends most of its time foraging below the forest canopy, the males perform evening courtship flights which would take them into the rotor-swept zone and increase the risk of mortality.

Impacts of turbine noise on wildlife are essentially unknown. Mechanical noise from turbines is minimal, dissipates rapidly with increasing distance from the source, and is unlikely to impact wildlife behavior. Aerodynamic noise, which varies with the ratio of blade tip speed to wind speed, can be transmitted over considerable distances; sound waves from multiple turbines can combine to amplify the sound in the area of intersection (so noise is greater at a distance from the turbines than along the turbine string itself); and sound waves can bounce off neighboring mountains in unpredictable ways, increasing noise levels in unpredictable locations. The potential for interference with predator-prey relationships and vocal communication of birds during courtship and breeding indicate a need for additional investigation at existing wind energy facilities before this project moves forward.

New York, Pennsylvania, and Iberdrola Renewables, among others, have prepared guidelines for pre- and post-construction bird and bat studies. We strongly urge that the SEC review these documents and consider adopting appropriate guidelines to standardize required wildlife studies for wind energy proposals in New Hampshire.

We also strongly recommend that the SEC adopt siting guidelines for New Hampshire wind energy facilities to guide developers to environmentally appropriate sites for development

of this energy source. The proposed guidelines prepared by the ad hoc Wind Energy Facility Siting Guidelines Working Group and delivered to the State of NH Energy Policy Commission (EPC) Wind Siting Subcommittee in May 2007 provide a good starting place for consideration.

In view of the above, we strongly urge the SEC to:

- Deny a license for proposed turbines located above 2700 ft. elevation.
- Adopt siting guidelines for wind energy facilities in New Hampshire.
- Develop standardized guidelines for pre-and post-construction wildlife studies at wind energy facilities in New Hampshire.

Thank you for the opportunity to comment.

Sincerely,



Michael J. Bartlett

President

Cc: Tom Chapman, USFWS
Kathleen Keene
Kenneth Kimball, AMC
Lisa Linowes
Richard Roach, USACE
Peter Roth, NH AGO
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