Mars Hill Wind Turbine Project Health Effects – Preliminary Findings
Symptoms Survey Results

Depression

7 new subjective symptom complexes **47%**
1 worsened prior Dx

4 New Rx offered
1 declined (incompatible with job license)
3 New Rx: Cymbalta, Lexapro, Mirtazepine **20%**

1 prior Dx, Rx increased/changed: Zoloft, Trazodone

Tearful at points during interview: 4 27%
2 women, 2 men

Mars Hill Wind Turbine Project Health Effects – Preliminary Findings
Symptoms Survey Results

New Prescriptions

Total Number of New and Increased Prescriptions: 15

New Rx	12
Increased	3

Cymbalta	*Lexapro*
Mirtazepine	*Zoloft*
Trazodone	*Meloxicam*
Hydrocodone	*Tylenol III*
Benazepril	*Topamax*
Anxiolytics (2)	
BP meds (3)	

10 Rx offered and declined

Mars Hill Wind Turbine Project Health Effects – Preliminary Findings
Symptoms Survey Results

Has your quality of life been affected? 15 100%

"Loss of joy in living . . .put a lot of life's plans on hold"
"No desire to go outside"
"Feel trapped"
"Dreams have been dashed"
"Was our dream home . . . it's all been stolen from us"
"We have no peace and quiet"
"My husband's (who has advanced MS) only pleasure in life was to see the wild animals. They are gone."
"No sleep"
"Sinking feeling every night when I (come home) and see them."
"I used to be able to hear it snow, before. Now, I do not look forward to going home."

Mars Hill Wind Turbine Project Health Effects – Preliminary Findings
Symptoms Survey Results

Have you considered moving away?

Yes	**15**	**100%**

Why have you not moved away?

Can't afford to:	**11**	**73%**

Recent professional appraisal with loss of home value perceived as enough to make it impossible to move away: 8/9 homes 90%

Mars Hill Wind Turbine Project Health Effects – Preliminary Findings
Symptoms Survey Results

Current survey weaknesses:

- Small sample
- Case Series structure
- Retrospective
- No study control
- No analysis for statistical significance as yet

- **Preliminary findings nonetheless alarming**
- **Do we have a right to subject the non coastal population of Maine to a 30 year prospective study?**

Mars Hill ME DEP Nightime Noise Variance 45=>50 dbA

"There are 4 protected locations were the noise level would be above 45 dBA, but less than 50 dBA, **which is approximately equivalent to the noise that songbirds make . . .** the Department finds that the applicants' project will not have an unreasonable adverse impact . . . and therefore grants a variance from the noise standards for the windpower farm."

DONE AND DATED AT AUGUSTA, MAINE, THIS 1ST DAY OF JUNE, 2004.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

By: Dawn R Gallagher
DAWN R. GALLAGHER, COMMISSIONER

PLEASE NOTE THE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application January 12, 2004
Date of application acceptance January 22, 2004

Date filed with Board of Environmental Protection
RC/L21635AN/BN

FILED
JUN - 2 2004
BOARD OF ENVIRONMENTAL PROT.
STATE OF MAINE

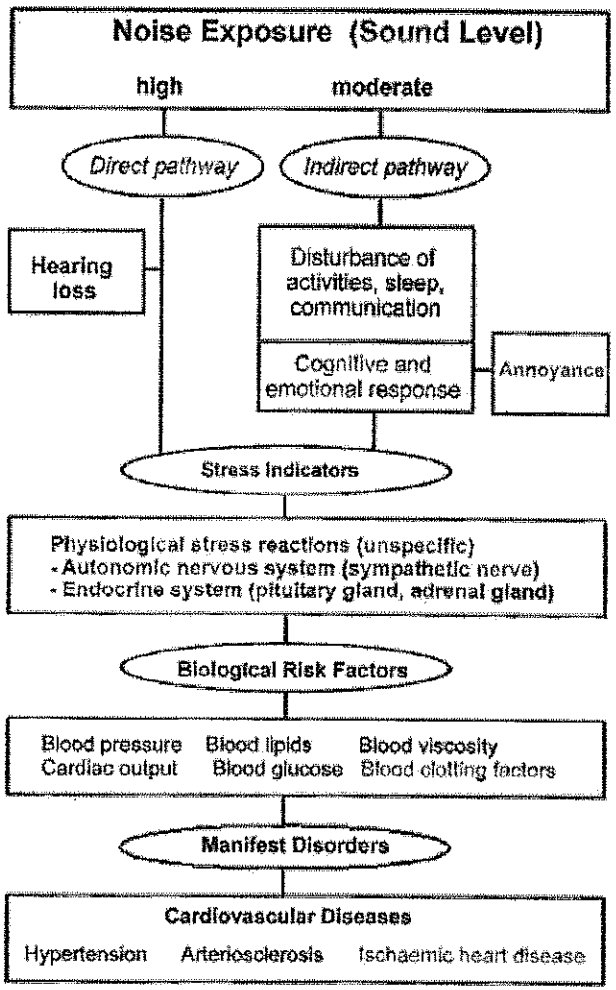
Page 1 of 6

Mars Hill ME DEP Nightime Noise Variance 45=>50 dbA

In fact, the turbines at Mars Hill produce night time readings 52.5 dBA, which Andrew Fisk of MDEP has characterized as 'substantially in compliance', and has issued a letter of compliance to First Wind/UPC.

He acknowledged, during a recent meeting in Fort Kent, that this reflected an average measurement which included downtime, though the statute is meant to regulate sound sources during operation.

Is this the Mars Hill Experience?



Preliminary findings are alarming

More detailed studies are required:

- Diurnal cortisol studies
- Larger population sample
- Detailed cardiovascular studies
- Detailed psychiatric assessments

*****16 Children*** MUST be studied.**

Health Aspects of Extra-Aural Noise Research, W. Babisch, German Federal Environmental Agency
Noise and Health 2004, 6:22, 69-81

Michael A. Nissenbaum, MD, March 2009

DO NO HARM

In light of these growing, serious medical concerns, we propose a moratorium on the building of any such "wind farms" until more research is done on the health impact that such facilities will have on the communities surrounding such technology. These communities and the Maine DEP and Health Services must be allowed time to study and learn from the European and Canadian experiences, as well as from the many affected families in Mars Hill, Maine, and put into place appropriate regulations and ordinances, prior to expanding the wind industry in the State of Maine.

Excerpt, Statement of the Medical Staff of NMMC, March 2009

Michael A. Nissenbaum, MD, March 2009

DO NO HARM

The State of Maine has a vast, unpopulated hinterland. There is little need to site industrial wind developments in proximity to residential communities if there is a risk of negative health effects. Quality of life, quality of place, and a healthful environment should be the right of all residents of Maine, including those of the rural north.

