

**Appeal to the Board of Environmental Protection In The Matter Of:
Spruce Mountain Wind LLC [L-24838-24-A-N // L-24838-2G-B-N]**

- **Response by Licensee (dated November 16, 2010)
Spruce Mountain Wind LLC**

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November 16, 2010

VIA E-MAIL & U.S. MAIL

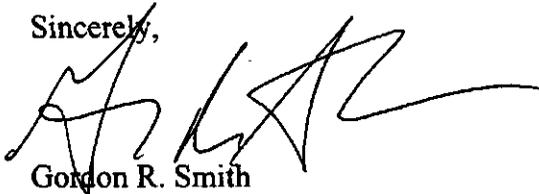
Board Chair Susan M. Lessard
c/o Terry Dawson
Board of Environmental Protection
#17 State House Station
Augusta, ME 04333-0017

Re: Department Orders L-24838-24-A-N, L-24838-2G-B-N (approval)
Spruce Mountain Wind LLC – Spruce Mountain Wind Project

Dear Chair Lessard:

Enclosed please find Spruce Mountain Wind LLC's Response to the Appeal of the above-captioned order, including an accompanying Appendix of Exhibits. Thank you for your consideration of these materials.

Sincerely,



Gordon R. Smith

GRS/mtr
Enclosures

cc: Peggy Bensinger, Assistant Attorney General (w/encls.)
Cynthia S. Bertocci, BEP Executive Analyst (w/encls.)
Dawn Hallowell, Project Manager (w/encls.)
Rufus Brown, Esq. (w/encls.)

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STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

IN THE MATTER OF

SPRUCE MOUNTAIN WIND LLC)	
Woodstock, Oxford County,)	
SPRUCE MOUNTAIN WIND PROJECT)	SPRUCE MOUNTAIN WIND LLC
L-24838-24-A-N)	RESPONSE TO APPEAL
L-24838-2G-B-N (approval))	

STATE OF MAINE
BOARD OF ENVIRONMENTAL PROTECTION

SPRUCE MOUNTAIN WIND LLC)	
Woodstock, Oxford County)	RESPONSE TO APPEAL BY
SPRUCE MOUNTAIN WIND PROJECT)	SPRUCE MOUNTAIN WIND LLC
L-24838-24-A-N (approval))	
L-24838-2G-B-N (approval))	

Spruce Mountain Wind LLC (“SMW”) hereby responds to the appeal of the above-captioned Order filed by the Friends of Spruce Mountain (“FOSM”) and several individuals (collectively “Appellants”).

INTRODUCTION

The Appellants claim that the Department of Environmental Protection (the “Department”) failed to conduct an adequate review of SMW’s application to construct a 10-turbine expedited wind energy facility (the “Project”) in the Town of Woodstock, Maine. Specifically, the Appellants claim that the Department made erroneous conclusions regarding the Project’s potential sound, health and scenic impacts, as well as purported errors related to financial capacity and decommissioning. On the contrary, the Department’s determination that the Project complies with all applicable laws and regulations is based upon an exhaustive eight-month review process and is well supported by the record. As discussed below, the information related to potential sound and visual impacts that SMW submitted to the Department has been confirmed by independent peer review as well as inter-agency consultation. All of the Appellants’ claims were addressed by SMW, the Department, sister state agencies, and third-party experts during a comprehensive permitting process that included extensive public comment and input. As a result, the Board should uphold the Department’s decision and deny the request for a public hearing on the appeal.

PROCEDURAL BACKGROUND

A. Project Overview

The Project is a 20-megawatt (MW) wind energy facility located in Woodstock, Oxford County, Maine. See Project Map attached as Exhibit 1. The Project will consist of 10 Gamesa turbines, each with a rated capacity of 2 MW. Each turbine tower is 78 meters tall (approximately 256 feet) from the ground to the center of the hub, and turbines will have a maximum 90-meter rotor, resulting in a maximum height from the ground to the tip of a fully extended blade of 123 meters (approximately 403 feet).¹ See Department Order at 1-2.

The Project includes construction of an approximately 1.4-mile access road from Shagg Pond Road to the Spruce Mountain ridgeline, where a 2.1-mile access road along the ridgeline will connect the wind turbines. A 34.5-kilovolt (kV) above-ground electrical distribution line running approximately 1.3 miles from the Project to Cushman Road will connect the Project to the local CMP electrical distribution line. See Department Order at 2.

The closest residence will be 2,186 feet from a turbine. Two residences will be between 2,600 and 2,700 feet from the closest turbine. Six residences will be between 3,250 and 3,850 feet from the closest turbine. All other residences will be over 4,300 feet from the closest turbine. See Department Order at 10.

The entire Project area is located on land currently utilized for commercial forestry operations. The Project area, including all new roads, turbine pad sites, the operations and maintenance building, and parking areas, will create approximately 8.7 acres of new developed area. The Project will not result in any impacts to inland waterfowl and wading bird habitats,

¹ SMW's permit application included an alternative turbine scenario based on 11 GE 1.5 MW turbines. However, since that time SMW has executed a turbine supply agreement with Gamesa based on a 10 turbine layout. Accordingly, turbine #4 depicted on the Project map attached as Exhibit 1 will not be installed.

deer wintering areas, significant vernal pools, or other habitats for any rare, threatened or endangered species. In addition, the Project will protect approximately 1,000 acres of land through a permanent conservation easement and has set aside a 250-foot buffer around two streams to preserve habitat for northern spring salamanders (a species of special concern). See Department Order at 58-59.

B. Town of Woodstock Review Process

Before filing an application with the Department, SMW went through the local site plan review process in the Town of Woodstock. In preparation for the site plan review, SMW held a public informational meeting in the Town of Woodstock in November 2008, and attended six meetings of the Woodstock Planning Board and three meetings of the Selectboard in 2008 and 2009. The Woodstock site plan review was based on essentially the same information subsequently filed with Department as part of the Site Location of Development application. SMW's site plan application was unanimously approved by the Woodstock Planning Board on November 13, 2009, and it was not appealed. SMW attended a subsequent public meeting on November 17, 2009 to explain the Project review process and to answer any questions about the Project. SMW also attended a follow-up meeting with the Woodstock Planning Board in January 2010. In addition, SMW mailed an informational newsletter to Woodstock residents in December 2009, attended two additional Planning Board meetings in 2010, and, together with Central Maine Power representatives, held an informational meeting on transmission line upgrades for residents of Cushman Road on April 14, 2010.

After the Project had received its local site plan review approval, an initiative to enact a wind power moratorium was brought forward by a member of FOSM in early 2010. SMW gave

an update on the Project at the Town's public meeting on the proposed moratorium on March 25, 2010. The moratorium was defeated 101-43 at the Woodstock town meeting on March 29, 2010.

C. Department Review Process

After receiving local approval, SMW submitted an application on January 13, 2010, to the Department for permits to construct the Project pursuant to the Natural Resources Protection Act and the Site Location of Development Act. The application was accepted as complete for processing by the Department on February 1, 2010, and no requests for a public hearing were received by the Department during the review period. On March 25, 2010, the Department held a public meeting in the auditorium of the Woodstock Elementary School pursuant to 38 M.R.S.A. § 345-A(5), at which interested parties submitted comments and asked questions of the Department staff. Department Order at 4. The Department's sound and visual experts, Warren Brown and James Palmer, respectively, were present at that meeting.

The review process, which was extended twice by the Department to allow for further review of sound and health impacts, among other issues, and spanned eight months, included consultation with experts and sister review agencies, public input and interaction between Appellants and the Department. See Department Order at 4.

As part of its review, the Department hired independent acoustical consultant Warren Brown of EnRad Consulting ("EnRad") to review SMW's noise impact assessment. EnRad conducted an initial peer review of SMW's noise impact assessment, including a review of the Project's CadnaA sound model. See Department Order at 7-8. In his Spruce Mountain Wind Project Woodstock, Maine -- Peer Review dated June 23, 2010 (attached as Exhibit 2), EnRad recommended that the assessment be rerun using more conservative predictive assumptions. SMW revised its modeling assumptions in accordance with EnRad's recommendation. The

revised model results were delivered to the Department on July 15, 2010, and were found by EnRad to be “reasonable and technically correct according to standard engineering practices and the Department Regulations on Control of Noise (06-096 CMR 375.10).” See Spruce Mountain Wind Project – July 15, 2010 Resubmission Peer Review (attached as Exhibit 3). During the review process, the Department received several e-mails from members of FOSM expressing concerns about the Project, including the Project’s noise impact assessment. On June 8, 2010, SMW provided a response to FOSM’s questions relating to margin-of-error assumptions used in the sound model. See Letter from Tetra Tech to Dawn Hallowell, June 8, 2010 (attached as Exhibit 4). Some of the FOSM e-mails raised concerns about possible health effects relating to the Project, including links to several studies. At the Department’s request, Dr. Dora Mills of Maine Center for Disease Control (“MCDC”) reviewed these concerns and responded on September 25 and September 27, 2010, noting that this information did not change her previous assessment of these issues. See Department Order at 12.

Also as part of its review, the Department hired independent visual consultant Dr. James Palmer of Scenic Quality Consultants to review SMW’s visual impact assessment. See Department Order at 21. Dr. Palmer conducted an initial peer review of SMW’s visual impact assessment. As part of this initial review, Dr. Palmer visited the Project site with SMW consultant Terry DeWan on May 7, 2010. In addition, Department staff also conducted site visits on May 12, 2010 (with Terry DeWan) and June 24, 2010. See Department Order at 24. Dr. Palmer evaluated the accuracy of SMW photosimulations, and requested a revision of one photosimulation and three new photosimulations. See Department Order at 22. SMW submitted the requested photosimulations on May 21, 2010. On May 21, the Department requested that SMW conduct a survey of hikers on Bald Mountain over the Memorial Day weekend, and

provided a draft survey instrument. SMW hired Market Decisions, Inc. to complete the survey instrument, administer the survey, and evaluate the results. SMW submitted the completed survey results to the Department on June 3, 2010. On June 11, 2010, Dr. Palmer completed his review of the Project's visual impact assessment. See Department Order at 21-22.

