

**STATE OF VERMONT
PUBLIC UTILITIES COMMISSION**

Amended Petition of Deerfield Wind, LLC, for a certificate of public good authorizing it to construct and operate a 15-turbine, 30 MW wind generation facility, and associated transmission and interconnection facilities, on approximately 80 acres in the Green Mountain National Forest, located in Searsburg and Readsboro, Vermont, with 7 turbines to be placed on the east side of Route 8 on the same ridgeline as the existing GMP Searsburg wind facility (Eastern Project Area), and 8 turbines along the ridgeline to the west of Route 8 in the northwesterly orientation (Western Project Area)	PUC Docket N. 7250
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**WINDACTION-SHEA JOINT COMMENTS IN RESPONSE TO
FALL 2020 SOUND MONITORING CONDUCTED AT SITE C**

NOW COMES the Windaction Group and Tom Shea, *pro se* parties to Docket 7250, who, in accordance with the January 12, 2021 order of the Vermont Public Utilities Commission (“Commission”), respectfully submit these comments pertaining to the Deerfield wind energy facility (“Project”) sound monitoring conducted by the Department of Public Service (“Department”) through its expert Cross Spectrum Acoustics (“CSA”).

In its June 26, 2020 order, the Commission required an additional round of sound testing at Site C in order to determine whether further outside-to-inside noise reduction (‘OINR’) testing was warranted at Mr. Shea’s property. To resolve a dispute between Deerfield and the Department involving the applicable ANSI S12.9 standard, Part 2 or Part 3, the Commission’s order reaffirmed its January 9, 2020 finding that “results will be reported applying the Part 2 Standard and the Part 3 Standard for comparison.”¹ The Commission also ordered CSA to provide an “explanation of what uncertainty factor, if any, is applied to the data.”²

CSA conducted Fall 2020 monitoring during the period from October 20 to November 6, 2020 at Site C. In the 17-day period, approximately 406 hours of raw sound data were collected. Twenty-four controlled turbine-off events, or shutdowns, were scheduled during the monitoring period of which 6

¹ *Order Finding Project in Compliance with Amended CPG and Ordering Deerfield to Select Next Step in Resolving OINR Testing Issue*, January 9, 2020 at 11

² *Order Regarding Fall 2020 Sound Monitoring*, June 26, 2020 at 8

produced data consistent with the Project sound monitoring protocol (“Protocol”).³ The data also met the Commission’s guidance that each shutdown produce “at least one hour of valid data, including at least 30 minutes associated with a single shutdown.”⁴

CSA’s data analysis under the Part 2 Standard involved combining “all valid sound level data for qualifying “turbine-off” intervals and adjacent qualifying “turbine-on” intervals associated with different shutdowns, including over multiple days.” CSA remove contaminating events and further filtered the data based on weather conditions to arrive at a single Leq sound level. Under the Part 3 Standard, CSA computed individual Leq values for each qualifying one-hour “turbine-on” period. Six separate Leq sound levels were determined corresponding to each of the valid shutdown events.⁵

OINR testing would be required at Site C if post-construction sound monitoring found Project sound levels of 40 dBA(Leq)(1 hour) or higher.⁶ Data collected and processed at Site C under the Part 3 Standard showed Leq values met the conditions for OINR testing in five of the six shutdown events.⁷

I. CSA misapplied the ANSI S12.9 Part 2 Standard

CSA followed the Commission’s guidance in applying the Part 2 Standard, but it’s clear from CSA’s report that the Part 2 Standard is entirely misapplied. The Part 2 Standard is designed to capture *long-term wide-area* average sound levels outdoors within an environment. The Fall 2020 monitoring had a much more targeted requirement i.e. to show compliance with a noise regulation⁸ during discreet, short-term monitoring intervals where only one site, Site C, was considered.

In attempting to show the appropriateness of Part 2, CSA cites from select portions of the Standard while omitting others. For example, CSA seems to claim that a “Class C” survey under Part 2 is akin to the Fall 2020 monitoring since Class C measurements are “intended to define an upper limit to the environmental sound levels; the highest and worst case.”⁹

However, CSA omits that Part 2 “Class C” measurements are to be made in *one day*, not multiple days, and that the “worst case” conditions are met when there is a *well-developed ground-based temperature inversion*.¹⁰ CSA provides no data that show whether, where, or when a ground-based inversion was present during sound monitoring at Site C. CSA has no basis within the Part 2 Standard for

³ *Corrected Final Sound Monitoring Protocol*, Docket No. 7250, filed January 16, 2018.

⁴ *Order Regarding Fall 2020 Sound Monitoring*, June 26, 2020 at 8

⁵ *Deerfield Wind Fall 2020 Sound Monitoring Compliance Report*, January 11, 2021 at 17

⁶ Protocol § 2.5

⁷ *Deerfield Wind Fall 2020 Sound Monitoring Compliance Report*, January 11, 2021 at 24

⁸ Part 3 § 7.3.2.2

⁹ Part 2 § 9.7

¹⁰ *Id*

claiming that its “Leq sound level of 39 dBA may be interpreted as the highest or worst-case sound level that would be expected under typical conditions.” CSA’s use of the phrase “typical conditions” is also contrived. “Typical conditions” are not the same as “highest and worst case.” There is no reference to “typical conditions” in the Part 2 Standard pertaining to “Class C” measurements.

