

BEFORE THE OHIO POWER SITING BOARD

In the Matter of the Application of)	
Champaign Wind LLC, for a Certificate)	
to Construct a Wind-Powered Electric)	Case No. 12-0160-EL-BGN
Generating Facility in Champaign)	
County, Ohio)	

**CHAMPAIGN WIND LLC's MEMORANDUM CONTRA
TO THE APPLICATION FOR REHEARING BY JULIA JOHNSON, ROBERT
MCCONNELL, DIANE MCCONNELL AND UNION NEIGHBORS UNITED**

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TABLE OF CONTENTS

	Page
I. INTRODUCTION.....	1
II. ARGUMENT	1
A. The Application Was Not an Amendment Application and Nothing in the Board’s Order Implies the Contrary	1
B. The Record Establishes That the Facility Represents the Minimum Adverse Environmental Impact and That the Facility Will Serve the Public Interest, Convenience and Necessity	2
C. The Record Supports the Board’s Finding That the Buckeye II Wind Farm Represents the Minimum Adverse Environmental Impact	7
1. The record does not support a finding that UNU’s requested setbacks will prevent discomfort, annoyance, sleep deprivation and health disorders.....	7
2. The Board’s denial of UNU’s motion to reopen the record was appropriate	36
3. The record does not support imposing noise limits at property lines	38
4. The record does not support a finding that the visual impacts of the facility will degrade the surrounding area	40
5. The record does not support a finding that the setbacks are insufficient to protect against blade throws	41
6. The record does not support a finding that the setbacks are insufficient to protect against ice throw	47
7. The record supports a finding that shadow flicker from the facility will not cause adverse impacts	50
E. The Record Establishes That the Facility Will Comply With Chapter 4561.32, Revised Code.....	51
F. The Record Supports the Board’s Finding That Concerns With Property Values Do Not Render the Project Contrary to the Public Interest, Convenience and Necessity.....	52
G. The Administrative Law Judges’ Procedural Rulings During Discovery and at the Hearing Were Appropriate.....	55

1.	The ALJs properly denied UNU's motion to compel the production of Document Request 44.....	56
2.	The ALJs properly precluded testimony and admission of a copy of a draft excerpt from the Staff Report	56
3.	The ALJs properly denied UNU's motion to compel the production of Document Request 74.....	57
4.	UNU's request to reopen discovery and the hearing should be rejected	58
5.	The subpoenas to third parties related to noise limits were properly quashed	58
6.	UNU's third-party subpoenas related to shadow flicker information were properly quashed.....	59
7.	The ALJs properly precluded UNU's attempts to present evidence about blade throw incidents	59
8.	The Record supports the Board's decision to affirm the ALJs admittance of the shadow flicker report contained in the application.....	60
9.	The ALJs properly admitted the testimony of Michael Speerschneider and Hugh Crowell.....	62
H.	The Record Does Not Support UNU's Proposed Condition Revisions	64
III.	CONCLUSION	66
	CERTIFICATE OF SERVICE	67

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I. INTRODUCTION

Julia Johnson, Robert McConnell, Diane McConnell and Union Neighbors United (collectively, “UNU”) seek rehearing on a multitude of issues they contested in their initial brief. UNU’s application for rehearing fails to raise any new issues, with the exception of a new claim that the Board improperly relied on Ohio’s alternative energy portfolio standards when approving the application. The Board should reject UNU’s arguments. The Board thoroughly considered the evidence when issuing its May 28, 2013 Opinion, Order and Certificate (the “Certificate”), and rejected the same arguments that UNU now makes to the Board in its application for rehearing. UNU has no basis to dispute the Board’s decision given the evidence in the record that supports the issuance of the Certificate. What UNU does dispute and will continue to dispute, is the presence of a commercial wind farm in Champaign County which conflicts with UNU’s view of what activities should occur within the County. That is not a sufficient reason to overturn the issuance of the Certificate.

II. ARGUMENT

A. The Application Was Not an Amendment Application and Nothing in the Board’s Order Implies the Contrary.

UNU asks the Board to clarify that its Certificate approving the Buckeye II Wind Farm is not an amendment of the Buckeye I Wind Farm certificate. (UNU at 3.) UNU cites to no

evidence in the record, yet states that the Board's Certificate suggests that the Certificate is an amendment of the Buckeye I Wind Farm. (*Id.*) Nothing in the Certificate suggests the Certificate is an amendment of the Buckeye I Wind Farm certificate. The citations provided by UNU to the Board's Certificate relate to a discussion of the Board's procedural process for certificates and applications to certificates. (Certificate at 5-6; 99.) Notably, the Board made it very clear at page 2 of the Certificate that Champaign Wind was applying for a certificate of environmental compatibility and public need for the construction of a wind generation facility. (Certificate at 2.) The Board also noted at page 3 of the Certificate that the Buckeye II Wind Farm was adjacent to the Buckeye I Wind Farm. (*Id.* at 3.) The record shows that the application in the matter at bar is not an amendment application, and nothing in the Board's Certificate implies the contrary. UNU has no basis for its request for clarification.