Excerpt, Statement of the Medical Staff of NMMC, March 2009

Preliminary Findings are Alarming
In the Meantime, DO NO HARM

Options:

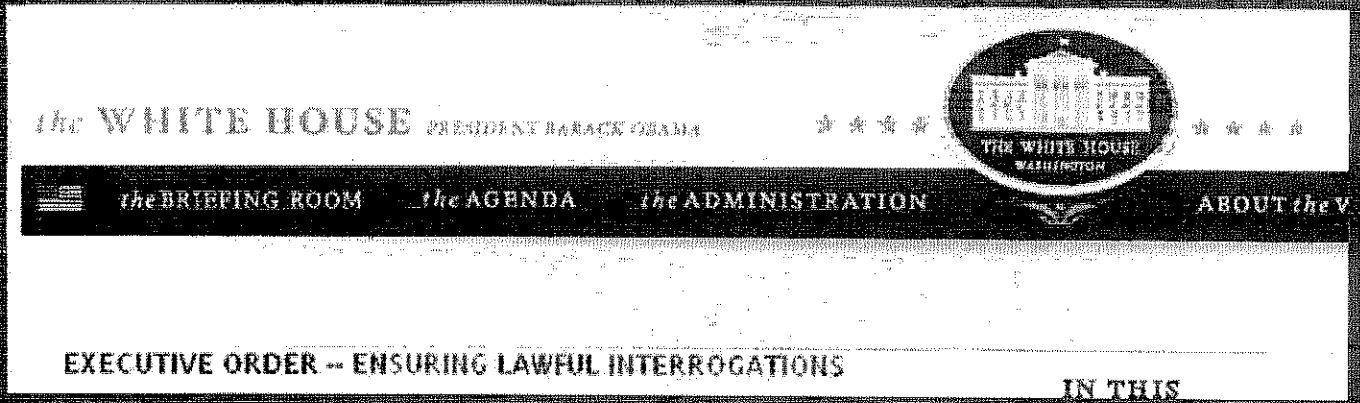
- Request moratorium until more extensive medical studies are done and current state of knowledge is fully understood by authorities and regulations reflecting risks and hazards put into place

- Request siting setbacks reflecting current state of knowledge and non US jurisdictions' best practices (France, Germany, Australia) – including use of db(C) calibration

- Request a Wind Developer "Code of Conduct" be established and enforced by the State's Attorney General's Office (similar to NY State)

Further Studies Must be Done NOW

How is any medical scientist going to conduct an epidemiological study of wind turbine health effects when 'Good Neighbor' and lease-holder gag clauses exist in land lease contracts?



Effective immediately, an individual in the custody or under the effective control of an officer, employee, or other agent of the United States Government, or detained within a facility owned, operated, or controlled by a department or agency of the United States, in any armed conflict, **shall not be subjected to any interrogation technique or approach, or any treatment related to interrogation, that is not authorized by and listed in Army Field Manual 2 22.3**

BARACK OBAMA
THE WHITE HOUSE,
January 22, 2009

Sleep Deprivation is not permitted in Army Field Manual 2 22.3

WHO 2000 *Guidelines: Community Noise*

- When low frequency components are present, noise measures based on dBA measurements are inappropriate - dBC is a better measure when health effects are to be minimized

- It should be noted that a large proportion of low frequency components may increase considerably the adverse effects on health and the evidence on low frequency noise is sufficiently strong to warrant immediate concern

Berglund et al., 2000

1978

Exhibit C

Industrial Wind Turbines and Health Effects in Mars Hill, Maine
A Retrospective Controlled Study – Preliminary Findings as of November, 2010

Background:

The issue of deleterious health effects related to poorly placed (too close) industrial wind farms is of increasing importance. Anecdotal reports have proliferated over the last several years, but there has not as yet been a controlled study investigating potential negative health effects.

Methods:

33 adults live within 1100 meters of a 28 turbine (1.5mW each) wind farm. 22 individuals consented to and were given medical interview evaluations, along with a control group of 28 individuals of near identical demographic makeup, living 5000-6000 meters away. Participants were questioned as regards new onset or worsened somatic and psychiatric symptomatology, as well as new prescription medication use since the turbine installation went on line (18 months prior to the interviews). 16 children living with these adults were not evaluated.

Results:

82% of study subjects reported new onset or worsened sleep disturbances, versus 3% in the (control) group. 36% reported new onset headaches (3% in the control group), 55% reported 'stress' (0%), 82% anger (0%), 36% worsened depression (0%). 95% of the study subjects perceived reduced quality of life, versus 0% in the control group. Underlining these findings, there were 25 new prescription medications offered to the study subjects, of which 15 were accepted, compared to 4 new or increased prescriptions in the control group.

Conclusions:

Adults living within 1100 meters of industrial wind turbines suffer high incidences of chronic sleep disturbances and headaches, among other somatic complaints, and high incidences of dysphoric psychiatric symptomatology, compared to a control group living 5000-6000 meters away. They additionally require increased prescription medications to deal with these symptoms compared to the control group. Most symptomatology appears attributable to the quality and persistence of the noise generated by the turbine installations. Additional investigation of the children living in close proximity to industrial wind turbines is urgently needed. Improvements in pre-construction sound modeling and siting ordinances are required to prevent the negative health effects observed in our study population.

The findings can also be seen in the synopsis attached hereto as Exhibit A.

28 Wind Turbine Installation at Mars Hill, Maine
Health Survey with Control Group

Prepublication preliminary analysis summarized as of Nov. 22, 2009 for
Arline King, MD, Chief Medical Officer of Health for Ontario

(Embargoed for public distribution until publication)

1980

	Subjects	Controls
	Total = 22 F=10, M=12,	Total = 28 F=13, M=15
Age Range	Female 18-73, Male 43-79	Female 19-81, Male 35-81
Age Mean	Female 52, Male 56	Female 53, Male 52
Mean Distance	800 m	6000 m
Worsened or New Onset Sleep Disturbance (since turbines on line)	18/22 = 81% 5-7/wk number = 9 2-4/wk number = 9 no change number = 4	1/28 = 3% no change number = 27
Worsened or New Onset Headache	8/22 = 36%	1/28 = 3%
New Psychiatric Symptomatology	Stress: 12/22 = 55% Anger: 18/22 = 82% Anxiety: 8/22 = 36% Hopelessness: 12/22 = 55% New or Worsened Depression: 10/22 = 45%	0/28 = 0%
New or Increased Rx:	**15 new or increased prescriptions (0.7 Rx/subject participant):** 12 new, 3 increased ***Details:*** Cymbalta Lexapro Mirtazepine Zoloft Trazodone Meloxicam Hydrocodone Tylenol III Benazepril Topamax Anxiolytics (non specified) (2 Antihypertensives (3) **10 other Rx offered and declined**	**4 new or increased (0.1 Rx/control participant):** ***Details:*** 3 antihypertensive Rx 1 antiarthritic Rx
Reduced Quality of Life Reported	**21/22 = 95%**	**0/28 = 0%**
Considered moving away	**20/22 = 91%**	**0/28 = 0%**

EXHIBIT
27

1981

E-Coustic Solutions

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Richard R. James
Principal
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Fax: (866) 461-4103

January 7, 2010

Rufus E. Brown, Esq.
Brown & Burke
85 Exchange Street, Suite 201
P.O. Box 7530
Portland, ME 04101

RE: Comments on Oakfield Wind Project

The Stetson Wind Project Operations Compliance Sound Level Study (the "Stetson Report") is flawed and provides no support for the claim that it validates the noise modeling of Resource Systems Engineering ("RSE"), the entity that prepared the Sound Level Assessment for the Oakfield Wind Project.

Among the reasons that it is flawed for purposes of validating RSE's sound modeling are the following:

(1) It is not a report by an independent expert; the modeler's are checking their own model;

(2) There was no testing protocol established in advance of the field work to guide the field work or to measure the legitimacy of the findings of the field work;

(3) The field testing took place at different sites that do not correspond to the pre-construction modeling sites;

(4) Only one field testing site was downwind of the turbines, even though downwind represents the condition most likely to result in the highest sound levels;

(5) In contrast to the Mars Hill four quarter post- construction noise study, the testing for Stetson took place over a period of less than 24 hours;

(6) The Stetson Report did not field test under the same conditions assumed in the pre-construction modeling;

(7) There are numerous anomalies in the field testing, casting serious doubt about the Report, including results showing an increase in sound levels at a time when wind turbines were declining in power output and results showing variations in sound levels where constant sound power was presumed;

(8) The modeling purported to be validated did not use line source sound propagation although the turbines are arranged in a line along the ridge top; and

(9) There was no test data reported or filed addressing concerns about low frequency sound.

Thank you for the opportunity to comment.