After its review of the information on visual impacts, the Department arrived at the following conclusion:

Based on the information presented in the VIA, the design of the proposed project, the applicant's user survey, review comments from Scenic Quality Consultants, the Department's site visits, comments raised by interested parties, and in consideration of the evaluation criteria pursuant to 35-A M.R.S.A. § 3452(3), the Department finds that the applicant has made reasonable accommodation to fit the development into the natural environment and that no aspect of the project will have an unreasonable adverse effect on the scenic character, or existing uses related to scenic character of scenic resources of state or national significance, or other existing uses in the area.

Id. at 25.

Throughout the review process, SMW and Department staff exchanged various emails with several of the Appellants, including members of FOSM, responding to their concerns about the project. In addition, Department staff met with members of FOSM in person on June 30, 2010 to address their comments on the Project.

On September 15, 2010, the Department issued a draft order approving the Project. On September 22, FOSM, through its attorney, submitted some 32 exhibits consisting of several hundred pages of information primarily related to sound and health issues and objected to the draft permit. This information was submitted on the last day of the comment period after the draft permit was issued, and the Department extended the review period an additional six business days solely to allow for review of these materials, despite the fact that much of the

material has been reviewed by the Department in the context of other wind power projects. See Department Order at 4. On October 5, 2010, the Department issued its final order approving the SMW Project. On November 3, 2010, Appellants filed the instant appeal with the Board.

DISCUSSION

I. THE PROJECT COMPLIES WITH THE DEPARTMENT'S NOISE STANDARDS AND APPELLANTS' ARGUMENTS HAVE ALREADY BEEN HEARD AND REJECTED BY THE BOARD AND THE MAINE SUPREME COURT

The Appellants raise unsubstantiated theoretical concerns regarding the ability of SMW's sound model to accurately predict sound emissions associated with the Project. The overwhelming evidence, however, demonstrates that the sound model and modeling assumptions used by SMW are an accurate and even conservative predictor of the Project's sound levels. The predictive modeling methodology used by SMW has been vetted and approved by multiple peer reviews conducted by independent acoustical engineers. Contrary to the Appellants' suggestion that the Department accepted SMW's sound submissions without adequate scrutiny, the Department required SMW to demonstrate compliance under significantly more conservative assumptions than those reflected in its initial model. Perhaps most importantly, the modeling methodology that the Department approved has been empirically verified by sound measurements taken during compliance monitoring at the Stetson Wind Project. Furthermore, this Board has affirmed the Commissioner's reliance on this modeling methodology in three prior appeals, as did the Maine Supreme Court in the first of those appeals.

A. The Department's Review of SMW's Modeling Methodology Resulted in a Conservative Sound Model that Demonstrates Compliance

The Project's sound modeling was conducted by Tetra Tech EC, Inc. ("Tetra Tech") and was included in the Project application submitted to the Department. See Spruce Mountain Wind Project Sound Level Assessment ("Tetra Tech Report" attached as Exhibit 5). The

modeling methodology approved by the Department is the same as that used in the three wind power projects that have previously been appealed to and approved by the Board. The Tetra Tech Report describes the initial conservative assumptions that were used in predicting the Project's sound emissions. Those assumptions include:

- All turbines operating continuously and simultaneously at maximum sound output
- Meteorological conditions favorable to sound propagation: downwind conditions in all directions, or equivalently, a moderate nighttime temperature inversion
- Modeling of wind turbines as closely spaced point sources, resulting in cylindrical spreading (i.e. line source effects) at certain ranges perpendicular to the turbine array.
- Conservative ground absorption rate that assumes equal parts hard surfaces (such as pavement) and soft surfaces (such as fields, lawns, or snow cover), despite the rural nature of the Project area; all water bodies were calculated as perfectly reflective hard surfaces
- No sound attenuation due to foliage (i.e. defoliated wintertime conditions were assumed year round)
- Addition of 2 dBA to the manufacturer's listed sound power output for each turbine to account for potential unit-to-unit variation and overall margin of uncertainty

See Tetra Tech Report at 5-11 to 5-13; Letter from Tetra Tech to Dawn Hallowell, June 8, 2010.

The Department's independent acoustical consultant, EnRad, reviewed the Tetra Tech Report and recommended that, in addition to the conservative inputs described above, the Project should incorporate even more conservative modeling assumptions to assure compliance with the Department's noise rules. See EnRad Peer Review, June 23, 2010. As a result of EnRad's conclusions and further consultation between SMW, the Department and EnRad, Tetra Tech included, among other additional conservative inputs, the following major alterations:

- An additional 3 dBA safety factor was added to projected sound levels from the turbines to account for potential uncertainty in the sound model
- Selected turbines were modeled in noise restricted operation ("NRO") – i.e. operating at reduced rotor rotational speed and reduced power output – to assure compliance at the closest receptors

See Letter from Tetra Tech to EnRad, July 15, 2010, at 1-2, attached as Exhibit 6.

NRO is accomplished by reducing the power output of a turbine, namely by slowing the rotation of the rotors. That reduction in power results in a reduction in sound output. So instead of the maximum sound power output of the turbine being 110 dBA (i.e. the manufacturer's specified 105 dBA plus the 5 dBA safety factor), the maximum sound power output will be capped at 107.2 dBA or 108.2 dBA, depending on the turbine, for three of the Project's turbines. See Department Order at 8-9. Accordingly, the use of NRO does not alter the modeling methodology in any way. It simply reflects a reduced maximum sound power output due to a limitation of the turbines' rotational speed. The NRO protocol is programmed into the turbines' operational software by Gamesa, the turbine manufacturer, and cannot be altered by SMW. See Letter from Andrew Lockhart to Andy Novey, July 13, 2010 (attached as Exhibit 7).

In addition, at EnRad's request SMW submitted further information regarding the potential for the Project to result in short duration repetitive sounds (SDRS).² That information, a memorandum from INCE Board Certified noise control engineer Kenneth Kaliski, indicated that the characteristics of the Project site, namely the variable elevation of the terrain, "are not conducive to common occurrence of SDRS." See Memorandum from Kenneth Kaliski to Todd Presson (attached as Exhibit 8). Mr. Kaliski also pointed out that post-construction sound monitoring at the Project would evaluate whether SDRS was occurring and could be addressed accordingly. Id.

² SDRS are defined as a sequence of sound events, each clearly discernable, that cause an increase of 6 dBA or more in the sound level observed before and after the event. See 06-096 CMR Chapter 375, § 10(G)(19). Because they can be annoying, there is a 5 dBA "penalty" that applies when SDRS occur. Specifically, 5 dBA is added to the observed levels of the SDRS for purposes of determining compliance with the applicable standards. Id. § 10(C)(1)(e).

As a result of these additional safety factors, EnRad concluded that SMW had created “a reasonable prediction model that may be conservative at times.” See EnRad Resubmission Peer Review, July 23, 2010; see also Department Order at 7-10.

B. The Modeling Methodology Used by SMW Has Been Field-Tested and Confirmed to Over-Predict Actual Operational Sound Levels

The sound model and the modeling assumptions used by SMW have been verified by EnRad as accurate and appropriate for predicting wind turbine sound emissions in repeated reviews of applications to construct wind energy facilities in Maine, including the SMW, Record Hill, Oakfield, Stetson and Rollins wind power projects. Most importantly, the Appellants’ theoretical contentions regarding model accuracy are proven wrong by actual compliance monitoring data from the Stetson Wind Project, which used the same modeling inputs as those used by SMW. That data is real world verification that the SMW sound model is appropriate and conservative.

The findings of the Stetson monitoring are contained in the Stetson Wind Project Operations Compliance Sound Level Study (“Stetson Report”), which was submitted to the Department in connection with the SMW Project on July 15, 2010. See Letter from Tetra Tech to EnRad, July 15, 2010, at Attachment A. The Stetson Report contains 74 hours of sound monitoring data of turbine operations at three protected locations around the Stetson Wind Project under meteorological conditions when turbine noise is most noticeable. Id. at 13. The report compares the actual turbine sound emissions during operation to the sound levels predicted by the model. The Stetson Report demonstrates that the sound model on average over-predicted sound levels by 2-3 dBA at protected locations. Id. at 30; see also e-mail from Warren Brown to Dawn Hallowell, September 24, 2010, attached as Exhibit 9. The same conservative

modeling assumptions used at the Stetson Wind Project were used to predict sound emissions at the proposed SMW Project.

The results of the Stetson Report were evaluated and commented on by EnRad. See Letter from Tetra Tech to EnRad, July 15, 2010, at Attachment B (EnRad Oakfield Peer Review Report at 5-6). As Warren Brown stated in his review, “[t]he data was rigorously evaluated” to assess the accuracy of the predictive model. Id. at 6. Warren Brown determined that the Stetson testing represented the “worst-case” scenario with respect to the shape of the turbine array, distance from turbines, topography, and meteorological conditions for sound propagation. Id. Even under these conditions, actual sound emissions at full power operation of the Stetson Wind Project were below predicted operating levels. Id. Warren Brown concluded that the Stetson Report demonstrates that the sound model and the modeling inputs used for that project – the same as those used by SMW for the Spruce Mountain Project – constitute a “calibrated prediction model” that accurately represents potential wind turbine sound emissions at protected locations. Id. A more detailed discussion of Appellants’ specific claims regarding model accuracy is attached as Appendix A.