B. The Record Establishes That the Facility Represents the Minimum Adverse Environmental Impact and That the Facility Will Serve the Public Interest, Convenience and Necessity.

UNU argues that the Buckeye II Wind Farm does not serve the public interest, convenience and necessity because (1) Champaign Wind allegedly failed to produce witnesses with actual knowledge of the project's benefits; (2) any benefits are negligible; (3) that any socioeconomic deterrents far outweigh the project's benefits; and (4) Section 4928.64(B) is unconstitutional and therefore the Board cannot find that the facility serves the public interest, convenience and necessity. (UNU at 5.) The record does not support UNU's arguments.

As an initial point, UNU again claims the Camiros study included in the application was inadmissible. UNU argues that the application, Exhibit G and all statements elsewhere in the application regarding the socioeconomic benefits of the proposed facility were improperly admitted because no one from Camiros, Champaign Wind's consultant who prepared Exhibit G, testified. Camiros personnel were not required to testify in order for those portions of the

application to be admissible. Company witness Speerschneider certainly established the grounds for admitting the application, including Exhibit G, testifying on taxes and job creation. (*See e.g.* TR 35-36;65-66; 73-74.) No reversal of the Board's affirmation of the ALJs' rulings is warranted.

The application in this proceeding coupled with Mr. Speerschneider's testimony supports the Board's decision and refutes UNU's claim that no Champaign Wind witnesses testified about the economic benefits of the project. An estimated 86 workers will be required to construct the project, with an additional 512 jobs created in the surrounding regions as a result of the construction. (Co. Ex. 1, Exhibit G at 13.) Regardless what UNU claims, the fact remains that a significant number of workers will be employed during the construction phase of the project. The estimated local benefit for construction jobs alone is estimated to be \$14,500,000 while the remaining employment opportunities lead to over \$60,000,000 in local benefits during the construction phase. (*Id.*)

Lease payments to landowners are estimated to total approximately \$950,000 a year. (*Id.*) UNU questions the lease payments in its application for rehearing, but fails to explain why it did not question Mr. Speerschneider about the lease payments during cross-examination. UNU also ignores the testimony from Ohio Farm Bureau witness Dale Arnold who testified that "harvesting the wind provides hosting farms with a significant source of revenue." (OFBF Ex. 1, A.8.) He also noted this is of "great importance in Ohio where the major threat to prime farm land over the past few decades has been the conversion of agricultural ground to industrial development or urban sprawl." (*Id.*) He also testified that "[b]ased on my experience with this industry, I estimate a farmer can earn approximately \$4,000 to \$7,000 per turbine per year." (*Id.* at A.11.)

Wages for the facility's estimated 7 full-time workers will be approximately \$400,000 per year. (Co. Ex. 1 at 139.) The facility would also result in an increase in local tax revenues in an amount between \$840,000 to \$1,260,000 based on a 140 MW installation. (Co. Ex. 1 at 140.) UNU quibbles that the low end of the facility's capacity could be 89 megawatts. (UNU at 9-10.) But even at that level, the local tax revenues under the PILOT Program will range between \$534,000 to \$801,000. All of these facts support the Board's finding that the facility will have a positive impact on the local economy of not just Champaign County, but surrounding counties as well.

UNU claims that these benefits are a mirage. (UNU at 8.) That is hard to believe given that construction workers will be necessary to build the turbines and that operators will be necessary to run the turbines. The City of Urbana's mayor also acknowledged that local concrete and cement suppliers if engaged in the facility construction would contribute income tax revenues. (TR 1989.) UNU also claims that Champaign Wind has failed to make a commitment to purchase even the smallest of components locally. (UNU at 9.) UNU misses the testimony of Robert Townsend at the public hearing when he testified that EverPower, Champaign Wind's parent company, is currently purchasing lights for turbines from Urbana's Hughey and Phillips and that his employer is making the reflectors for the lights. (TR 20-21.)