Sincerely,
For: E-Coustic Solutions

Richard R. James, INCE

1982

Rufus Brown

From: Rick James (E-CS) [rickjames@e-coustic.com]
Sent: Thursday, January 07, 2010 10:38 PM
To: 'Rufus Brown'
Subject: RE: Oakfield
Attachments: 10-01-07 Comments to R. Brown re model validation flaws.pdf

Rufus,
Let me know if this is okay. I tweaked some of the wording to remove some ambiguity.
I will be focusing on writing some background notes for proposed legislation in Vermont on Friday but I can make time available if you need it.
Rick

E-coustic Solutions,
www.e-coustic.com

The contents of this e-mail are intended for the named addressee only. It contains information that may be confidential. Unless you are the named addressee or an authorized designee, you may not copy or use it, or disclose it to anyone else. If you received it in error please notify us immediately and then destroy it.

From: Rufus Brown [mailto:rbrown@brownburkelaw.com]
Sent: Thursday, January 07, 2010 9:23 AM
To: 'Rick James (E-CS)'
Subject: Oakfield

Rick:

Can you send me by e-mail a letter with the following text:

The Stetson Wind Project Operations Compliance Sound Level Study (the "Stetson Report") is flawed and provides no support for the claim that it validates the noise modeling of Resource Systems Engineering ("RSE"), the entity that prepared the Sound Level Assessment for the Oakfield Wind Project. Among the reasons that it is flawed as a validation of RSE modeling are the following: (1) it is not a report by an independent expert; (2) there was no testing protocol established in advance of the field work to guide the field work or to measure the legitimacy of the findings of the field work; (3) the field testing took place at different sites that do not correspond to the pre-construction modeling sites; (4) only one field testing site was downwind of the turbines, even though downwind represents the condition most likely to result in the highest sound levels; (5) in contrast to the Mars Hill four quarter post- construction noise study, the testing for Stetson took place over a period of less than 24 hours; (6) the Stetson Report did not field test under the same conditions assumed in the pre-construction modeling; (7) there are numerous anomalies in the field testing, casting serious doubt about the Report, including results showing an increase in sound levels at a time when wind turbines were declining in power output and results showing variations in sound levels where constant sound power was presumed; (8) the modeling purported to be validated did not use line source sound propagation although the turbines are arranged in a line along the ridge top; and (9) there was no test data reported or filed addressing concerns about low frequency sound.

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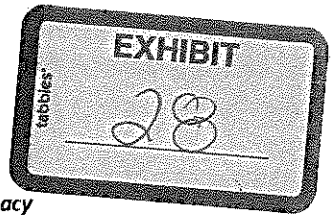
tele: 207-775-0265
fax: 207-775-0266



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Jan. 11, 2010

Rufus E. Brown, Esq.
85 Exchange Street, Suite 201
P.O. Box 7530
Portland, ME 04101

Subject: E-Coustic Solutions' Response to EnRad's Critique of Powers Trust Objections, Dec. 31, 2009, by Mr. Warren Brown

Dear Mr. Brown:

I have completed my review of the Dec. 31, 2009 response of MDEP's reviewer, Mr. Warren Brown of EnRad Consulting on prior testimony made on behalf of Powers Trust. This review is also on behalf of Powers Trust.

I have prepared my response in table form to make it easier for the reader to follow the discussion. That table is attached. The concerns I enumerate apply to Mr. Brown's comments in the same order as they were presented in his Dec. 31, 2009 document.

I do not find Mr. Brown's objections to be compelling, nor do they change any of my prior testimony. Nothing in my response herein, or in the absence of a response, should be construed as being contrary to my prior testimony. Because my prior testimony was considerably more detailed I would like to re-affirm they are incorporated by reference into my comments at this time.

Sincerely,
E-Coustic Solutions

Richard R. James, INCE

Attachment: Table

From: EnRad's Response to Powers Trust Objection, by Warren Brown	Response by Richard R. James, INCE on behalf of Powers Trust to Warren Brown's Critique
Exhibit 1 -- Visual Impact-*no EnRad comment*	
Exhibit 2 -- Visual Impact-*no EnRad comment*	
	This reviewer stands by the earlier testimony supplied by Mr. Rufus Brown and by the reviewer, but offers the following comments in addition to the earlier testimony.
Exhibit 3 (objection) - Precision wind turbine sound prediction modeling for all atmospheric, topographical, array geometries and surface conditions continues to develop1 2 3. This knowledge evolution is evidenced by continued changes in turbine sound power output specifications [IEC 61400-11 (2010)]4, numerous proposed prediction model algorithms and a wide variety of recommended approaches. To date, this reviewer found insufficient evidence to suggest a more widely used algorithm, then ISO 9613-2 to model wind turbine projects.	It is the correct use of a model rather than its popularity that determines the usefulness of its results. It is likely that a carefully executed Excel spreadsheet that reflects good understanding of a noise source emissions and contains appropriate safety factors could do as well or better than the most "widely used algorithm" as has been evidenced in submissions to MDEP to present date. The track record of the computer models used in siting currently operating in Maine has been that they have not prevented complaints. If the models are not useful in addressing the potential for new projects to result in complaints and other adverse effects on nearby families then they should not be relied on for future projects such as Oakfield.
Resource Systems Engineering (RSE) in conjunction with its client proposed a prediction model based on manufacturer specified maximum sound output (IEC 61400-11) for all turbines operating simultaneously upwind of each sensitive receiver locations with an additional +5 dBA buffer for manufacturer specification and sound propagation uncertainties. Given an apparent reasonable prediction methodology, this reviewer, the MDEP and developers collaborated to produce a rigorous compliance measurement protocol to confirm wind turbine operating sound under stable atmospheric conditions, elevated topography, complex geometries and various surface conditions.	An independent acoustical consultant should be involved in the process such as an INCE member who is not retained by wind industry. Clearly a "+5 dBA buffer" was not enough for Mars Hill; in part because SDRS was never adequately modeled pre-construction nor adequately quantified post-construction (no penalty applied), nor apparently were existing facility data used to determine good safety factors for higher noise levels due to wind shear and subsequent wind angle across the blades (see Van Den Berg 2006 etc.). It appears a damning statement for MDEP to say that it collaborated in the process.
Codification of collaborative compliance measurement protocol efforts produced the following requirements:	If Mr. W. Brown's purpose was to respond to Powers Trust's Objections, the section of his response detailing compliance measurement requirements is not appropriate. However, this discussion of protocol needs to be addressed due to serious flaws in the methodology.

From: EnRad's Response to Powers Trust Objection, by Warren Brown	Response by Richard R. James, INCE on behalf of Powers Trust to Warren Brown's Critique
Compliance sound assessment of wind turbines require carefully specified measurement conditions, monitoring specifications and reporting requirements. Compliance should be demonstrated, based on following outlined conditions for 12, 10-minute measurement intervals per monitoring location meeting 06-096 CMR 375.10 requirements.	Compliance is demonstrated when complaints cease. See Chapter 375.10 Preamble.
Extraneous sounds could potentially or do complicate routine operation compliance assessment. If the applicant must adjust for such sounds, background ambient monitoring will be necessary. If background ambient monitoring is proposed, locations and times should be determined with concurrence from the MDEP.	MDEP concurrence on monitoring locations- why? An experienced independent consultant would know where and when to measure. Problems to date have been due to lack of independence of the acoustical consultant due to ongoing relationships with the wind utility developers and operators.
a. Compliance will be demonstrated when the required operating/test conditions have been met for twelve 10-minute measurement intervals at each monitoring location.	This is insufficient and inappropriate language, actually it is backwards. Complaints are evidence of excessive noise. Compliance is demonstrated when complaints cease. See Chapter 375.10 Preamble. Should complaints persist with noise levels above WHO limits, MDEP now has WHO international peer-reviewed guidelines based on sufficient evidence to act (WHO 2007 and 2009 night noise guidelines) on which to base administrative action to fulfill requirements set forth in The Preamble for Chapter 375.10. With respect to eliminating complaints: Testing if conducted by developer should determine the facility noise levels, presence of and application of penalties in the event of tonal noise and short term repetitive sound components, for those time periods and operating conditions during complaints. Once noise control options are exhausted by developer and complaints remain, administrative (shutdown) controls should be applied by developer or by MDEP order if necessary. In the event developer fails to act promptly to address complaints, MDEP should exercise administrative control order as required to minimize or eliminate noise resulting in complaints.