CSA’s claim that the Part 2 Standard does not provide guidance for estimating uncertainty factors is also not correct. Section 9.3 of the Part 2 Standard shows that for “Class C” measurements, the uncertainty (or accuracy) is based on a day-night average sound level or Leq (24-hour) with a 10 dB penalty applied at night.¹¹ The fact that uncertainty factors under Part 2 are not defined using the Leq metric is further evidence that the Part 2 Standard is not the correct standard to follow. CSA’s assertion that “the Fall 2020 measurements were similar to an ANSI S12.9 Part 2 “Class C” measurement” is without basis. The only apparent similarity is that the Fall 2020 monitoring was unattended.

II. Part 3 Standard is the appropriate standard; Condition met for OINR testing at Site C

The Part 3 Standard has direct application to the monitoring conducted at Site C. Part 3 provides guidance for conducting short-term, time-average environmental sound measurements for many purposes including demonstrating compliance with a regulation. In this case, the ‘regulation’ is whether Site C monitoring will trigger OINR testing. Sound monitoring under Part 3 requires an observer be present but the Commission and others agreed that audio recordings could serve as a human proxy during the Fall 2020 monitoring.

Under Part 3, CSA computed individual Leq sound levels during each of the six qualified shutdown periods. Doing so ensured a more accurate representation of background-only and background-with turbine sound levels at each shutdown interval. The alternative would be for these data to be further processed into a single Leq thereby introducing additional uncertainties into the data. Part 3 provides a description of the uncertainty factor to apply which directly matches the monitoring method followed by CSA. Specifically, section 7.3.3(b) of the standard states that a 1.5 dB correction is applied if background Leq measurements are taken within the hour before or the hour after sound measurements of the source (wind turbines) and that the same instruments are used.

¹¹ For a wind turbine that operates 24-hours a day with a 39 dBA Leq (24-hr) the Ldn at night would be 44 dBA.

III. *Fall 2020 monitoring shows the condition has been met for OINR testing at Site C*

OINR testing would be required at Site C if post-construction sound monitoring shows Project sound levels of 40 dBA(Leq)(1 hour) or higher.¹² After CSA applied the appropriate uncertainty factor to the individual Leq sound levels, 5 of the 6 Leq levels at Site C met the criteria for triggering OINR testing.

IV. *Conclusion and Recommendation*

Despite the obvious applicability of the Part 3 Standard to the Fall 2020 monitoring, CSA insists that (a) the Protocol does not refer to ANSI S12.9 nor does it require its use, and (b) that portions of ANSI S12.9 may conflict with methodology included in the Protocol and therefore any guidance from the standard should be for informational purposes only. First, the Standard is designed to ensure proper acoustical methods are followed when conducting noise compliance testing as was done at Site C. The Protocol was never intended to replace the ANSI standard nor should it be used as an excuse to not follow appropriate methods of data collection and processing. RSG's Kaliski, who authored the Protocol, admits the applicable noise testing standard is ANSI S12.9 Part 3.¹³

While ANSI 12.9 is not referenced in the Protocol, the Commission ordered CSA to follow Parts 2 and 3 of the Standard. CSA's claim that ANSI S12.9 may "conflict with methodology included in the Protocol" without providing examples is a baseless distraction. Finally, to claim that following the applicable ANSI S12.9 standard is nothing more than an academic exercise fails to understand the fundamental purpose of sound monitoring at the Project i.e. to secure the most accurate, reliable, and repeatable results in order for the Commission to make informed decisions. The results of sound monitoring at the Project have real consequences both for Deerfield Wind LLC and the residents who live adjacent to the Project.

WHEREFORE, in view of the foregoing, Windaction-Shea respectfully request that the Commission:

1. Find that the Part 3 Standard with 1.5 dB uncertainty factor applied is the correct method for conducting sound monitoring at Site C;
2. Find that the results of the sound monitoring at Site C met the requirements for further OINR testing at Site C;
3. Establish a schedule for the parties to this proceeding to provide input on the OINR testing to be conducted.

¹² Protocol § 2.5

¹³ *Deerfield Wind, LLC's Response To Shea Request For OINR Testing And Department Of Public Service Request For Modification To Commission-Approved Sound Monitoring Protocol*, Docket No. 7250, filed April 14, 2019.

4. Require that OINR testing be conducted at Mr. Shea's residence and that there be no further delay.

Dated this day of March 15, 2021

A handwritten signature in black ink that reads "Tom Shea". The signature is written in a cursive, slightly slanted style.

Tom Shea, Searsburg

A handwritten signature in black ink. It is a stylized, cursive signature that appears to read "Lisa Linowes".

Lisa Linowes, The Windaction Group

cc: Parties to Docket 7250