UNU also ignores the fact that the payment of taxes, in some amount, is guaranteed for this facility. Whether paid through the Senate Bill 232 PILOT Program or through the normal personal property tax for utilities, Champaign Wind will be required to pay taxes for the facility if it is constructed. UNU cannot claim that the project will not have a beneficial impact on Champaign County and surrounding counties. Under the PILOT program alone, the facility would result in an increase in local tax revenues in an amount between \$840,000 to \$1,260,000

based on a 140 MW installation. (Co. Ex. 1 at 140.) As noted above, UNU claims this figure is inflated, but even at 89 MW, the local tax revenues under the PILOT Program will range between \$534,000 to \$801,000. These facts support the Board's finding that the facility will have a positive impact on the local economy of not just Champaign County, but surrounding counties as well.

UNU also claims that the facility will "cause widespread damage to all of eastern Champaign County." (UNU at 10.) UNU provides no record support for this claim. It cannot because the record shows the opposite. For example, Dale Arnold of the Ohio Farm Bureau testified that the project would help preserve Ohio farmland and that properly constructed wind towers will not hamper agricultural development. (OFBG Ex. 1 at A.8.) He also noted that "[d]ense housing, commercial strip malls and industrial development are not compatible with continued agriculture use." (*Id.* at A. 8.) Likewise, other witnesses such as Dr. Mundt discredited UNU's claims that the facility will "bombard its neighbors with infrasound waves that cause nausea and other sickness, cast flashing shadows across yards and into windows, propel pieces of fiberglass blades and ice into the countryside, destroy property values, kill bats and birds, and destroy the visual landscape to the degree that poorly sited wind turbines do." (UNU at 11.) In short, the premise for UNU's argument on this rehearing request relies on the very issues, such as health, noise and property values, that the record in this proceeding refutes.

UNU also claims that the facility will damage the public roads in eastern Champaign County. (UNU at 11.) UNU relies on the testimony of Milo Schaffner, a Hoaglin Township trustee from Van Wert County, while at the same time trying to downplay the testimony of the Van Wert County Engineer. (*Id.*) The County Engineer's testimony is at odds with UNU's claims, as he testified that roads were in better condition today than prior to construction of the

Blue Creek wind farm and that the road bond for that project was not called upon. (TR 2317; 2320-2321.) As with UNU's other arguments, the record does not support UNU's claim that roads will be left in an inferior condition after the facility is constructed.

UNU also argues that Champaign Wind should have considered what UNU believes to be socioeconomic detriments as a result of the facility's construction. For example, UNU claims that jobs at traditional power plants may be eliminated. (UNU at 12.) UNU also claims that the project will interfere with air flights at Grimes Field, including the hot air balloon festival, the airport restaurant and other airport activities. (UNU at 13.) UNU cites to loss of productivity and medical expenses as a result of turbine operation. (UNU at 13.) UNU also claims Champaign Wind has the burden of proof to provide any negative economic impacts of the project. That is simply not the case. Champaign Wind had the burden to show that the facility serves the public interest, convenience and necessity, which it did through its application and witness testimony. UNU also ignores the fact that the Buckeye I Wind Farm has already been approved, and is located closer to Grimes Field. To the extent UNU believes economic detriments exist, it fails to explain how the Buckeye II Wind Farm will add to any economic detriments.

UNU also argues that the Board improperly cited to the Ohio alternative energy portfolio standards as a basis for approving the Certificate. (UNU at 14-15.) UNU claims that the Ohio alternative energy portfolio standard is unconstitutional, and cites to a June 2013 Seventh Circuit Court of Appeals case that found that a Michigan statute discriminated against out-of-state energy sources. (*Id.*)

Ohio's alternative energy portfolio standards, however, remain in place and the Board justifiably pointed to the standards as a reason to support its finding that the project is in the

public interest, convenience and necessity. The Board also noted that it had taken into account that the “renewable energy generation by the proposed facility will benefit the environment and consumers.” (Certificate at 72.) The Board also noted that the proposed project will “assist Ohio’s electric utilities in meeting their renewable energy benchmarks required under statute.” (*Id.*) On this point, regardless of any future legal rulings on the constitutionality of Ohio’s alternative energy portfolio standards, the fact remains that the standards require a certain amount of generation provided in this state to be from renewable sources, such as the Buckeye II Wind Farm.

UNU concludes by arguing that the Board offers no support other than the “inadmissible Camiros report” for its finding that the facility will serve the public interest, convenience and necessity. Yet, the record contains witness testimony on tax benefits, jobs, agricultural preservation and the many benefits the project will provide to residents of Champaign County. Moreover, the Board summarized its findings on the public interest, convenience and necessity starting at page 72 of the Certificate, providing a broad rationale for its finding. (Certificate 72-73.) Contrary to UNU’s claim, the Board did not rely on one single fact to support its findings. The Board should reject UNU’s application for rehearing on the above discussed points.