1686

From: EnRad's Response to Powers Trust Objection, by Warren Brown	Response by Richard R. James, INCE on behalf of Powers Trust to Warren Brown's Critique
b. Measurements will be obtained during weather conditions when wind turbine sound is most clearly noticeable, i.e. when the measurement location is downwind of the development and maximum surface wind speeds ≤6 mph with concurrent turbine hub-elevation wind speeds sufficient to generate the maximum continuous rated sound power from the five nearest wind turbines to the measurement location. [Note: These conditions occur during inversion periods usually between 11pm-5am.] Measurement intervals affected by increased biological activities, leaf rustling, traffic, high water flow or other extraneous ambient noise sources that affect the ability to demonstrate compliance will be excluded from reported data. The intent is to obtain 10-minute measurement intervals that entirely meet the specified criteria. A downwind location is defined as within 45° of the direction between a specific measurement location and the acoustic center of the five nearest wind turbines.	To be a good neighbor: Compliance is demonstrated when complaints cease. In keeping with The Preamble: Noise measurements are made to determine noise causing complaints and mitigate excessive environmental noise. If a 10-minute measurement provides the information needed to determine mitigation methods, then it should be obtained.
c. Sensitive receiver sound monitoring locations should be positioned to most closely reflect the representative protected locations for purposes of demonstrating compliance with applicable sound level limits, subject to permission from the respective property owner(s). Selection of monitoring locations should require concurrence from MDEP.	This reviewer is not clear what benefit MDEP concurrence provides. Any experienced <u>independent</u> consultant can select appropriate monitoring locations. With respect to expertise: MDEP has not exercised its basic authority to regulate (shut down through order) wind turbine facility operations that create excessive noise. (Complaints and law suits are evidence that noise is excessive). Since MDEP expertise on the use of regulation appears questionable, it is also questionable what expertise if any MDEP could provide on monitoring location selection.
d. Meteorological measurements of wind speed and direction should be collected using anemometers at a 10-meter height above ground at the center of large unobstructed areas and generally correlated with sound level measurement locations. Results should be reported, based on 1-second integration intervals, and be reported synchronously with hub level and sound level measurements at 10 minute intervals. The wind speed average and maximum should be	See comment for item c. As well, there appears to be substantial wind shear on Maine land that result in much higher than expected wind shear (speeds) at top-of-blade height than those determined by a 10-meter data set and simplistic assumptions about wind profile coefficients. Much taller (80m minimum), multiple

From: EnRad's Response to Powers Trust Objection, by Warren Brown	Response by Richard R. James, INCE on behalf of Powers Trust to Warren Brown's Critique
reported from surface stations. MDEP concurrence on meteorological site selection is required.	sampling point wind monitoring is required to determine wind shear for large industrial wind turbines and should be required of the developer to support their economic modeling (a poor assumption for wind shear up front could mean higher noise levels and less than "expected" power output with low revenues once in operation, affecting performance bonds and developer finances).
e. Sound level parameters reported for each 10-minute measurement period, should include A-weighted equivalent sound level, 10/90% exceedance levels and ten 1-minute 1/3 octave band linear equivalent sound levels (dB). Short duration repetitive events should be characterized by event duration and amplitude. Event frequency is defined as the average event frequency +/- 1SD and amplitude is defined as the peak event amplitude minus the average minima sound levels immediately before and after the event, as measured at an interval of 50 ms or less, A-weighted and fast time response, i.e. 125 ms. For each 10-minute measurement period short duration repetitive sound events should be reported by percentage of 50 ms or less intervals for each observed amplitude integer above 4 dBA. Reported measurement results should be confirmed to be free of extraneous noise in the respective measurement intervals to the extent possible and in accordance with (b.).	Ten one-minute 1/3 octave Leq measurements are not specified in Chapter 375.10 and are not necessarily relevant to analysis of operating noise levels under Chapter 375.10. Short duration repetitive events are already defined in Chapter 375.10 and need no redefinition as attempted here. The existing Chapter 375.10 language for measuring short term repetitive sound is adequate; the language in this paragraph is unnecessary and misleading.
f. Compliance locations should be determined in consultation with the Department.	Not clear what benefit MDEP concurrence provides unless MDEP is managing the complaint system and the investigator needs access to data through MDEP. Any experienced independent consultant can select appropriate monitoring locations, especially if done in response to complaints. One measures, as a minimum, at locations where the complaints occurred under the conditions that duplicate those that were present at the time of the complaint.
Compliance data collected in accordance with the assessment methods outlined above for representative locations selected in accordance with this protocol should be submitted to the Department for review and approval prior to the end of the first year	Compliance is shown when complaints cease. See Chapter 375.10 Preamble. Compliance reports should focus on the complaint system, complaint contents, actions

From: EnRad's Response to Powers Trust Objection, by Warren Brown	Response by Richard R. James, INCE on behalf of Powers Trust to Warren Brown's Critique
of facility operation. Compliance data for each location should be gathered and submitted to the Department at the earliest possible opportunity after the commencement of operation, with consideration for the required weather, operations, and seasonal constraints.	taken including any measurements, and results obtained from noise control actions.
The wind project prediction model utilized for the Oakfield wind power project was based on CADNA/A software using ISO 9613-2 algorithms which included the following prediction assumptions: individual wind turbine spherical wave fronts, mixed ground cover attenuation (general) and reflective water surfaces, atmospheric attenuation based on 10°C, 70% RH, no attenuation due to foliage or barriers, all wind turbines operating at maximum sound power output all wind turbines operating under moderate downwind (simultaneous conditions for each sensitive receiver) and the incorporation of an uncertainty factor of + 5 dBA for maximum equipment specification potential inaccuracy under stable atmospheric conditions and measurement methodology uncertainties.	The model assumptions are insufficient to represent real-world conditions. It is not at all clear that spherical (point) source modeling is adequate (despite assertions by MDEP). Given that the primary sound energy is produced by blades with rotor diameters almost as large as a football field it is not likely that even a single turbine can be called a point source, much less a row of such turbines along a ridge. This reviewer would assume line source conditions for a line of wind turbines (just as one assumes line source conditions for a line of vehicles on a highway) unless it was demonstrated through convincing empirical evidence that point source propagation occurs. As a conservative approach, this reviewer would apply line source propagation (3dB/dd) for a distance equivalent to the longest dimension of the turbine facility in the direction of an observer location; then standard propagation (6dB/dd) would be applied for any remaining distance (if any) to the observer location. Safety factors: To be conservative, in keeping with standard power industry practice to be "good neighbors", adequate safety factors should be incorporated in prediction models. What is adequate for wind turbines? This reviewer feels (contrary to MDEP) that a 5 dB safety factor is needed for amplitude modulation which is a known noise component. As demonstrated in this reviewer's testimony of Oct. 15, 2009 on page 8, Figure 6, short duration fluctuations of 10 dBA or more are associated with wind turbine sound emissions. An additional safety factor of 3 to 5 dB is needed for noise

