



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

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GOVERNOR

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MEMORANDUM

TO: Board of Environmental Protection
FROM: Mike Mullen, Acting Director, Bureau of Land & Water Quality
DATE: September 15, 2011
RE: Provisional Adoption: Amendments to Chapter 375, Section 10 Control of Noise

Statutory and Regulatory Reference: Chapter 375 Section 10 rules are adopted pursuant to general statutory authority at 38 M.R.S.A. Section 341-D(1). Pursuant to P.L. 2011 Chapter 359, these rules are major substantive.

Procedural History: The Board was properly petitioned in December 2010 to undertake rulemaking to amend Chapter 375 Section 10 Control of noise to include a new section of standards related specifically to wind power projects. On February 3, 2011 the Board posted to the rule to public hearing but did not set a date for the hearing. A public hearing was scheduled for May 19, 2011 but was postponed. A public hearing was held on July 7, 2011. Prior to the hearing and in evidence submitted at the hearing, the petitioners submitted comments in which they proposed changes to the posted rule. The comment period ended July 18, 2011. The Board deliberated on the rule and the comments received on two different occasions and directed staff to draft an amended rule based on its deliberations.

On August 8, 2011, staff presented a rule for the Board's consideration that differed from the petitioners' proposal in several aspects, most notable being:

1. the nighttime maximum noise level was proposed to be 42 dBA, not 35 dBA;
2. short duration repetitive sounds (SDRS) were defined as a peak to valley difference of 5 dBA, not 3dBA. In addition, penalties for compliance determinations would be added if more than 5 events of SDRS occurred in any 10-minute monitoring period, not two.
3. compliance determinations would be based on the average of 12, 10-minute measurement intervals, not 6; and
4. there would be no compliance measurement, or requirement to submit information related to C-weighted sounds (dBC) which are considered to be low frequency sounds.

Description: A detailed discussion and response to comments is contained in the Basis Statement attached. After consideration of the evidence and comments received, the proposed amendments to Chapter 375(10) are discussed below.

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(2) Sound Level Limits for Routine Operation of Wind Energy Developments: In its August 8 draft, the Department proposed a single limit for noise sound levels, based on past experience that all wind developments are essentially located in a "quiet location", which has been the assumption used by wind developers in all but the Mars Hill project. The petitioners proposed a nighttime limit of 35 dBA and 55 dBC or background plus 10 dBA and 20 dBC. That standard likely cannot be met given the analysis performed by the Board's consultant, EnRad Consulting. Further discussion regarding the proposed limit of 42 dBA is below, but the Department continues to believe a single numeric limit for noise levels is appropriate.

The petitioners argued that a low frequency limit should be established (dBC) but staff and the Board's consultant continue to believe that at the 42 dBA limit proposed, low frequency noise should not be an issue, especially since measurement of this level occurs at the property line or at least 500 feet from a residence.

(4) Short Duration Repetitive Sounds (SDRS): The Department proposes a slight reduction in the 'valley to peak to valley' measurement of SDRS from 6 dBA to 5 dBA. Also, it is proposed to apply a 5 dBA penalty to an entire 10-minute monitoring interval if the standard is exceeded 5 times within an interval. The petitioners' proposal of defining SDRS as a 3 dBA change in noise levels is too restrictive given natural variations of noise level in nature. While the industry argued the current definition of SDRS should not be changed, a 6 dBA change requirement is too high a threshold and would eliminate many of the SDRS events from consideration. Further, a change in sound of 6dBA would be clearly audible and likely prominent. A change in noise level of 5 dBA is considered a point at which most people experience a noticeable change in sound.

(5) Compliance with the Sound Level Limits: Arguments were presented that the World Health Organization's (WHO) recommended limit of 40 dBA should be applied to wind projects. The WHO limit is based on an annual nighttime average of sound levels at the building façade. Studies of actual sound level measurements from an existing wind project show this standard is being met at the current compliance points, which are not at the building's façade or in the bedroom. A reduction in the proposed noise level limit from 45 to 42 dBA is a perceptible decrease, which will likely result in alignment with the WHO nighttime noise guidelines.

(7) Submissions: The petitioners' proposed, that pre-development background noise levels be gathered and submitted and the August 8th draft included that requirement. Since the Department, for reasons stated above, is not recommending a background plus standard and agrees that such information is not necessary to determine compliance, the requirement has been dropped.

Built into the predictive modeling requirement is an uncertainty factor of 0-3 dBA to be applied at the discretion of the Department. While the petitioners argue it should be set at 3 dBA given the 45 to 42 dBA reduction in the noise level requirement, the industry argues there is no guidance as to when or how much of an uncertainty factor will be required. While still retaining the flexibility to apply an appropriate uncertainty factor, language has been added to provide guidance on when the factor would be applied.

In addition, it should be noted that predictive modeling also requires assumptions of worst scenarios such as assuming all turbines operate at maximum power output.

I(8) Measurement Procedures: The Department has reassessed its compliance measurement protocols in response to comments. It is proposed to still require audio recording during compliance measurements but in a different, more manageable format. In addition, it has been determined that continuous monitoring at all times during operation is cost prohibitive and not necessary given the compliance protocol. Continuous monitoring is not required of any other Site Law development.

Department Recommendation: While the Board's deliberations and assessment of the draft rule presented by staff on August 8, 2011, revealed that a substantial portion of the draft rule seemed reasonable after weighing all the information, testimony and comments received, it was a substantially different rule than that originally proposed and it was determined that an additional comment period was necessary. Comments received during the additional time period until August 29, 2011, essentially mirrored those received initially such as the noise limits are not restrictive enough or that there is no legitimate basis to set a lower noise limit than the existing rule. However, a number of people (over 50 during the comment period and a number thereafter), requested another public hearing to fully review and comment on the impact of staff's recommendation.

In staff's opinion, the Board has a few remaining issues needing further deliberation: the nighttime noise limit, the definition of SDRS, and the compliance determination methodology. The Department is also concerned that without further clarification on when and how much of an uncertainty factor should be applied in the predictive modeling, any decision made regarding this will be a potentially contentious and arguable point between the Department, applicant and any appellants.

It is the Department's recommendation that after further deliberation on the rule today, a final draft rule be posted to a last public hearing and comment period before seeking provisional adoption. If the Board opted to do this, it could authorize re-posting the rule today, a public hearing could be held October 20th and brought back to the board in late November or early December for provisional adoption. This still allows the rule to be submitted to the legislature for review before the January 2012 deadline.

Estimated Time: 2 hours