C. The Record Supports the Board’s Finding That the Buckeye II Wind Farm Represents the Minimum Adverse Environmental Impact.

1. The record does not support a finding that UNU’s requested setbacks will prevent discomfort, annoyance, sleep deprivation and health disorders.

- a. *Audible sound from turbines will be at acceptable levels*

UNU repeats an argument it made in its initial brief in this proceeding and in the Buckeye I proceeding, that turbine operational sound will lead to widespread discomfort, annoyance and sleep deprivation. (*See In re Buckeye Wind, LLC*, Case No. 08-666-EL-BGN, Opinion, Order, and Cert., Mar. 22, 2010 at 58.) Although the Board rejected this claim in the Buckeye I

proceeding, UNU tries again, claiming that the “levels of audible turbine noise from CW’s project as designed will cause harmful annoyance and sleep disturbance in the community.” (UNU at 19.)

UNU’s claim has no merit. Mr. Hessler repeatedly testified that a project with mean sound levels under 45 dBA would result in few complaints based on his experience. Specifically, he stated that:

...a mean sound level of 45 dBA is a fair and reasonable regulatory noise limit for wind projects in rural areas. Our study of operating projects suggests that the rate of complaints for a project sound level between 40 and 45 dBA is about 2% of the total population (i.e. those within 2,000 ft. of a turbine), meaning, inversely, that the apparent acceptance rate is on the order of 98%.

(Co. Ex. 11 at 7.) As applied to the Champaign Wind facility and using UNU’s count of 453 unknown structures and residences within a half mile (2,640 feet) of turbines, there would be approximately 9 reported complaints. (UNU at 2.) This represents 0.7% of the 1,234 unknown structures and residences within one mile of a turbine. (UNU at 2; TR 349-350.)

A 2007 study by Pedersen and Perrson Waye supports Mr. Hessler’s conclusions on the rate of complaints from wind farms similar to the proposed facility. The 2007 Pedersen study examined the association between wind turbine noise and self-reported annoyance, health and well-being in 754 Swedish residents living in proximity to one of seven wind turbine sites. (Co. Ex. 29, Rebuttal Testimony of Dr. Kenneth Mundt at 35.) The study was titled “Wind turbine noise, annoyance and self-reported health and well-being in different living environments.” (*Id.* at 40.) That study indicated that of the 754 survey respondents, only 1.5% complained of sleep disturbance as a result of a noise source. (TR 1732-1733.) Likewise, only approximately 4% of all respondents reported being annoyed by wind turbine noise. (TR 1732.) The authors also correlated annoyance with having a negative attitude toward wind turbines. (Co. Ex. 29 at 35.)

UNU ignores the Pedersen findings, claiming that “[w]ind farm studies by respected acousticians have established that 10% of the population becomes ‘very annoyed’ at turbine noise levels of 30 to 35 dBA.” (UNU at 17.) Not only is this statement untrue, but it is one of many examples of UNU overstating testimony and the record. Rick James reported those “findings,” only citing to one study in his testimony titled “WindFarm Perception,” and did not identify the authors of the study. (Co. Ex. 19 at 14.) The study, however, was not limited to commercial grade turbines and included a range of turbines, from under 1 MW to “larger types.” (*Id.*) The study’s conclusion is also at odds with the 2007 Pedersen study results noted above where only 4% of respondents reported being annoyed with wind turbine noise. (*Id.*; TR 1732.)

UNU also makes the blanket statement that sound levels of 30 to 35 dBA will lead 25% of the population to experience sleep disturbances. (UNU at 17.) That statement, though, is contrary to the 2009 World Health Recommended Night Noise Guidelines, which state that there “is no sufficient evidence that the biological effects observed at the level below 40 dB L-night, outside are harmful to health.” (TR 1740.) The WHO noted that a number of effects on sleep are observed in the range of 30 to 40 dB, but “even in the worst cases the effects seem modest. L-night, outside of 40- dB is equivalent to the lowest observed adverse effect level (LOAEL) for night noise.” (TR 1742.) UNU and Mr. James’ claims that 25% of the population will experience sleep disturbance at levels of 30 to 35 dBA is also at odds with the Pedersen 2007 result showing only 1.5% of all respondents reporting sleep disturbance. (TR 1732-1733.)