From: EnRad's Response to Powers Trust Objection, by Warren Brown	Response by Richard R. James, INCE on behalf of Powers Trust to Warren Brown's Critique
	increases due to wind shear and icing. An additional safety factor of at least 2 dB is needed for measurement uncertainties. From this list it's apparent that the +5 dBA "uncertainty factor" used for Oakland is not sufficient to predict the worst case noise levels. Somewhere on the order of 12 dB is appropriate as a safety factor sum for worst case conditions in order to model a "good neighbor" distance setback. The difficulty is of course that for the current wind turbine designs being marketed in Maine, there is no noise control for the loudest noise components, the blades. An appropriate distance setback is the only noise control available for new projects. That is in fact the good news for wind turbine siting. An adequate distance setback can be determined with the WHO 2007/2009 night noise guidelines and appropriate line source modeling and safety factors listed above, providing an adequate conservative model basis for a distance setback to be a "good neighbor". To prevent all potential health effects, model to 30 dBA night using both line and point source models with appropriate safety factors to determine where this boundary will occur.
The "adjusted" predictive model was found to accurately predict (often conservatively), nine sites (8-retrospective) during stable atmospheric conditions for elevated turbines (hills/mountains), of linear array configurations, during mixed surface conditions (trees-conifer/foliated & defoliated deciduous, cut and uncut fields, open gravel, open rock faces and powder through crusted snow).	This reviewer hasn't seen this. What has been seen is that actual plant data exceeded predicted, for MDEP administered projects and that the projects result in complaints and adverse health effects on family adjacent the wind utility footprint.

Warren Brown for MDEP	Richard R. James for Powers Trust
Exhibit 4 -- March 5, 2009 conference call	
Exhibit 5 -- ISO 9613-2 based software for sounds received beyond 1 km	
ISO-9613-25 states "an estimate of accuracy is not provided beyond 1000 m." Basic physical principles, indicate attenuation due to divergence (including refractive conditions) and air absorption will continue to lessen sound pressure levels (LAeq) beyond 1000 m (3300 feet).	Mr. W. Brown appears to believe that the limitations of the ISO standard's applicability established by the experts on the working group that drafted it and the peer-reviewers who oversee the work of the drafting committee can be ignored based on his personal desire to make this modeling method 'work' for the MDEP's permitting needs. The constant effort by Mr. Brown to make the square peg fit into the round hole is of concern to this reviewer. Is Mr. Brown's attempt to support the MDEP's permitting decision and its decision making process now clouding his professional judgment? What Mr. Brown describes "may" occur for one wind turbine in a simple topography, but is not likely for several in a complex topography. The physics of multiple turbine noise propagation in the atmosphere especially for multiple turbines on a ridge is unknown. There is a possibility of cylindrical propagation for very low frequencies, trending up to the standard 6dB/dd as frequency increases, as well as time synchronous addition of Amplitude Modulation (AM) wave fronts which could result in noise levels well above predicted short of and beyond 1000 meters, as well as line source propagation for a line of turbines (which should be assumed unless there is clear repeated empirical evidence of point source propagation near multiple turbine facilities). With the large physical dimensions of the blades and the swept circle of disturbed air downwind of the blades causing an "area" of sound emission, the focus on 'point' sources appears to be one of convenience, not science. More research is needed and MDEP should require investigation or state its disinterest in propagation beyond 1000 meters, rather than assume anything.

Warren Brown for MDEP	Richard R. James for Powers Trust
Exhibit 6 -- ISO 9613-2 based software for sounds over relatively porous terrain, high wind conditions and propagation modeling (spherical versus cylindrical)	
Ground absorption over relatively porous terrain and stable atmospheric maximum turbine sound power output are adequately compensated for in nine compliance test sites. (see Exhibit 3 objection *RESPONSE*). Point source (spherical wave fronts) models appropriately represent sound pressure levels (LAeq), tonal (MDEP) and short duration repetitive sound (SDRS) for the proposed wind turbine project within the region of MDEP compliance. I find no contradiction to this point in the following reference H.H.Hubbard *and K.P. Shepherd: Aeroacoustics of Large Wind Turbines* J. Acoust. Soc. Am., Volume 89, No 6, June 1991.	This response is baffling. Point source models have nothing to do with and do not by themselves "appropriately represent" the presence or absence of tonal or short term repetitive sound. In a model, tonal sound is accounted if the modeler includes it, normally based on an understanding and addition of a tonal factor based on real world measurements. Similarly for short term repetitive sound: a modeler includes a SDRS safety factor based on real world measurements and experience. After that, a propagation factor (such as 3dB/dd or 6dB/dd or other) is used in the model to estimate sound level versus distance. Point or line source modeling simply carries out the original maximum spectrum to a location using a drop with distance calculation. Point source models don't represent tonal or SDRS potentials by themselves; the modeler must address the additional impact of tonal and SDRS potentials in the source spectrum independent of the model.
Exhibit 7 -- ISO 9613-2 based software for sounds under stable atmospheric conditions	
This reviewer evaluated compliance data from nine measurement locations at two separate wind turbine developments similar to the proposed Oakfield project under stable atmospheric condition under maximum sound power output during light surface winds. Minimum turbine hub elevations above receiver locations equaled or exceeded 250 ft. Sound pressure levels (LAeq) and SDRS (<6 dBA) were within (RSE) predicted estimates (inclusive of + 5 dBA uncertainty factor).	This paragraph also makes no sense. In compliance data, SDRS should be evaluated and presented in writing with time history analysis of A-weighted sound level with the meter set to "Fast" response (e.g. the "strip chart" graph). The graphs should be done for those times and locations representing complaints or worst case conditions or most likely audibility. The presence or lack of SDRS is clearly ascertained from strip chart analysis. At that time a 5 dB penalty (safety factor) is either applied or not based on whether SDRS is present or not.

Warren Brown for MDEP	Richard R. James for Powers Trust
Exhibit 8 -- ISO 9613-2 accuracy/reflected sounds/elevated sound sources >30 m, application of a short duration repetitive sound penalty	See earlier comments
See Exhibit 7 objection *RESPONSE*	See earlier comments
Exhibit 9 -- propagation modeling (spherical versus cylindrical)	See earlier comments
See Exhibit 6 objection *RESPONSE*	See earlier comments
Exhibit 10 -- propagation modeling (spherical versus cylindrical).	See earlier comments
See Exhibit 6 objection *RESPONSE*	See earlier comments
Exhibit 11 -- propagation modeling (spherical versus cylindrical)	See earlier comments
See Exhibit 6 objection *RESPONSE*	See earlier comments
Exhibit 12 -- Maine State Planning Officer Technical Assistance Bulletin #4 (health effects)	See earlier comments
Exhibit 13 -- "How to" Guide to Siting Wind Turbines to Prevent Health Risks from Sound	This reviewer is pleased that Mr. Brown found no criticism of the paper jointly authored by George Kamperman, Bd. Crt. INCE, P.E. and Mr. Richard James., INCE
Exhibit 14 -- Mars Hill project in soon-to-be published New England Journal of Medicine-Michael A. Nissenbaum, M.D.	This reviewer is pleased that Mr. Brown found no criticism of the study by Dr. Nissenbaum
Exhibit 15 --' Wind Turbine Syndrome' by Nina Pierpont, M.D.	This reviewer is pleased that Mr. Brown found no criticism of the paper by Dr. Pierpont
Exhibit 16 -- Night Noise Guidelines in 2007 (WHO)	This reviewer is pleased that Mr. Brown found no criticism of the guidelines for night noise by WHO
Exhibit 17 -- Night Noise Guidelines in 1999 (WHO)	This reviewer is pleased that Mr. Brown found no criticism of the guidelines for night noise by WHO
Exhibit 18 -- "Sleep Disturbance and Wind Turbine Noise" June 2009	
Exhibit 19 -- Decommissioning	
Exhibit 20 -- Property Values	