C. The Board and the Maine Supreme Court Have Already Heard and Rejected Appellants’ Claims

The Appellants’ claims regarding the model have been heard multiple times by the Board and rejected. See Board Order in the matter of Evergreen Wind Power III, LLC, August 6, 2009 (“Rollins Board Order”); Board Order in the matter of Record Hill Wind LLC, March 18, 2010 (“Record Hill Board Order”); Board Order in the matter of Evergreen II, LLC, June 3, 2010 (“Oakfield Board Order”); Board Dismissal of Petition to Revoke or Suspend License, October 7, 2010 (“Rollins Petition for Revocation Order”). For example, in affirming the permit issued by the Department for the construction of the Oakfield wind power project, the Board concluded

that modeling methodology “meets standard industrial sound modeling protocols” and demonstrated compliance with “the Department’s most restrictive sound level limits.” Oakfield Board Order at 9.

In its dismissal of the petition to revoke or suspend the license issued to the Rollins Wind Power Project, the Board pointed out that, according to EnRad, “the wind project prediction model based on CADNA/A software with incorporation of an uncertainty factor of + 5 dBA and the intentional omission of possible attenuating factors (absorptive cover, lake surfaces and foliage) yields reasonably conservative estimates for hourly sound levels.” Rollins Petition for Revocation Order at 5.

In denying the appeal of the Record Hill Wind project, the Board found that “[t]he applicant submitted a detailed sound level assessment model which uses the Department’s most restrictive sound level limits and which meets standard industrial sound modeling protocols.” Record Hill Board Order at 10. The Board further found that “the applicant has made adequate provisions to ensure that noise standards pursuant to the Site Law Rules, Chapter 375 (10) were met.” Id. at 10-11.

The Board’s conclusion that the predictive sound model employed by SMW is a sufficient demonstration of regulatory compliance has been affirmed by the Maine Supreme Court. See Friends of Lincoln Lakes v. Board of Environmental Protection, 2010 ME 18, ¶¶ 18-19. The Court’s ruling stated that there was substantial evidence in the record to support the Board’s findings that the model was appropriate, including the Board’s findings with respect to short duration repetitive sounds and point source calculations. Id.

D. Sound Monitoring at the Vinalhaven Wind Power Facility Provides No Basis to Question SMW's Compliance with Department Sound Rules

Even though the sound model and modeling assumptions used by SMW have been confirmed as accurate and appropriate through field measurements, multiple independent peer-reviews, and the Board's prior reviews, the Appellants persist in raising claims about theoretical limitations or inaccuracies in the modeling methodology. In this appeal, the Appellants attempt to revive their objections with the claim, made without any factual basis, that recent sound monitoring results at the Fox Islands Wind facility on Vinalhaven Island somehow indicate that SMW's Project will not comply with regulatory sound limits. Appellants' Brief at 8, 14.

On October 7, 2010, the Board heard and rejected a petition to revoke or modify the Department license issued to the Rollins Wind Power Project based on the Vinalhaven sound monitoring data and the identical arguments made by Appellants here. The Board concluded that, given that "a host of site-specific criteria" were factored into the Rollins project's predictive sound modeling and that the Rollins project's modeling "included the 5 dBA uncertainty factor not included in the Vinalhaven model," it was not reasonable to draw conclusions about the accuracy of the Rollins project's model from sound monitoring at Vinalhaven. See Rollins Petition for Revocation Order at 5. As discussed above, the modeling methodology approved for the Rollins project is the same as that approved for the SMW Project. Accordingly, the Vinalhaven sound monitoring results are irrelevant to the validity of the Project's predictive modeling.

As recognized in the Board's dismissal of the petition to revoke, the Vinalhaven project used different and less conservative sound modeling assumptions than the sound modeling at issue in this appeal, and therefore, whether or not sound monitoring at Vinalhaven indicates compliance, it provides no basis to question the accuracy of SMW's sound model predictions. It

is beyond dispute that sound levels from a wind power facility are dependent upon a host of site-specific factors including the number and arrangement of turbines, meteorology, the turbine make and model, and the terrain, as well as the distances between a receptor and nearby turbines. Thus, by itself, the claim that the Vinalhaven facility is not in compliance with the Department's noise standards has no bearing on what will occur at the SMW site. Monitoring results may be compared to predicted sound levels at the same project to verify the accuracy of a predictive model. Indeed, as discussed above, monitoring results at the Stetson Mountain Project have confirmed the validity of predictive modeling assumptions used at Stetson (which are the same modeling assumptions used by SMW). However, Appellants are not using the monitoring results at Vinalhaven to establish the accuracy of the Vinalhaven modeling inputs. Instead, Appellants are using the Vinalhaven monitoring results to draw conclusions about the accuracy of the SMW modeling inputs. Neither logic nor the data support such a leap.

First, the modeling methodology used by SMW (discussed above) includes substantially more conservative assumptions than those used at Vinalhaven. Whereas the Vinalhaven model assumed a maximum sound power output of 104 dBA (based on GE's 1.5 sle turbine sound specifications, but specifically excluding GE's 2 dB factor that reflects uncertainty in GE's sound specifications), the SMW model assumed a maximum sound power output of 110 dBA (based on the Gamesa G90 turbine sound specifications, plus Gamesa's 2 dB k-factor to reflect uncertainty in the Gamesa sound specifications, plus an additional 3 dBA modeling uncertainty factor recommended by the Department). See Letter from Tetra Tech to EnRad, July 15, 2010. Thus, the sound monitoring results from the Vinalhaven project provide absolutely no basis to question the predictive accuracy of the SMW modeling.

Second, whether Spruce Mountain and/or Vinalhaven use Noise Reduced Operation (NRO) mode for compliance is irrelevant. Appellants claim that the “recent experience of the undersigned” (that is, the Appellants’ legal counsel) indicates that “in the real world NRO operating mode will not work as predicted.” Appellants’ Brief at 8. This claim is made with no evidentiary support whatsoever. The claim also ignores the additional conservatism of SMW’s modeling. Moreover, as discussed above, the modeling assumptions used by SMW are totally different and more conservative than those used at Vinalhaven. Therefore claims regarding the modeling at Vinalhaven, including for turbines operation in NRO mode, are simply irrelevant to this Project.³

Third, the points of alleged non-compliance at Vinalhaven are far closer to turbines than any of the protected locations at the SMW Project. Accordingly, even a rough, back-of-the-envelope comparison based on distances between turbines and receptor points at Vinalhaven does not support a conclusion that the SMW Project will be out of compliance. If anything, the opposite is true. Petitioners allege that the monitoring data at Vinalhaven indicates that the 45 dBA limit is exceeded at the closest protected location, which is 875 feet from the nearest turbine. See Appellants’ Exhibit 30 at 2. In contrast, the closest protected location subject to the 45 dBA limit at the Spruce Mountain project is located 1,686 feet from the closest turbine – nearly twice as far away. See Letter from Tetra Tech to EnRad, July 15, 2010. Thus, the results at Vinalhaven provide no logical basis for questioning the Spruce Mountain Project’s sound modeling.

Finally, Appellants’ claims rely on the conclusions made by Warren Brown of EnRad that the Vinalhaven facility is out of compliance with the Department’s noise limits. However,

³ Appellants also misstate the NRO protocol required of SMW by the Department. The Project will operate with three turbines in NRO mode, see Department Order at 16, not six turbines in NRO mode, as incorrectly stated by Appellants, see Appellants’ Brief at 7, 14.

Appellants are attempting to use the Vinalhaven results to discredit Warren Brown's own peer review determination that the SMW sound modeling is reliable and accurate. Appellants cannot have it both ways. Whereas Warren Brown, in his peer review of the Fox Islands Wind Power Project Noise Impact Assessment from June 1, 2009, stated that "potential compliance concerns exist for the nearest 6 protected locations identified in this report," Warren Brown made no such finding in his ultimate assessment of the SMW Project. Warren Brown has peer-reviewed sound model results for the SMW, Rollins, Record Hill, Oakfield and Vinalhaven projects. He has peer-reviewed the post-construction monitoring results at the Mars Hill (four rounds), Stetson (three rounds) and Vinalhaven sites, and has been instrumental in developing the Department's post-construction monitoring compliance protocol. As such, his conclusion that the SMW modeling is accurate and conservatively estimates maximum predicted sound emissions from the project is entitled to substantial weight and should not be set aside based on the unfounded assertions made by Appellants.

In summary, there is nothing in the monitoring results from Vinalhaven that undermines the conclusion by Tetra Tech, EnRad and the Department that the Spruce Mountain project will comply with the Department's noise standards. Accordingly, Appellants' claims are without merit and SMW's predictive sound model demonstrates that the Project will comply with Department noise limits at all protected locations.

II. SMW HAS DEMONSTRATED AND THE DEPARTMENT HAS CONFIRMED THAT THE PROJECT WILL NOT RESULT IN UNREASONABLE ADVERSE HEALTH EFFECTS AND APPELLANTS' ARGUMENTS HAVE ALREADY BEEN HEARD AND REJECTED BY THE BOARD AND THE MAINE SUPREME COURT

Appellants do not and cannot claim that the Commissioner did not consider the Project's potential health impacts. In fact, Appellants acknowledge that the Commissioner's conclusions regarding public health stem from three independent bases, namely consultation with the MCDC,

review of scientific literature on the relationship between wind turbines and public health, and review of the 2009 World Health Organization Night Noise Guidelines for Europe. Appellants' Brief at 30-31; see also Department Order at 12-13. Instead, Appellants complain that the Commissioner should have been more persuaded by information that Appellants favor and that was submitted by Appellants in the last week of the Commissioner's eight-month review process, after the Department had issued its draft order. Even if Appellants had submitted this information earlier in the permitting process, there is nothing put forth by Appellants that undercuts the Department's conclusion that the Project will not result in adverse health impacts.

