200730 SEC Martin

30 July 2020

Ms. Dianne Martin, Chair
NH Site Evaluation Committee

Dear Ms. Martin:

Yesterday, during the hearings on the Antrim Wind issue, I sent you an e-mail, following the rules on the hearing web site. You never responded, so I am taking this opportunity to repeat my request. My concern was a serious issue, maybe the most serious issue at the hearings. It is the heart of the reason for the hearing in the first place.

There is a noise problem in Antrim, due to the AWE wind farm. Whether it stems from a violation of the approval process in the first place, or is a systemic problem with AWE, is an open question. But whichever it is, it hinges on the measurement of turbine noise. AWE, with apparent SEC approval, has tasked an "expert" to determine these noise levels, and compare them to the agreed not-to-exceed noise levels that the SEC approved, and to which AWE agreed.

Measuring the actual sound should be a straightforward process. However, this has been complicated by a disagreement over the details of a simple question, a legal question. Did the AWE expert follow the SEC rules in taking, and analyzing, his measurements?

There were many distractions and misdirections, but Commissioner Duprey tried very hard to get attorney Iacopino to answer, or even to agree, that this was THE question. Other members either did not understand Commissioner Duprey's point, or were afraid she might be onto something. She was!

There are many errors, serious errors, in the way the AWE expert chose to collect his data, and to analyze (or not analyze) it.

The expert averaged all his sound data over one hour. But an AVERAGE means the sounds will be above (and below) this average half the time. A quick inspection of the figure on p21 of his report shows that the AVERAGE sound levels are made up of sounds that are 3-4 dB either side of that average. That means that the average (p18) turbine sounds of 36 dB (Location 1), 37 dB (Location2), and 38 dB (Location 3), will violate the agreed levels up to 30% of the time.

On p19, #5 of the Acentech report, ANSI S12.9-2013 says the sound measurements should be made under "downwind" conditions. That might be a good thought in open country, but in areas of substantial topography, of which Tuttle Hill is the "poster boy", the maximum sounds will not necessarily be GENERATED, nor BROADCAST, in "downwind" conditions. Eliminating all but "downwinds" will necessarily OMIT many loud sounds.

On p19, #6 of the AWE/Acentech report, the discussion of eliminating sounds when there is a variance of 3 decibels is also questionable, especially since there will be significant speed and sound variations when the winds are changing. The turbulence resulting from these changes will enhance both the generated sounds, and their variability. Eliminating such sounds is guaranteed to "exclude" many loud sounds.

It is peculiar that the report refers constantly to the wind data at the sound-monitoring stations. But it is the winds at HUB height that determine the sounds being generated, NOT the winds at the monitoring stations. Why weren't these HUB height winds analyzed initially to determine the most likely weather situations to spread the sound around the neighborhood. Such an analysis would have provided solid technical grounds on which to determine the weather conditions under which this facility would exceed its required sound levels. The fundamental problems cited at location 2 are just one example of the need for such a preliminary study.

Putting on my meteorologist hat, I found another strange example. The period of this study, 4 – 18 March 2020, was supposed to be the WINTER case (winter ending on 21 March). But the temperatures during this fortnight were close to record warmth for March, much more like spring in April. In addition, the winds during the fortnight were almost always from the westerly direction. Why was this fortnight selected?

In summary, the hourly averaging, the elimination of "changeable" data, and the arbitrary selection of a fortnight of extreme weather, all speak to the difficulties produced because AWE/Acentech skipped the most obvious of all studies ….. determining the weather conditions which produce and broadcast the loudest sounds, and the areas most affected. Section 7.0, paragraph 2, is the best testimony to the contortions required by AWE/Acentech, to squeeze the AWE data to get a predetermined result.

The whole point of the hearing yesterday was to get a straightforward answer from the Committee. Did the AWE expert follow the SEC rules in taking and analyzing his measurements?

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cc: Duprey
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Goodman
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Vose
Ward

200729 SEC AWE hearing My presentation 29 July 2020
(The Committee has copies of my remarks)
My name is Dr. Fred Ward. I am a professional meteorologist, with many years experience.

Everybody (including AWE) agrees the wind generates the noise of the turbines, more wind equals more noise, and the wind direction determines where, and how far, it goes. No competent consultant or company would ever conduct an analysis of the neighborhood noise without ACQUIRING, ANALYZING and PRESENTING their sound data as a function of the recorded hilltop wind data. Any expert, or any company which does so without referencing the differences in their results as a function of the different wind speeds and directions is unqualified to present their results. The results presented to date include no such information, and show that this fundamental technical issue has not been addressed.

Despite many requests over a decade to get the wind data from the appellant's meteorological tower, I have never been able to obtain any. Those fundamental data were declared unavailable by the SEC during the hearings. These data were required during the SEC approval process, these data were required during the appeals process, and now that the problem has come home to roost, these data are ABSOLUTELY required to determine whether AWE has met its commitments. That we are now without that data means we, AND YOU, are flying blind.

Without these data, there was/is no way to determine (during the hearings) the projected noise levels to be encountered after construction. There was/is no way to determine the best location(s) for any the sound monitoring site(s) after construction. Worse, there will be no way, to determine which turbines are exceeding the required sound levels in the future, and could/should be shut down in high winds or other meteorological situations.

The post-construction sound data supplied to date are meaningless, and their so-called analysis is a joke. The reluctance of AWE to use the wind data from their meteorological tower seems to be an admission that they knew prior to construction, and now know after construction, that the turbines exceed the agreed noise levels, both significantly and often.

No reputable scientist, nor any technically qualified company would even think about doing the analyses so far, and as proposed, without having, and USING, the wind speed and wind direction data from the meteorological tower. And the differing effects of the wind direction and wind speed would be a prominent part of their results. Why are they MIA??

I can supply a written copy of these remarks if desired.

Thank you.

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