Reviewer's comments to E-Coustic Solutions assertions, page 1 (October 15, 2009)	Response by Richard R. James INCE for E-Coustic Solutions
1) health effects.	
Response -- NO COMMENT/see response to assertion number 4	Response has no merit.
2) questions appropriate background sound assessment for development -- health effects.	
Response -- not required by chapter 375.10 where the developer elects to accept quiet area limits (55 dBA daytime and 45 dBA	Response has no merit. The Preamble clearly requires MDEP to require adequate provision for the control of excessive

Reviewer's comments to E-Coustic Solutions assertions, page 1 (October 15, 2009)	Response by Richard R. James INCE for E-Coustic Solutions
nighttime)	environmental noise, regardless of noise limits. Given the recent WHO guidelines issued in 2007 and 2009 which are lower than MDEP limits and are based on peer reviewed sufficient evidence, MDEP has an additional responsibility now to ensure adequate provision for the control of excessive environmental noise regardless of noise limits.
3) questions appropriate treatment of amplitude modulation/SDRS penalty application.	
Response -- I disagree -- my opinion is fully addressed in response to the initial Rufus Brown submission of Powers Trust Objections	Response has no merit. SDRS is simple to quantify by measuring during times locations and conditions of complaints with graphs fast enough to clearly show time varying sound level (i.e. strip chart of Fast response).
4) questions town of Oakfield would review committee: final report not reflecting current understanding of thresholds of perception and mechanisms.	
Response -- NO COMMENT (there are wide differences in opinion as seen in the attached documents "Evaluation of the Scientific Literature on the Health Effects Associated with Wind Turbines and Low-Frequency Sound6" and "Wind Turbine Sound and Health Effects an Expert Panel Review7.")	Current understanding must include evidence in Maine of noise disturbance at Mars Hill, Freedom, and Vinalhaven, regardless of MDEP participation. These are real wind turbine sites with real people disturbed. This is potentially far more valuable, simple, and useful evidence that scientific literature or expert panels can provide. Given the recent WHO guidelines issued in 2007 and 2009 which are lower than MDEP limits and are based on peer reviewed sufficient evidence, MDEP has an additional responsibility now to ensure adequate provision for the control of excessive environmental noise regardless of noise limits. Mr. W. Brown claims there are wide difference of opinion on this topic. What he fails to note is that the differences are between one group that acts as spokespersons for the wind industry and its trade organizations (Leventhal et. al.) and independent researchers who are calling for proper research to be conducted. This schism is reminiscent of the debates between tobacco industry experts and independent medical researchers in the 1950's. Just as the tobacco industry had its

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Reviewer's comments to E-Coustic Solutions assertions, page 1 (October 15, 2009)	Response by Richard R. James INCE for E-Coustic Solutions
	panel of experts that found no adverse health effects from smoking tobacco the wind industry's panel of experts find no adverse health effects from wind turbine noise pollution.
5) RSE/RSG claimed to be tainted because wind turbine projects they worked on have been subsequently complained of...	
Response -- MDEP policy question	Response has no merit other than to underscore that MDEP should seek independent investigators.
6) health risks for those living within a mile -- MDEP easement, independent determination regarding adequate disclosure of annoyance and health risks --	
Response -- MDEP policy question	Response has no merit other than to underscore that MDEP should seek independent reviewers. Not annoyance, rather, disturbance.
7) General Comments -- wind farm perception study comment -- "... finds that at or over 45 dBA 28% or 1 out of every 3 to 4 people will be "very annoyed." (p. 4)	
Response -- studies appear to be yet preliminary due to confounders, that may include visual factors and attitudes toward the impact of wind turbines on the landscape, etc.; studies do not use control groups and do not assure a direct correspondence to siting conditions for a generalized setting. See "Wind Turbine Sound and Health Effects an Expert Panel Review (section 3.4.1-2)	MDEP should review percentages of people disturbed by noise within one mile of Mars Hill, Freedom, and Vinalhaven. MDEP should review Chapter 375.10 Preamble and understand that no one will possibly object to MDEP taking a conservative (proactive and precautionary) approach to protecting public health.
8) Wind Turbine Sounds -- raises Infrasound objection. (p. 5-6)	
Response -- MDEP chapter 375.10 does not address infrasound, A-weighted metrics essentially filter out these frequencies from turbine sounds. Infrasound, sonic frequencies <20 Hz, have been widely accepted to be of no concern below the common human perception threshold of 85-90 dBG for non-pure tone sounds. There is insufficient, broadly accepted evidence to conclude otherwise. Numerous national infrasound standards limit industrial facilities, impact equipment and jet engines, but wind turbine infrasound levels fall far below these standards.	If complaints suggest in any way the presence of disturbance from noise of any kind it is incumbent on MDEP to require adequate provision for the control of excessive environmental noise (reread The Preamble if there is any question by MDEP or its consultants). The Chapter 375.10 Preamble on its face requires MDEP require controls if there are complaints from excessive noise. This does not guarantee a simple or straightforward process for the MDEP already codified ("addressed") in Chapter 375.10 language. If the MDEP does not house the expertise necessary to determine the problem MDEP at least does have the regulatory authority and is

Reviewer's comments to E-Coustic Solutions assertions, page 1 (October 15, 2009)	Response by Richard R. James INCE for E-Coustic Solutions
	incumbent by its Preamble to require by order the developers to investigate and mitigate, as well as the authority to shut down the development as needed to control excessive environmental noise until such time as the developer has mitigated the problem underlying complaints.
Wind turbines, rotating, under conditions necessary for power production produce a measurable broadband (lower frequencies) amplitude modulation of sound ("swoosh" and/or "thump") at ±1 Hz, which should not be confused with infrasound. See "Wind Turbine Sound and Health Effects an Expert Panel Review (section 3.2.1-2)," See also Bo Sondergaard, one of the authors, Specialist, Acoustics for DELTA response to Rick James, Infrasound workshop (Tahiti-2005) interpretation -- "Final RSE Response to Powers Objection 11-03-098 (p. 12 electronic copy)."	A moot point. By definition, if complaints exist, there is excessive noise. If there are complaints, under Chapter 375.10 Preamble MDEP should exercise regulatory authority to require developer investigate and control excessive noise.
9) Wind Turbine Noise Is Distinctively Annoying (p. 6)	
Response ---- studies appear to be yet preliminary due to confounders, that may include visual factors and attitudes toward the impact of wind turbines on the landscape, etc.; studies do not use control groups and do not assure a direct correspondence to siting conditions in Oakfield. See "Wind Turbine Sound and Health Effects an Expert Panel Review (section 3.4.1-2)	This reviewer understands from personal experience, as well as published reports, that people within a mile of these turbines are disturbed by excessive noise. Of that there is no question. No control groups are required. No peer reviewed studies are required. These are indisputable facts to anyone who has spent time in the footprint of operating wind farms during the night. As a conservative approach, the developer and the MDEP should be requiring a noise model that ensures the developer will be a good neighbor, taking into consideration the poor results that have occurred already within a mile around other wind turbine facilities.
10) Amplitude Modulation (p. 7-9)	
Response --. The MDEP chapter 375.10 with clarifying wind turbine compliance measurement protocol (2008) was designed to specifically assess stable atmospheric "worst-case" conditions and specifically requires quantitative documentation of amplitude modulation during measurement periods. This reviewer performed a focused assessment of a unique measurement location chosen for	No clarification of the existing Chapter 375.10 language for SDRS was needed. Amplitude modulation due to wind turbine operation has the potential to create SDRS, that is, short duration repetitive sounds that change the Fast Response A-weighted sound level more than 6 dBA. SDRS of this kind is simple to measure and quantify in graphs and,

Reviewer's comments to E-Coustic Solutions assertions, page 1 (October 15, 2009)	Response by Richard R. James INCE for E-Coustic Solutions
demonstration of the MDEP wind turbine routine operation compliance measurement protocol [See Conclusion-(Peer Review) Rollins Wind Project Sound Level Assessment -- Peer Review April 6, 2009]. The selected measurement location was near the center of a concave array of five line-of-sight turbines, ranging from 1300-2000 feet distance and 250-400 feet elevation from the microphone position. Meteorological data was collected at 10 m, and the closest 5 turbines for correlation with sound measurements to achieve desired measurement conditions (> 60% maximum wind turbine operation -- all 5 turbines (maximum sound power output) during light surface winds).	should have been demanded by MDEP for each existing wind turbine project without delay.