A. The Site Location of Development Act Establishes Standards Governing Potential Sound and Health Impacts

Appellants' health claims are based on the standards in the Site Law relating to sound and health. Although the Site Law does not include a specific health-based standard, it does require that "the development will not adversely affect existing uses, scenic character, air quality, water quality or other natural resources in the municipality or in neighboring municipalities." 38 M.R.S.A. § 484(3). In applying this standard, "the department may consider the effect of noise from a commercial or industrial development." Id. § (3)(A). In doing so, "the department shall consider board rules relating to noise." Id. § (3)(B).

As the Board is aware, the Department rules relating to noise establish numerical sound limits at project boundaries and at protected locations, which include parcels of land containing a residence. Limits at protected locations range from 55 dBA to 70 dBA during the daytime, and 45 dBA to 60 dBA during the nighttime, depending on existing uses and ambient sound levels in the area. The Project is subject to Chapter 375's most stringent limits, 55 dBA during the daytime and 45 dBA during the nighttime. The nighttime limit is applied to all locations within 500 feet of residences. 06-096 CMR 375(10)(C).

The Department reviewed the Project pursuant to both the underlying statutory standard requiring no undue adverse impact on existing uses and pursuant to the Department's noise rules. In addition to finding that the Project complies with the numerical sound limits established in Chapter 375(10), the Department took the additional step of independently evaluating potential health impacts. The Department concluded that Project "will meet the applicable standards of Chapter 375 (10) . . . and that the applicant has made adequate provision for the control of excessive environmental noise. . . ." Department Order at 16.

Specifically, with respect to health impacts, the Department found that, "Based on its review of all of the material submitted regarding the potential health effects of wind turbines the Department finds that compliance with Chapter 375 § 10 is likely to ensure that there are no adverse health effects due to the proposed project." Department Order at 13. As discussed below, these findings are well supported by credible record evidence.

B. The Department's Conclusions Regarding Potential Health Impacts Are Based on and Are Consistent with the Findings of Numerous Experts

Appellants' claims ignore the fact that the Department and the MCDC engaged in a diligent and thorough review of potential health impacts related to wind turbine noise. As noted above, the Department took the additional step of retaining the independent acoustical expert EnRad to assess the Project's compliance with regulatory noise limits and consulted with the MCDC regarding potential impacts to public health. In June 2009 the MCDC issued a report titled "Wind Turbine Neuro-Acoustical Issues." See MCDC Report (attached as Exhibit 10). The report, prepared by Dr. Dora Mills, the State's chief medical officer, included a review of the scientific literature addressing the health impacts of wind turbine noise. In her review, Dr. Mills found "no evidence in peer-reviewed medical and public health literature of adverse health effects from the kinds of noise and vibrations heard by wind turbines other than occasional

reports of annoyances, and these are mitigated or disappear with proper placement of the turbines from nearby residences.” Department Order at 12. Dr. Mills referenced the U.S. Department of Energy wind power siting guidance for the conclusion that at a distance of approximately 1,000 feet, modern wind turbines are no louder than a moderately quiet room. MCDC Report at 2.

At the Department’s request, the MCDC also specifically reviewed the public health information submitted by the Appellants and other parties interested in the SMW Project. Department Order at 12. After reading all of the submissions, which form the basis of Appellants’ health claims in this appeal, Dr. Mills concluded that they did not “add anything significant to her findings.” E-mail from Dr. Dora Mills to Dawn Hallowell, September 27, 2010 (attached as Exhibit 11).

Contrary to Appellants’ unfounded accusations against Dr. Mills’ credibility and professionalism, the record demonstrates that her review was evenhanded and acknowledged that an improperly cited wind power facility can have negative impacts on nearby neighbors. The MCDC report recognizes that “distance from the wind turbine, height of the wind turbine relative to the surrounding topography, the quality of the sound (repetitive low frequency sound), wind conditions, and wind direction all affect how the wind turbine noise affects people.” MCDC Report at 2. Accordingly, Dr. Mills recommended these factors “need to be considered when siting wind turbines near residential properties.” Id.

In addition to seeking the input of the MCDC, the Department conducted its own review of studies on sound-related health impacts that were submitted by SMW, Appellants and other interested parties, and concluded that the Project would not result in adverse health effects. Department Order at 12-13.

One of the studies that the Department relied on, and specifically cited in its order, see Department Order at 12-13, was an October 20, 2009 report titled, "Evaluation of the Scientific Literature on the Health Effects Associated with Wind Turbines and Low Frequency Sound," which was produced by Exponent, an international science and engineering consulting firm. (The "Exponent Report," attached as Exhibit 12). The Exponent evaluation was conducted on behalf of the Wisconsin Public Service Commission, that state's regulatory body that oversees public utilities. Exponent initiated its evaluation by performing a search of peer-reviewed scientific literature in the database maintained by the United States National Library of Medicine, which contains over 19 million citations to medical and scientific journals. Exponent Report at 29. After identifying 156 scientific articles relevant to the health effects of wind turbine noise, Exponent narrowed its study according to the 2003 United States EPA guidelines for the assessment of the quality of scientific and technical information. That process yielded the 21 "most relevant and scientifically appropriate" studies, which formed the basis of Exponent's evaluation. Exponent Report at 29-33.

Here is the conclusion reached by the Exponent Report: "Based on the literature review that was conducted for this white paper, there was not any scientifically peer-reviewed information found demonstrating a link between wind turbines and negative health effects." Exponent Report at 44. The report found that while "some people respond negatively to the noise qualities generated by the operation of wind turbines, there is no peer-reviewed, scientific data to support a claim that wind turbines are causing disease or specific health conditions." Exponent Report at 7. The report further noted that the elusive factor of annoyance "could underlie a majority of the health complaints being attributed to wind turbine operations." Id.

But that “[t]he process of being annoyed is a universal response that is not specific to wind turbines.” Exponent Report at 43.

The Exponent evaluation included a review of several of the key studies relied on by Appellants. Compare Appellants’ Brief at 16, 18-19, 22-23, 28-29 (discussing 1999 World Health Organization Guidelines on Community Noise; 2004, 2007 and 2008 Eja Pedersen studies on annoyance from wind turbine noise; 2004 Geoff Leventhall study on low frequency noise; and 2009 Nina Pierpont tract on “wind turbine syndrome”) with Exponent Report at 15, 45-49 (same). For example, the Exponent Report evaluated “Wind Turbine Syndrome: a Report on a Natural Experiment” by Dr. Nina Pierpont, to which Appellants cite extensively, in the context of the scientific rigor ensured by the peer-review process. The Exponent Report found that Dr. Pierpont’s book used “non-traditional references such as newspaper articles and television interviews” and that the book is “being published by a publishing company which will have only one published book (this one) and that consists of an editorial board of which Dr Pierpont and her husband make up two of the members.” Exponent Report at 15. Accordingly, Dr. Pierpont’s book did “not have the weight, standing, or status of peer-reviewed published scientific work.” Id.

Appellants claim that it was unreasonable for the Commissioner to rely on the findings of the Exponent Report (among other sources) because it is an “industry advocacy piece, with participants handpicked by the industry based on their known biases.” Appellants’ Brief at 35. As discussed above, the Exponent report was prepared by an independent consulting firm on behalf of the Wisconsin Public Service Commission, a public regulatory body. Appellants’ attack on the report’s credibility has no basis in fact and makes no sense. Appellants also claim that “most significantly” the Exponent Report fails to “deny or even address” the 1999 WHO

Guidelines on Community Noise. Appellants' Brief at 35. As noted above the Exponent Report did in fact evaluate these very guidelines as part of its review. See Exponent Report at 15 at 38, 49.

The Department also reviewed a May 2010 study titled "The Potential Health Impact of Wind Turbines" that was prepared by the Chief Medical Officer of Health (CMOH) of Ontario, Canada "in response to public health concerns about wind turbines, particularly related to noise." CMOH Report at 3 (attached as Exhibit 13). The CMOH Report was produced by a "technical working group comprised of members from the Ontario Agency for Health Protection and Promotion, the Ministry of Health and Long-Term Care and several Medical Officers of Health in Ontario with the support of the Council of Ontario Medical Officers of Health." Id. The working group "conducted a review of existing scientific evidence on the potential health impact of wind turbines." Id. at 4. The CMOH Report reviewed nearly all of the key studies relied upon by Appellants, including the work of Eja Pedersen and Nina Pierpont, as well as the 2001 and 2009 World Health Organization noise guidelines. Id. at 12-14.

Here is what the medical professionals of the CMOH Report concluded: "While some people living near wind turbines report symptoms such as dizziness, headaches, and sleep disturbance, the scientific evidence to date does not demonstrate a direct causal link between wind turbine noise and adverse health effects." Id. at 10. The CMOH Report further found that "Low frequency sound and infrasound from current generation upwind model turbines are well below the pressure sound levels at which known health effects occur. Further, there is no scientific evidence to date that vibration from low frequency wind turbine noise causes adverse health effects." Id.

In addition, SMW submitted to the Department the Final Report of the Town of Oakfield Wind Energy Review Committee (the “WERC Report,” attached as Exhibit 14), with which the Board is familiar from its review of the Oakfield wind power project. The Oakfield Wind Energy Review Committee, which was composed of municipal officers and planning board members from the Town of Oakfield, analyzed the potential impacts of a proposed wind power project over the course of several months with the assistance of independent expert consultants. See WERC Report at 1-5. The Committee and its consulting acoustical engineer investigated the potential health impacts from wind turbines and arrived at this conclusion: “After a literature review, the Committee did not find any peer-reviewed medical or public health reports or journal articles that concluded sound and noise from modern wind turbines in a well-designed, properly sited, operated and maintained wind energy facility can cause adverse health effects.” Id. at 14. In particular, the Committee reviewed a study titled “Project WINDFARM Perception: Visual and Acoustic Impact of Wind Turbine Farms of Residents,” which was co-authored by Eja Pedersen and upon which Appellants rely heavily. Id. at 13; Appellants’ Brief at 19-20, 25. The Committee concluded that the WINDFARM Perception study found that the only health effect statistically correlated with wind turbine noise is sleep disturbance, but that the correlation “occurs at a statistically significant level above 45 dBA at and outside the home.” Id. at 13. In other words, contrary to Appellants’ mischaracterization of Dr. Petersen’s findings, there was no significant evidence of sleep disturbance or any other health impact from wind turbines as long as noise levels were 45 dBA or less at the exterior of a dwelling. It is important to note that Department regulations require a nighttime sound limit of 45 dBA or less for this wind project, measured 500 feet from dwellings, see Department Order at 6, resulting in an even lower sound levels at the dwelling.

Furthermore, the Commissioner reviewed and identified in its order a study titled “Wind Turbine Sound and Health Effects, an Expert Panel Review.” Department Order at 13. The report (attached as Exhibit 15) was commissioned by the American Wind Energy Association (“AWEA”) and the Canadian Wind Energy Association (CanWEA”), two trade organizations with a mission of promoting the growth of wind power. AWEA/CanWEA Report at 1-1. The authors of the study recognize that “a report funded by an industry association will be subject to charges of bias and conflicts of interest.” Id. Appellants are glad to oblige. Appellants’ Brief at 35. However, the AWEA/CanWEA report was undertaken by a seven-member team of physicians and scientists with decades of relevant professional experience. Id. at Appendix E (panel member biographies). These doctors and scientists with specialized technical expertise conducted a review of peer-reviewed articles addressing the potential health effects of wind turbines and the potential for vibroacoustic disease. Id. at 2-1.

The Commissioner’s order noted that the panel members reached consensus on the following conclusion:

The sounds emitted by wind turbines are not unique. There is no reason to believe, based on the levels and frequencies of the sounds and the panel’s experience with sound exposures in occupational settings, that the sounds from wind turbines could plausibly have direct adverse health consequences.

Department Order at 13.

In short, for the Board to accept Appellants’ argument, it would need to disregard (and adopt a position contrary to) the findings made not only by the Commissioner, but by the Maine Center for Disease Control, the Town of Oakfield, the Wisconsin Public Service Commission, and the Chief Medical Officer of Health of Ontario, among other agencies and organizations. These are public regulatory bodies that engaged acoustical engineers, doctors and other scientists

and spent months reviewing the potential health effects of wind turbines. Appellants have not and cannot put forth any serious reason to doubt the independence or competence of these public entities whose findings support the Department's conclusions.

Accordingly, the administrative record demonstrates that the Department undertook a thorough review of the Project's potential health impacts and correctly concluded that adequate provision for the protection of public health had been made.

C. The DEP Noise Rules are Regulations of General Applicability and Need Not Specifically Reference Wind Power Noise to Be Sufficiently Protective

Appellants claim that the Project's compliance with the sound level limits contained in the Department noise rules is not sufficient to protect against adverse health effects. The crux of Appellants' argument in support of this claim is that the Chapter 375 noise rules were adopted in 1989 and that they make "no reference to noise propagated from industrial grade wind power projects." Appellants' Brief at 26-27. While accurate, this statement is irrelevant to the validity of the Department's review. The Department noise rules are regulations of general applicability that were promulgated to limit noise emissions from numerous types of development. See Basis Statement and Response to Comments for Chapter 375.10, Noise Control Regulations. While Chapter 375(10) does not reference wind power projects, neither does it reference any other specific type of project. The fact that the rule may not have been drafted with a specific noise source in mind does not mean that the rule is invalid with respect to that noise source, as Appellants suggest.

Furthermore, the Department evaluated whether the existing Chapter 375 (10) standards, as applied to wind power projects, were protective of human health, and concluded that the regulations were sufficient. Specifically, in January 2008, the Department evaluated the Chapter 375 noise regulations and concluded they conformed to the best practices of the National

Research Council's 2007 report on the "Environmental Impacts of Wind-Energy Projects" and were appropriate for evaluating sound from wind power turbines. See January 10, 2008 Memorandum from Andrew Fisk to Commissioner Littell Regarding DEP Standards on Noise and Shadow Flicker at Windpower Projects.

Accordingly, Appellants' arguments regarding health impacts provide no basis for the Board to ignore the Department's duly promulgated noise regulations.

D. The Commissioner Could Reasonably Rely on the MCDC in Matters of Public Health

Appellants argue that the Department's reliance on Dr. Mills – the State's chief medical officer – is not valid because Dr. Mills' analysis is "politically tainted." Appellants' Brief at 31. Appellants' purported support for this accusation is a series of emails between Dr. Mills and various department staff. Appellants claim that this correspondence demonstrates that the MCDC and the Department have been engaged in a campaign to suppress evidence of adverse health effects associated with wind energy facilities. To the contrary, the correspondence demonstrates only that the Department and the MCDC were doing their job through inter-agency consultation in their respective areas of expertise.

As with Appellants' claims regarding model accuracy, the Board has already heard and rejected Appellants' contentions regarding purported health effects, specifically with respect to the credibility of the MCDC, in the appeals of the Department permits for the Rollins, Record Hill and Oakfield wind power projects. See Rollins Board Order at 9; Record Hill Board Order at 10-11; Oakfield Board Order at 7-9. Likewise, the Board's findings with respect to public health have been affirmed by the Maine Supreme Court. See Friends of Lincoln Lakes v. Board of Environmental Protection, 2010 ME 18, ¶ 20 ("The Board's inferred determination concerning

the impact of wind energy sound and vibrations on public health is supported by the opinion of the MCDC included in the record, upon which the Board could reasonably rely.”).

Accordingly, the Appellants’ claims regarding health effects are without merit and there is no basis for the Board to disturb the Department’s findings.

III. THE DEPARTMENT PROPERLY DETERMINED THAT THE PROJECT WILL NOT HAVE AN UNREASONABLE ADVERSE IMPACT ON SCENIC CHARACTER OR ON EXISTING USES RELATED TO SCENIC CHARACTER

Appellants’ objections to the methodology for evaluating and the conclusions regarding visual impacts of the Project are unfounded. The applicant prepared a comprehensive analysis of the Project’s visibility and demonstrated that the Project will not have an unreasonable adverse impact on scenic character or existing uses related to scenic character. See January 2010 Visual Impact Assessment Prepared by Terrence J. DeWan & Associates (“VIA”) at 2 (attached as Exhibit 16). The application is supported by user intercept surveys as an additional source of data for evaluating user expectations, thereby strengthening the conclusions regarding scenic impacts. This is the first expedited wind energy development application in Maine to incorporate such surveys. The Department also took the additional step of retaining an outside expert to peer-review the applicant’s work and to assess visual impacts. That expert, Dr. James Palmer, similarly concluded that the Project met the applicable visual impact standard. See June 11, 2010 Review of the Spruce Mountain Wind Project Visual Impact Assessment by James F. Palmer (“Palmer Review”) at 29-32 (attached as Exhibit 17). Nothing cited by Appellants undermines the conclusions of the applicant’s expert, Terry DeWan, or the Department’s expert, Dr. Palmer.

A. The Wind Energy Act Establishes Specific Review Criteria for Expedited Wind Energy Developments

The Legislature determined that wind energy development “is unique in its benefits to and impacts on the natural environment [and] makes a significant contribution to the general welfare of the citizens of the State,” and that, given the realities of constructing grid-scale wind power projects, there are going to be necessary, but acceptable, visual impacts. 35-A M.R.S.A. § 3402 (1). As a result, the Legislature has established a focused scope of review using a defined methodology that applies to expedited wind energy developments, including the SMW project.

Pursuant to the Wind Energy Act, the scope of review for impacts to scenic character is limited to expressly identified “scenic resources of state or national significance,” and seeks to determine whether a proposed project “significantly compromises views” from these resources “such that the development has an unreasonable adverse effect on scenic character or existing uses related to scenic character” of these resources. 35-A M.R.S.A. § 3452 (1). Unlike scenic impact analyses for other types of development, the Wind Energy Act provides a specific set of standards for assessing scenic impacts to the identified resources. Those standards require that the Department consider the significance of the potentially affected scenic resource, the character of the surrounding area, the expectations of the typical viewer, the extent, nature and duration of potentially affected public uses of the scenic resource, and the potential effect of views of the turbines on the public's continued use and enjoyment of the resource. 35-A M.R.S.A. § 3542 (3).

The Wind Energy Act further requires that “[a] finding . . . that the development’s generating facilities are a highly visible feature in the landscape,” is not by itself a “sufficient basis for a determination that the proposed wind development has an unreasonable adverse effect on scenic character or existing uses related to scenic character.” 35-A M.R.S.A. § 3542 (3).

Additionally, there is a presumption that visual impacts to areas beyond three miles from the Project are less significant and do not require a visual impact assessment.