Reviewer's comments to E-Coustic Solutions assertions, page 1 (October 15, 2009)	Response by Richard R. James INCE for E-Coustic Solutions
The data was rigorously evaluated *using the Rollins Compliance Protocol* methodology for sound level equivalent, tonal and short duration repetitive sounds. The measurement period was characterized by prolonged stable atmosphere, "worst case" array geometry and line-of-sight conditions, but did not display amplitude modulation equal to or greater than 6 dBA. No result changing SDRS or tonal penalties would have been required, should this have been an actual compliance test site.	Was this graphed and presented in a written report? This reviewer never saw such graphs for Mars Hill that presented time histories at sufficiently fast sampling (such as 10 or 20 times per second) to show the time-varying sound level under conditions similar to those occurring for complaints. Yet, some data with longer sampling times did show fluctuations of 5-6 dB or more. This reviewer concludes that the inability to indentify SDRS is a result of not understanding how to conduct the appropriate field testing protocols. This review has measured SDRS from wind turbines at multiple sites in multiple locations east of the Mississippi.
In addition, amplitude modulation equal to or greater than 6 dBA was not observed/recorded in field notes for 8 sites (retrospective) during stable atmospheric conditions for linear, elevated turbines (hills/mountains), involving mixed surface conditions (trees-conifer/defoliated deciduous, open rock faces and crusted snow).	This reviewer finds this very hard to believe for Mars Hill, Freedom, or Vinalhaven to name three example wind turbine sites with GE 1.5M turbines in Maine with conditions occurring during complaints. This reviewer does not find it difficult at all to find times when tests show SDRS greater than 6 dB.
11) Infra and low-frequency sounds (p.10 -13)	
Response -- MDEP chapter 375.10 does not specifically address infrasound and low-frequency sounds. A-weighted metrics essentially filter out these frequencies from turbine sounds. "Wind Turbine Sound and Health Effects an Expert Panel Review (section 3.2.1-2)"	The Chapter 375.10 Preamble mandates MDEP require adequate provision for the control of excessive environmental noise, regardless of noise limits. If there are complaints then MDEP must take action and require the developer to do same.
12) WHO guidelines (2009) demonstrate that sound levels above 40 Lnight-outside pose a public health risk. (p. 14- 15)	
Response -- In 2008, MDEP chapter 375.10 compliance assessment conditions were clarified for wind turbine operation to maintain the robustness of the existing regulations which remain conservative, appropriate and consistent with the best practices of the National Research Council's 2007 report on the Environmental Impacts of Wind-Energy Projects.	An appropriate means to "maintain the robustness" would have been to tighten up Section F which provides a legal loophole big enough to drive a wind facility through. The historical record (Mars Hill) shows that the MDEP exercised a contract noise waiver rather than requiring adequate provision (post facto) for control excessive environmental noise. There is no evidence of "robustness" for this reviewer in

Reviewer's comments to E-Coustic Solutions assertions, page 1 (October 15, 2009)	Response by Richard R. James INCE for E-Coustic Solutions
	the actions MDEP has taken to date.
The WHO Nighttime Noise Guidelines for Europe (2009) Lnight, outside of 40 dBA [protecting the public including the most vulnerable groups (elderly, children and chronically ill)] is an annual average of nighttime turbine operating sounds at the residence. The MDEP chapter 375.10 with clarifying wind turbine compliance measurement protocol is designed to specifically assess worst-case, not average conditions and is required at distances up to 500 feet from the residence. These metrics (WHO & MDEP) are vastly different allowing no direct comparison.	The MDEP regulations include limits at "the residence" (called "protected locations" in Chapter 375.10), identical to the guidelines in the WHO 2007 and 2009 standards. The target goal for WHO is 30 dBA Lnight, outside (2007) with the 2009 interim guideline of 40 dBA Lnight, outside a clarification of a maximum guideline. The existing MDEP standards are much higher than WHO (with 50 night for urban residential and 45 night for quiet residential locations) and, MDEP has exercised waiver (at Mars Hill) to loosen those already permissive limits and has not demanded a 5 dB penalty for SDRS at Mars Hill. It is arguable whether MDEP can fairly characterize its work as assessing worst case conditions when its limits and adminstrative actions on their face do not work to protect the public including the most vulnerable groups (elderly, children and chronically ill).
13) Computer Model Predictions. (p. 15- 18)	
Response -- see Exhibit 3 response, above	See this reviewer's earlier comments on modeling in his testimony and in this document.
14) Comments on Health Risks and Wind Turbines (p. 18- 20).	
Response -- NO COMMENT	See this reviewer's earlier comments on Health risks in his testimony and in this document.
15) Final Conclusions for Oakfield Wind Project item 1.) (p. 20).	
Response -- The reviewer disagrees	Independent consultants should be required. Mr. Brown comments and strident defense of the procedures used by the utility's acoustical consultant shows that he no longer can claim to be an impartial reviewer for MDEP. He is acting as an advocate for the status quo.

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References provided by Warren Brown	By Richard R. James, INCE, for E-Coustic Solutions
1 Bullmore, A., Adcock, J., Jiggins, M., Cand, M., "Wind Farm Noise Predictions and Comparison with Measurements," Proceedings of the Third International Meeting on Wind Turbine Noise, Aalborg, Denmark, June 17-19, 2009.	A thorough review of literature on modeling of wind turbines shows that there is no consensus on which model is appropriate. For example, the ISO model is not used in many EU countries due to concerns about its accuracy. Instead the NORD2000 model is used. Mr. Brown needs to expand his review to include non-wind industry studies. This study is a good example of a study done by a company engaged in work for the wind industry attempting to bolster its methodology in presentations that do not require peer review.
2 Bowdler, D., Bullmore, A., Davis, B., Hayes, M., Jiggins, M., Leventhall, G., McKenzie, A. Acoustics Bulletin March/April 2009	
3 Manning, C.J., The Propagation of Noise from Petroleum and Petrochemical Complexes to Neighboring Communities. Report 4/81, CONCAWE, 1981.	The CONCAWE modifications were designed for petroleum processing facilities where the tallest structures are pipes and stacks. There is no evidence that the modifications of CONCAWE apply to meteorological conditions for ridge mounted wind turbines a thousand feet or more above the receiving location.
4 Søndergaard, B., (DELTA), "T he next version of the IEC 61400-11 measurement method." Proceedings of the Third International Meeting on Wind Turbine Noise, Aalborg, Denmark, June 17-19, 2009.	
5 International Standards Organization, "Acoustics - Attenuation of Sound During Propagation Outdoors, Part 2 – General Method of Calculation." IS0 9613-2, 1996	
6 Roberts, M. & Roberts, J., "Evaluation of the Scientific Literature on the Health Effects Associated with Wind Turbines and Low Frequency Sound," Prepared for Wisconsin Public Service Commission, Docket No. 6630-CE-302, October 20, 2009	This reviewer participated in the Wisconsin Public Service Commission Hearing in which Dr: Roberts testified. Dr. Roberts is an epidemiologist with no prior experience with wind turbines either as a cause of adverse health effects or as a noise source. His testimony was that an epidemiology study should be undertaken.
7 Colby, W.D., Dobie, R., Leventhall, G., Lipscomb, D.M., McCunney, R.J., Seilo, M.T., Søndergaard, B., "Wind Turbine Sound and Health Effects: An Expert Panel Review," Prepared for: American Wind Energy Association and Canadian Wind Energy Association, December 2009.	This self-published wind industry white paper was written by a panel of industry spokespersons that did no new research, never contacted a person complaining of adverse health effects, and whose work was not peer reviewed when published. Subsequent peer-review conducted by the Society for Wind

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	Vigilance, consisting of qualified independent medical and acoustical experts, (titled: An Analysis of the American/Canadian Wind Energy Association sponsored "Wind Turbine Sound and Health Effects An Expert Panel Review, December 2009") demonstrated that the conclusions drawn by the panel are not supported by the body of the report. One of the authors of the A/CanWEA Panel Review, W. David Colby M.D., reinforced this position by stating during a radio interview: *"We're not denying that there are people annoyed and that maybe some of them are getting stressed out enough about being annoyed that they're getting sick."*
8 Resource Systems Engineering, "Evergreen Wind Power II, LLC Oakfield Wind Project, Aroostook County, Maine - Response to Powers Trust Objection, November 3, 2009.	