B. The Conclusions Regarding Visual Impacts and Scenic Resources Are Well Supported

The VIA provides a comprehensive analysis of the Project's impacts on scenic resources. Although not required to do so, SMW identified all scenic resources of state or national significance within an eight mile radius of the Project and evaluated visual impacts on those resources with potential views of the Project. VIA at Section 6. For each such resource, the VIA identifies its significance, evaluates public uses and viewer expectations, project impacts and potential effects on public uses. Id. Additionally, viewshed maps showing areas of potential visibility as well as photosimulations to illustrate the Project's visibility on the more sensitive resources were provided. Id. In his review of the VIA, Dr. Palmer concluded that the VIA "clearly addresses the criteria and standards established by the Wind Energy Act." Palmer Review at 32.

Because it can be difficult to quantify the extent of public use of a resource and, importantly, user expectations, particularly with respect to scenic quality, SMW took the additional step of conducting user intercept surveys to address several of the evaluation criteria in the Wind Energy Act. Bald Mountain hosts a public hiking trail and is also the location with the most prominent views of the Project, and therefore was selected for user surveys. It is located approximately 1.4 miles from the closest turbine, and there will be views of all the turbines. The results of the intercept surveys are set forth in the June 2010 Research Report by Market Decisions ("Intercept Surveys Report," attached as Exhibit 18). Importantly, most respondents thought that views of the Project would have no effect on their use and enjoyment of the resources. Intercept Survey Report at 1. The surveys were conducted over a holiday

weekend to maximize the number of respondents, and the methodology was developed with review and input from the Department's visual expert. Id. at 1.

SMW has not suggested that the user surveys are the sole basis for determining whether the applicable review criteria have been met, as suggested by Appellants. Similarly, SMW does not disagree that the number of respondents was limited. (Although that is also an indication of the relatively limited use of the resource.) The survey results, however, constitute an additional piece of information that supports the conclusions reached by two visual experts that the Project's visual impacts do not constitute an unreasonable adverse effect on the scenic character or existing uses related to scenic character of resources of state or national significance in the Project area, and that the visual impacts are consistent with the standards established by the Wind Energy Act.

In addition to the work done by SMW, Dr. Palmer prepared a comprehensive report that evaluated the VIA and independently evaluated the Project's impact on scenic resources. He prepared viewshed maps, visualizations, and identified the number of turbines visible from each of the scenic resources. See generally Palmer Review at Table 2 (turbine visibility), Appendix 1 (viewshed maps), and Appendix 2 (visualizations). For each scenic resource, Dr. Palmer also provided a ranking for each of the seven review criteria (ranging from 0 to 3), and an overall assessment of scenic impact (ranging from a potential of no impact to high impact). Shagg Pond, Little Concord Pond State Park (Bald Mtn.) and Speckled Mountain State Park had an overall impact of Low-Medium, which is consistent with what is allowed under the Wind Energy Act. The remaining resources either had no impact or a low impact. Palmer Review at Table 6.

Finally, many of Appellants' concerns reflect a fundamental misunderstanding of the applicable review criteria. For example, Appellants complain that SMW did not evaluate

visibility on other “locals” and “important locations” such as homes, ponds (including Concord Pond) and peaks that are not identified as significant. Appellants’ Brief, Appendix B at 2, 5-6. In fact, only resources of state or national significance, which are specifically defined by statute, are evaluated. 35-A M.R.S.A. §§ 3451(9) (definition of scenic resources of state or national significance) and 3452(1) (visual impact standard). The VIA and the Palmer Review considered impacts to all scenic resources of state or national significance within eight miles of the Project. Similarly, Appellants claim the Department failed to determine that the Project fits harmoniously into the existing environment. Appellants’ Brief, Appendix B at 6. The Wind Energy Act, however, eliminated that requirement and replaced it with specific criteria and standards, all of which were evaluated and applied in the VIA and the Palmer Review. Appellants also argue that greater consideration should be given to residents and those who have camps on ponds in the area. Appellants’ Brief, Appendix B at 2. Again, under the Wind Energy Act it is the Project’s impact on the public’s use of scenic resources of state or national significance that is relevant, not visibility from camps and private homes. Moreover, the intercept surveys included several people with acknowledged local interests, thereby negating Appellants’ suggestion that local interests were not accounted for in the analysis.⁴ See Palmer Review at 24.

⁴ Appellants’ reliance on selective findings in *The Economic Impacts of Wind Farms on Scottish Tourism*, March 2008, is misplaced. See Appellants’ Brief, Appendix B at 7-8. Most notably, Appellants ignore many of the key findings from that study, which in fact support the conclusion that this project will not have an unreasonable adverse effect on scenic character or existing uses related to scenic character. For example, the findings of intercept surveys of 380 tourists indicated that 75% of the people felt that wind farms had a positive or neutral impact on the landscape. Moreover, the vast majority (93-99%) of people who had seen a wind farm indicated that the experience would not have any effect on their intent to return to the area. See *The Economic Impacts of Wind Farms on Scottish Tourism* at §§ 4.7, 14.3. The study, which in addition to intercept surveys included a literature review, internet surveys of 700 people, and a detailed case study and economic analysis of four areas, concluded that even assuming worst case scenarios, the economic impact of wind farms on tourism was “likely to be very small,” and for three of the four case study areas “would hardly be noticeable.” Id. at Executive Summary § 9.

In summary, the VIA prepared on behalf of the SMW, coupled with user intercept surveys from the location with the greatest potential visual impact and the analysis and conclusions of the Department's independent visual expert demonstrate that the Project will not have an unreasonable adverse impact on scenic character or existing uses related to scenic character. Accordingly, Appellants' arguments regarding visual impacts provide no basis for the Board to set aside the Department's conclusions.

IV. THE DEPARTMENT PROPERLY DETERMINED THAT SMW MADE ADEQUATE PROVISIONS FOR DECOMMISSIONING

Appellants claim that the Wind Energy Act requires the Project's decommissioning plan be fully pre-funded such that the entire cost of decommissioning is escrowed prior to permit issuance. Appellants' Brief at 37-39. However, the Act imposes no such requirement. As Appellants point out, the Act requires the Department and the Land Use Regulation Commission to adopt guidance for submission requirements regarding, among other things, decommissioning plans for wind energy developments. P.L. 2007, ch. 661, Part B, Sec. 13-13(6) (effective April 18, 2008). The Act does not, however, impose any regulatory requirements on applicants related to decommissioning. The Act explicitly does not require the Department to promulgate formal regulations regarding decommissioning plans, suggesting that the Legislature intended to impart to the Department a high degree of flexibility in administering this submission requirement. P.L. 2007, ch. 661, § 13-B.

The Department analyzed the Wind Energy Act and, as directed, adopted submission requirements for decommissioning in the instructions for a revised Site Location of Development Act application. The language related to decommissioning funding states:

4. *Demonstration in the form of a performance bond, surety bond, letter of credit, parental guarantee or other form of financial assurance as may be acceptable to the department that upon the end of the useful life of the wind generation facility the applicant will have the necessary financial assurance in place for 100% of the total*

cost of decommissioning, less salvage value. The applicant may propose securing the necessary financial assurance in phases, as long as the total required financial assurance is in place a minimum of 5 years prior to the expected end of the useful life of the wind generation equipment.

Site Law General Instructions § 29(4).

Thus, the Department specifically allows an applicant to set aside the necessary funding in phases, as long as the decommissioning plan is fully funded five years prior to the expected end of the useful life of wind generation equipment. The Gamesa wind turbines specified for the Project are independently certified to have a working life of at least 20 years. Department Order at 52. The Department order requires SMW to reserve funds in increments starting prior to commencement of operations and continuing until year 13 of the Project, when the decommissioning fund will be fully funded. Id. To account for fluctuations in salvage value, SMW must reassess decommissioning fund requirements in years 6, 12, 18, 20 and every year thereafter, and add to the fund as necessary to ensure full funding. Id.

SMW has particular expertise in the estimation of salvage value. SMW is an affiliate of Jay Cashman, Inc., which is a national heavy construction and demolition company based in Massachusetts. Two of Jay Cashman's affiliate companies are specifically engaged in the reclamation and re-sale of metallic and non-metallic salvage materials, and deal in quantity with these materials on a regular basis. SMW consulted with these affiliates in calculating the salvage value of the Project elements in its estimate of decommissioning costs. See Letter from Andy Novey to Dawn Hallowell, September 14, 2010 (attached as Exhibit 19). SMW also submitted to the Department an itemized estimate of the salvage values of Project materials based on January 2010 rates. Id.

Accordingly, SMW's decommissioning plan complies with Department guidance and the Act, and is more stringent than what has been required of other wind power projects. Finally,

Appellants' objection to a deduction for consideration of salvage value because of perceived market price volatility is addressed by the requirement that SMW reassess salvage value assumptions and update the decommissioning costs accordingly at multiple intervals throughout the life of the Project. See Department Order at 52.

V. THE BOARD SHOULD DENY APPELLANTS' REQUEST FOR A PUBLIC HEARING

Appellants' request for a public hearing should be denied because it is not limited to consideration of evidence that meets the test for supplemental evidence. Alternatively, the request should be denied because Appellants have failed to demonstrate both that there is credible conflicting technical evidence, and that a public hearing would assist the Board in understanding the evidence and making a decision on the appeal. Instead, Appellants simply seek to re-present the same information considered by the Department during its review of the Project, which is not an appropriate basis for the Board to hold a public hearing on an appeal.

A. Appellants Have Not Identified Supplemental Evidence That Would Justify a Public Hearing on This Appeal

When the Legislature enacted the Wind Energy Act, it limited the scope of any public hearing by the Board on an appeal of an expedited wind energy development to consideration of evidence that meets the "supplemental evidence" standard set forth in the Department's rules. Specifically, appeals of expedited wind energy developments are governed by Section 341-D(4)(D), which provides that in an appeal of an expedited wind energy development, the Board *shall* base its decision on (1) the Commissioner's record; and (2) any supplemental evidence, which is evidence that could not have been presented during the initial review process. This is in contrast to appeals of other licensing decisions, in which the Board may base its determination on (1) the Commissioner's record; (2) any supplemental evidence admitted by the Board; and (3) any evidence submitted during any hearing held by the Board. See 38 M.R.S.A. § 341-D(4)(A)

(appeals by aggrieved parties of Commissioner decisions), (B) (appeals initiated by the Board) and (C) (appeals to the Board under other provisions of law); see also 06-096 CMR 2(24)(B)(7). Thus, while the Board may hold a public hearing in an appeal of an expedited wind energy development, the hearing is limited to the consideration of supplemental evidence.

Appellants do not seek a public hearing on evidence that meets the test for supplemental evidence, and therefore the Board should deny the request for a public hearing. Supplemental evidence is evidence that is “relevant and material.” It may be allowed only when (i) the interested party has shown due diligence in bringing it to the licensing process at the earliest possible time, or (ii) it is newly discovered and could not, by the exercise of due diligence, been discovered in time to be presented earlier in the licensing process. 38 M.R.S.A. § 341-D(5)(C); 06-096 CMR 2(24)(B)(5). The purpose of this provision is to ensure certainty and predictability of decisions by requiring that all relevant information be brought forward and considered by the Department during review of the application. Appellants have not made and cannot make any showing that the evidence they seek to introduce in a public hearing was not or could not have been presented to the Department during its lengthy review of SMW’s application. Instead, Appellants request that the Board hold a public hearing to consider testimony regarding the same issues and information that was submitted to and considered by the Commissioner during the licensing process. Accordingly, 38 M.R.S.A. § 341-D(4), which limits public hearings on appeals of expedited wind energy developments to consideration of evidence that meets the test for supplemental evidence, requires that the Board deny Appellants’ request for a public hearing.

Finally, the contrast between appeals of expedited wind energy developments and other licensing decisions is also reflected in the different standards of review. For appeals of licensing decisions other than on expedited wind energy developments, Section 341-D(4)(A) states that:

The board is not bound by the commissioner's findings of fact or conclusions of law but may adopt, modify or reverse findings of fact or conclusions of law established by the commissioner.

This provision, which does not apply to expedited wind energy developments, indicates a *de novo* standard of review, with the Board free to ignore the Commissioner's factual or legal findings and to substitute its judgment for that of the Commissioner. This language is absent from the provision governing Board review of expedited wind energy developments. See 38 M.R.S.A. § 341-D(4)(D).⁵

B. Appellants Have Not Demonstrated that a Public Hearing Would Assist the Board in Understanding the Evidence and Reaching a Decision on the Appeal

Appellants claim that there is "credible conflicting technical information regarding a licensing criteria, namely noise" and therefore "this is the occasion when a hearing *must* be held." Appellants' Brief at 39 (emphasis added). This request is indistinguishable from the requests made by the appellants in the appeals of the Record Hill and Oakfield wind power projects. Appellants propose testimony from the same two witnesses on the same issues, regarding the same information that has been reviewed by the Department and the Board in prior wind power permitting proceedings. At the hearing of the appeal of the Record Hill Wind project, the Board had the opportunity to and did in fact question Appellants' sound expert, Richard James, on the substance of his proposed testimony. The Board properly denied the requests for a public hearing in the Record Hill Wind and Oakfield proceedings and should do the same here.

⁵ That the Legislature intended the Board to serve solely in an appellate capacity is also evidenced by the fact that the Board may not assert primary jurisdiction over any expedited wind energy development, but may act only as an appellate body. See 38 M.R.S.A. § 341-D(2). It is also consistent with the recommendations of the Report of the Governor's Task Force on Wind Power Development, which states that "BEP hearings on appeals would be based on the record assembled by DEP in considering these cases." See Report of the Governor's Task Force on Wind Power Development, February 14, 2008, at 21.

Neither the Appellants nor anyone else requested that the Commissioner hold a public hearing on SMW's application. As discussed above, the Department conducted an open and extensive review of SMW's application, and even extended its review period twice, in part to adequately assess the proposed operation of three of the Project's turbines in NRO.

In typical appeals of Department licensing decisions, the Board has complete discretion whether to hold a public hearing. See 06-096 CMR 2(24)(B)(1) ("The decision to hold a public hearing is discretionary with the Board."). To the extent that the Board adopts the test for holding a public hearing in the context of the initial review of an application, not only must there be credible conflicting technical information, but it must also be "likely that a public hearing will assist the decision maker in understanding the evidence." 06-096 CMR 2(7)(B). As the proposed testimony of Richard James and Michael Nissenbaum demonstrates, Appellants' request for a public hearing is based on a desire to re-present the same information that was already submitted to and considered by the Department and Board in multiple prior reviews of wind power projects.

Credible conflicting technical information is arguably present in most permitting records. If that alone were sufficient to require a public hearing, the Board would need to hold a public hearing on nearly every appeal it heard. Something more is required. As the Board specifically recognized in the Record Hill and Oakfield appeals, a public hearing is warranted on appeal only when it would assist the Board in understanding evidence as it relates to a project's compliance with permitting standards. That is not the case here.

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CONCLUSION

As demonstrated by the foregoing, the Appellants' claims are without merit and SMW respectfully requests that the Board DENY the request for a public hearing and AFFIRM the Department's Order.

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APPENDIX A**DETAILED RESPONSE TO APPELLANTS' CLAIMS REGARDING NOISE EMISSIONS****A. The SMW Sound Modeling Inputs Are Appropriate for Predicting Wind Turbine Noise**

The Appellants claim that SMW's predictive sound model is flawed because it is based on ISO 9613-2 (the "ISO standard"), the International Standards Organization protocol for calculating attenuation of sound during propagation outdoors. Appellants' Brief at 8. On the contrary, the ISO standard is the internationally recognized method for predicting outdoor sound propagation and has been proven to be appropriate for modeling wind turbine sound emissions.

The use of the ISO standard has also been validated by the compliance monitoring at the Stetson Mountain Project, which demonstrates that the model is a conservative predictor of actual sound emissions during operating conditions when wind turbine noise will be most apparent. Stetson Report at Table 7-3. The SMW model methodology, including the use of the ISO standard, has also been reviewed and approved by two independent acoustical engineers retained by the Department and the Town of Oakfield. See EnRad Resubmission Peer-Review, July 23, 2010 at 3; WERC Report at 23.

The Appellants mischaracterize the conclusions of the acoustical literature in the record when they claim that their concerns regarding model accuracy "are reflected in credible scientific literature on the subject." Appellants' Brief at 9. For example, while the study titled "Some Limitations of Ray-Tracing Software for Predicting Community Noise from Industrial Facilities" by Brittain and Hale (Appellants' Exhibit 9) notes that the accuracy of sound levels beyond 1 kilometer is not written into the ISO 9613-2 standard, it does not say that the model cannot be used beyond this distance.

The Appellants also claim that a ground factor of 0.5, indicating mixed hard and soft ground, should not have been used, instead a ground absorption factor of 0, indicating perfectly hard ground, should be used. Appellants' Brief at 10. However, the ISO 9613-2 standard does not have any language to this effect, nor, as Appellants argue, does Appendix A of ANSI-ASA S12.18-1994 (R2009) even mention ISO 9613-2, let alone serve as "additional requirements for ISO-9613-2 models." Appellants' Exhibit 3 at 2. In fact, as demonstrated in the Stetson Report, the model has been successfully used beyond 1 kilometer and shown to give conservative results using a ground absorption factor of 0.5 and a + 5 dB safety factor added to the nominal sound power for each wind turbine. These are the same modeling parameters used by Tetra Tech and approved by EnRad in the Spruce Mountain modeling.

Furthermore, one of the papers cited by the Appellants, Atmospheric Stability Specific Noise Criteria and Noise Predications for Wind Farms, by Kochanowski and Mackenzie, November 2008 (Appellants' Exhibit 13) supports an even less conservative approach than that used in the SMW sound model. The study states, "The accuracy of output from the ISO [9613-2] model is impressive" and that any inaccuracy caused by steep terrain between the sound source and receiver can be "easily accounted for by means of simple correction factors." Appellants' Exhibit 13 at 4 (quoting Bass et al. 1996). The study states that in such cases the incorporation of a + 3 dBA safety factor yields predictive modeling using ISO 9613-2 that has been validated "under practical worst case conditions at distances of up to 1,000 meters from a noise source." *Id.* at 5. In the case of the Spruce Mountain project, a +5 dB correction was used, which is more conservative. In addition, the critical distances to protected areas near the Project are all within 1,000 meters (3,280 feet), consistent with the study area cited above.

Appellants also state that their claims regarding the use of the ISO standard to model wind turbine noise is supported by a study of wind turbine sound emissions at the Maple Ridge wind power facility in Lowville, New York. Appellants' Brief at 10. The study consists of measurements and analysis conducted by Clifford Schneider, a fishery biologist with no apparent training or background as an acoustical engineer. See Appellants' Exhibit 14 (Clifford P. Schneider, "Accuracy of Model Predictions and the Effects of Atmospheric Stability on Wind Turbine Noise at the Maple Ridge Wind Power Facility, Lowville, NY – 2007," April 10, 2008) at 27. Even putting aside Mr. Schneider's lack of expertise as a sound engineer, his study concerns a wind facility, acoustical experts, and a predictive model that are completely unrelated to the sound model and modeling assumptions utilized by SMW. As Appellants acknowledge, a facility's turbine design and geometry, topography, and a host of modeling assumptions, to name just a few variables, have major effects on a model's sound level predictions. Accordingly, Mr. Clifford's study regarding sound predictions and measurements taken at a facility with no apparent relationship to the SMW Project does not provide any credible, factual basis to question SMW's sound level assessment.