From: **Labella, Catherine (GREENWICH, CT.)** <catherine_labella@ml.com>
Date: Tue, Jan 12, 2010 at 11:28 AM
Subject: RE: Oakfield
To: Philip Powers <ppowers714@gmail.com>

PHILIP: No info from ML about this IPO....BUT.... Please make note of the following excerpts from form S-1:

1. Concurrently with the completion of this offering, **the D. E. Shaw group and Madison Dearborn will enter into a stockholders' agreement pursuant to which they will agree to vote all shares of Class A common stock and Class B common stock then held by them, and acquired in the future, together** on certain matters submitted to a vote of our common stockholders, including the election of directors. **As a result, they will be able to exercise control over such matters requiring the approval of our stockholders, including the election of our directors and the approval of significant corporate transactions.**

2. Section F-2: KPMG audit report: The accompanying consolidated financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 2 to the consolidated financial statements, the Company has suffered recurring losses from operations and negative operating cash flows, has an accumulated deficit amounting to $116.4 million as of December 31, 2007, and does not have sufficient resources available to meet its funding needs through January 1, 2009. **Those conditions raise substantial doubt about its ability to continue as a going concern.**

3. **Essentially KPMG was fired and another audit firm was engaged after KPMG stated "doubt about its ability to continue as a going concern" opinion.**

4. **It appears to me the offering is being managed by D.E Shaw & Madison Dearborn because no other underwriter will touch it AND I suspect both firms are going to sell their shares on the offering. There is no indication in writing of this but it seems very likely.**

5. **Who is holding the debt that is coming due? D.E.Shaw and Madison Dearborn? If that is so, then if the company goes into bankruptcy and reorganization, the bond holders get paid off first.**

Some Background on D.E. Shaw from Wikipedia: Many of D. E. Shaw's recent headline-making transactions deal with investing in bankrupt companies with valuable assets. In December 2003, a subsidiary of one of the D. E. Shaw group funds acquired famed toy store FAO Schwarz, which reopened for business in New York and Las Vegas in the fall of 2004. In the same year, D. E. Shaw affiliate Laminar Portfolios also acquired the online assets of KB Toys, which continued operating as eToys.com. In August 2004, D. E. Shaw along with MIC Capital, proposed to inject $50M into the bankrupt WCI Steel. In December 2004, Shaw bought 6.6% of USG Corp, a wallboard manufacturer seeking bankruptcy protection as a result of rising asbestos liabilities. I hope this is helpful. **Regards, Catherine.**

Catherine E . Labella, Vice President, Portfolio Manager
Personal Investment Advisory Program
Merrill Lynch, 2 Pickwick Plaza, 4th Floor, Greenwich CT 06830
Phone: 800-868-1015 Fax: 203-635-4543

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EXHIBIT 29

MEMORANDUM

To: Rufus Brown, Esq

From: Philip Powers
Trustee
Martha A Powers Trust

Date: 01-06-10

Re: Comments on Maine DEP's Draft Order Concerning First Wind's Oakfield Project

This memo contains comments relating to the section entitled "Scenic Character, Visual Quality, & Existing Uses" of the Maine DEP's Draft Order concerning the application by First Wind for the proposed Oakfield WTG project.

The Draft Order contains the following statements:

1. The Department received approximately 50 public comments from property owners on Pleasant Lake expressing concerns relating to the visual impact of the proposed project. The comments included a petition signed by 46 persons.
2. The Department took a boat tour of Pleasant Lake with a representative of the applicant and a representative of the local lake association.
3. The primary siting authority must consider the visual impact of the proposed development's generating facilities located within 8 miles from a scenic resource. Pleasant Lake is approximately one mile from the nearest proposed turbine location.
4. Boaters using the public launch on Pleasant Lake must travel through the developed portion of the lake in order to access the scenic eastern portion.

The following comments relate to each of these statements:

1. It is very significant that such a large number of property owners feel so strongly that the proposed project will have an adverse scenic impact on Pleasant Lake that they wrote comments and signed a petition. These property owners are not residents of Oakfield, which is the primary economic beneficiary of the proposed project, and so they feel especially disenfranchised by this process. The Department has ignored the interests of these property owners insofar as there has been no consideration whatsoever offered to address the effect of the project on their property.
2. The representatives of the Martha A Powers Trust were not invited on this boat tour. Had they been present on the tour they would have been able to impart valuable information and offer significant insight to the Department since the Trust owns the undeveloped two thirds of Pleasant Lake. The Trust representatives were not offered an

opportunity to address issues directly to the Department on the tour and/or offer potential alternatives to the proposed project.

3. Insofar as the Legislature identified a distance of eight miles as the limit of potential visual effect, it is obvious that a turbine located on a hill one mile overlooking Pleasant Lake will have a significant impact. This turbine in particular will have a negative visual impact on the undeveloped two thirds of Pleasant Lake as it will tower above anything else within view and because it is visually completely inconsistent with any other structure, either man made or natural, in the viewshed.
4. This statement appears to be a primary reason for the Department's determination that the project will not have an unreasonable visual impact. This is like claiming that WTGs would not have a visual impact on Baxter State Park because visitors have to travel on Route 95 to get there. The undeveloped scenic portion is the destination, and the proposed WTGs will certainly have a negative effect on visitors' experience and expectations of an unspoiled wilderness experience. This experience is a rarity among spring-fed Great Ponds in Maine, since there are so few spring-fed Great Ponds which contain such a significant percentage of contiguous undeveloped area.

I would like to make the following additional comments:

In the rebuttal to the Powers Trust comments by De Wan & Associates no new simulations were submitted, only those from the original application. They state that the Powers Trust simulations are biased by presenting the turbines in afternoon light against an unnaturally dark background. This is not true, as Pleasant Pond is most actively used in the afternoon hours, particularly by those traveling to the east end of the lake to fish or take in the sunset. The intention was also to show that their simulations were in fact biased by showing the towers only against a white cloudy sky with flat light. Even under those circumstances the proposed towers nearest Pleasant Lake will create a significant visual impact.

De Wan & Associates' rebuttal also glosses over the fact that the turbines will be visible from most of the camps on the south shore and points in the west-central end of the lake. Many of the comments the DEP received came from such camp owners. By submitting visual simulations from multiple vantage points, I believe this point was clearly mad, but it seems to be carrying little weight.

In summary the Department ignored the strenuous objections of a significant number of effected property owners who have been disenfranchised by this process. The Department also ignored significant factual evidence of the significant visual impact of the proposed project on the undeveloped portion of Pleasant Lake.

In no way can the Department's Draft Order be considered an unbiased assessment which faithfully represents the interests of the residents of the State of Maine.