In fact, the recommendations made by Mr. Schneider mimic the exact methods utilized by SMW. Mr. Schneider states that the ISO standard has an uncertainty factor of +/-3 dBA. Appellants' Exhibit 14 at 22. Correspondingly, the SMW model adds 3 dBA to predicted sound levels to account for that uncertainty factor. Letter from Tetra Tech, July 15, 2010; EnRad Report at 6; Department Order at 7. In addition, the SMW model incorporates another 2 dBA to account for uncertainty in the manufacturer's specifications for each turbine's sound power output. Id. Mr. Schneider states that modeling software should be validated "with actual measurement data." Appellants' Exhibit 14 at 22. Unlike the sound models discussed by Mr.

Schneider, the SMW modeling assumptions have been calibrated and verified based on the Stetson Report discussed in detail above. See E-mail from Warren Brown to Dawn Hallowell, September 24, 2010. Mr. Schneider also recommends that modeling and compliance measurements should account for worst-case atmospheric conditions where turbine noise is most noticeable. Appellants' Exhibit 14 at 22. The SMW model assumes full sound power production from all turbines operating simultaneously with moderate downwind conditions or, equivalently, a moderate nighttime inversion (i.e. a stable atmosphere) in all directions. Model calculations exclude potential sound attenuation due to foliage. The surfaces of nearby waterbodies were assigned no attenuation due to ground absorption (i.e. a ground absorption factor of 0). General ground absorption was calculated conservatively by assuming a mix of hard and soft ground, despite the rural nature of the Project area. Letter from Tetra Tech, July 15, 2010; Department Order at 7. Furthermore, the Project's sound compliance protocol requires continuous, around-the-clock monitoring for the life of the Project. Department Order at 13-16.

Ironically, the acoustical literature cited by the Appellants as evidence that the SMW model is inappropriate for predicting wind turbine sound emissions in fact supports the methodology and accuracy of the SMW model.

Accordingly, based on all of the foregoing, the use of the ISO standard methodology in the SMW model has been proven to be an accurate and conservative predictor of wind turbine sound emissions, is consistent with international standards, and is appropriate for modeling noise emissions from the Project.

B. Point Source Calculations Are Appropriate for Sound Modeling of Wind Turbines

The Appellants claim that SMW should have used line source rather than point source calculations in the sound modeling for the Project. Appellants' Brief at 11. To the contrary,

point source calculations actually yield more accurate predictive modeling than line source calculations when, as is the case here, individual sound emissions from each point source are known and the additive effects of the combined point sources are taken into account.

First, as discussed above, the accuracy of point source calculations in the SMW model is corroborated by the compliance measurements taken at the Stetson Mountain Project.

Irrespective of the Appellants' theoretical contentions regarding the appropriateness of line source or point source calculations, the predictive accuracy of the SMW model is proven by the measurements taken at the Stetson Wind Project under conditions most favorable to sound propagation. See Stetson Report at Table 7-3. The results of the Stetson monitoring were independently evaluated and accepted by Warren Brown. See E-mail from Warren Brown to Dawn Hallowell, September 24, 2010.

The use of point source methodology in modeling wind turbine noise has been standard industry practice for decades in both North America and Europe. The accepted international standard for determining sound power levels from wind turbines treats wind turbines as point sources. See IEC 61400-11, Wind Turbine Generator Systems – Part 11: Acoustic Noise Measurement Techniques (2002); Tetra Tech Report at 12 (stating that industrial wind turbines are most accurately modeled as point sources, citing Prediction and Assessment of Wind Turbine Noise, Bowdler et al., Acoustics Bulletin, March/April 2009 at 36-37). Consistent with IEC 61400-11, the Project's wind turbines were modeled as point sources. See Tetra Tech Report at 13.

At certain intermediate distances the sound emissions perpendicular to a line of wind turbines can exhibit a "line source effect," meaning that sound will attenuate at a slower rate. As proven by monitoring results, that effect is accounted for in the SMW model. Although each

turbine is modeled as an individual point source, the model reflects the additive effect of sound propagating toward a receiver point from multiple turbines. Accordingly, the SMW model demonstrates less sound attenuation in areas that are perpendicular to a turbine string (4.4 dB decrease per doubling of distance) than in areas that are on the same axis as a turbine string (5.7 dB decrease per doubling of distance dB). See Letter from Tetra Tech to EnRad, July 15, 2010 at Figure 1 (estimated sound level contours).

Furthermore, the Department's independent sound consultant, Warren Brown, has reviewed the Appellants' claim that the turbines should have been modeled as line as opposed to point sources (in this as well as several prior wind power projects) and concluded that "[p]oint source (spherical wave fronts) models appropriately represent sound pressure levels" from a ridge top wind turbine array such as the Project. See letter from Tetra Tech to Warren Brown, July 15, 2010, at Appendix B (EnRad Comments on Oakfield Wind Power Project, December 31, 2009, at 3). As noted by Warren Brown in the Department's permit for the Record Hill Wind Project, "[i]n the case of known sound sources in a linear array, such as wind turbines along a ridge, calculations are the most accurate when based on each turbine as a point source." Record Hill Board Order at 10-11.

The Appellants cite two sources to bolster their claims of "scientific consensus on this issue." The first study, produced for NASA in 1990 by Hubbard and Shepherd, points out that infrasound emissions (i.e. vibrations below 20 Hz that are generally inaudible) from downwind turbines (where the blades are downwind of the tower) exhibit a 3 dB decrease per doubling of distance due to atmospheric refraction at long ranges. Appellants' Exhibit 7 at 23. The Spruce Mountain project will use more modern upwind turbines, which have relatively low infrasound emissions, rendering the infrasound attenuation rate cited by the Appellants nonresponsive to the

Project's potential impacts. In fact, that same NASA study recommends a modeling methodology for a wind turbine array that includes a 6 dB decrease in sound levels per doubling of distance for individual turbines. Appellants' Exhibit 7 at 27. Appellants' second reference, "Applied Acoustic Handbook" only points out that line sources attenuate at 3 dB per doubling of distance when the distance between the source and receiver is less than one third the length of the line source, and beyond that line sources attenuate at 6 dB per doubling of distance. This fact is not in question. Appellants' Exhibit 6.

Accordingly, modeling turbines as point sources is consistent with accepted international standards, is the approach recommended in the NASA study (Appellants' Exhibit 7 at 19, 26-29), and has been verified as accurate by the Stetson compliance monitoring. The Appellants' allegation that the use of point source analysis in the SMW sound model under-predicts the Project's sound impacts is a disproved theory not supported by the evidence, and is without merit.

C. The Appellants' Claims Regarding SDRS Are without Merit

The Appellants claim incorrectly that the SMW did not properly account for potential Short Duration Repetitive Sounds ("SDRS") in its assessment of the Project's compliance with noise limits. Appellants' Brief at 12-13.

SDRS are defined as a sequence of sound events, each clearly discernable, that cause an increase of 6 dBA or more in the sound level observed before and after the event. See 06-096 CMR Chapter 375, § 10(G)(19). Because they can be annoying, there is a 5 dBA "penalty" that applies when SDRS occur. Specifically, 5 dBA is added to the observed levels of the SDRS for the time that SDRS occur for purposes of determining compliance with the applicable standards. Id. § 10(C)(1)(e).

Once again, the Stetson compliance monitoring demonstrates that the Appellants' claims are without merit. As stated in the Department's Order approving the Oakfield Wind Power Project:

EnRad commented that its experience with the review of the compliance monitoring data from the Stetson Wind Project, a project previously developed by an affiliate of the applicant which is now in operation, was that Short Duration Repetitive Sound was not observed using a rigorous protocol under very favorable geometric and atmospheric conditions.

Oakfield DEP Order at 11. In other words, the measurements at the Stetson facility, which operates a similar design of wind turbine as that proposed for the SMW Project, show that SDRS was not an issue even under worst-case conditions.

In addition, to evaluate the site specific conditions that could lead to SDRS, the applicant retained an independent expert, Kenneth Kaliski, who is Board Certified through the Institute of Noise Control Engineering and the author of several peer-reviewed papers on wind turbine acoustics. See Kenneth Kaliski Resume (submitted to Dawn Hallowell on September 7, 2010, and attached as Exhibit 20). Mr. Kaliski evaluated natural turbulence intensity and wind shear from the Project's meteorological tower and found that, "While it is not possible, at this time, to calculate the extent of SDRS at Spruce Mountain, the analysis shown above indicates that the site characteristics are not conducive to common occurrences of SDRS." Memorandum from Kenneth Kaliski to Todd Presson, July 14, 2010, at 3.

Nonetheless, in recognition of the potential for SDRS to occur and to ensure that applicable sound limits are met during all operating conditions, the Department, in consultation with EnRad, has developed a stringent sound compliance assessment plan with which SMW must comply. See Department Order at 13-15. The compliance protocol requires SMW to continuously collect sound compliance data "24 hours per day, 7 days per week during all

periods when the facility is in operation beginning on the first day of operation and continuing until the decommissioning of the facility.” Id. at 15. In the unlikely event that the Project exceeds applicable noise limits due to SDRS or any other reason, SMW is required to “take short term action immediately to adjust operations to reduce sound output to acceptable levels under Chapter 375 (10).” Id. In the event of non-compliance, SMW is further required to submit for Department review and approval a revised operation protocol to ensure that the Project will be in compliance at all protected locations. Id. at 15-16.

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