UNU also relies on Dr. Jerry Punch’s testimony to support its claims that turbine operational noise will lead to sleep deprivation and health effects. Dr. Punch’s testimony is not credible on the issue of health, as he admitted he was not qualified to opine on the causal link between turbine noise and health effects, is not a medical doctor but rather a clinical audiologist,

and is not an epidemiologist. (TR 1662.). He also admitted that he would defer to acoustics engineers on the setback necessary to avoid annoyance. (UNU Ex. 23 at A.36; TR 1753-1754.) Nevertheless, UNU relies on Dr. Punch's direct testimony to support its claim that annoyance from the turbines will lead to health effects. (UNU at 17-18.) Dr. Punch, however, admitted that the relationship between annoyance and the sound levels from turbines is very nebulous, testifying that "[i]t's hard to – it's even harder to pin down, I think, than the relationship between wind turbine noise and adverse health effects[.]" (TR 1752.) He also admitted on cross-examination that the principles of audiology do not explain how annoyance from noise harms human health. (TR 1726.)

The more credible testimony in this proceeding is that of Mr. Hessler, as discussed above, and that of Dr. Kenneth Mundt. Dr. Mundt's testimony is of particular importance as he conducted a review of available literature on turbine operational noise and relied on the International Classification of Diseases to determine that annoyance was not a health effect. (TR 2862.) Unlike Dr. Punch, who selectively included information in his first and only article against wind turbines, Dr. Mundt reviewed the available published, peer-reviewed scientific literature and concluded that there was "no consistent or well-substantiated epidemiological evidence that could validly lead to a conclusion of a causal connection between residential proximity to industrial wind turbines and human disease or other serious harm to human health." (Co. Ex. 29, at A.28.) Dr. Mundt concluded that "exposures to turbine noise or shadows, while potentially distracting or annoying to some people, have not been scientifically or epidemiologically demonstrated to harm human health." (*Id.*) Given Dr. Mundt's testimony, the Board should again reject UNU's contention that the turbines will "cause harmful annoyance and

sleep disturbance in the community” as it did in the Buckeye I proceeding. (*See In re Buckeye Wind LLC* at 62-63.)

b. Turbine operation will not cause health disorders

UNU continues to rely on Dr. Punch’s testimony in its application for rehearing to claim that infrasound and audible sound from turbines will cause health disorders. (UNU at 20 to 25.) UNU takes over two and a half pages of its brief in an attempt to build-up Dr. Punch’s credentials. (UNU at 20-22.) Dr. Punch may be an accomplished audiologist but that does not qualify him to provide testimony claiming that infrasound from turbines causes health disorders. As previously mentioned, Dr. Punch admitted on cross-examination that he was not qualified to opine on the causal link between turbine noise and health effects, is not a medical doctor and is not an epidemiologist. (TR 1662.) He also admitted that he was not a cortical brain expert, he does not understand how infrasound can result in adverse effects to the human body and that audiology does not study and explain the effects of infrasound. (TR 1684-1689; 1680-1682.)

UNU also tries to build-up Dr. Punch’s testimony by characterizing the only article he has written on wind turbines as a “treatise.” (UNU at 21.) However, that article was not a treatise, was not peer-reviewed, and was simply a one-sided review of literature supporting Dr. Punch’s beliefs. Dr. Punch even admitted to relying on deposition transcripts from court proceedings on wind turbines to develop his “treatise.” (TR 1677.) Dr. Mundt pointed out the shortcomings of Dr. Punch’s article. He noted that Dr. Punch’s article merely offered opinions, lacking citations for the statements made. (Co. Ex. 29 at A.24.) Dr. Mundt further testified that “[t]his is not a comprehensive or systematic review of the available literature, and rather appears to be an opinion piece based on selected citations.” (*Id.*) UNU attempts to backtrack from its reliance on Dr. Punch’s article, instead claiming that it is relying on “sound research by Dr. Salt

and other scientific evidence.” (UNU at 25.) UNU gives no record cite for this claim and does not explain how Dr. Punch was qualified to apply Dr. Salt’s research, none of which is contained in the record other than Dr. Punch’s characterization of the research.

UNU also tries to rely on self-reported symptoms that Dr. Punch collected through reading public comments on dockets or through the interviews he discussed in his testimony. (UNU at 24-25.; TR 1720.) But as Dr. Mundt explained, “self-reported accounts of symptoms or disease experience do not even constitute case reports, as they are unlikely objectively reviewed and presented by medical professionals, are not subject to medical peer-review, and may be generated for purposes other than expanding scientific knowledge.” (Co. Ex. 29 at A.10.) Self-reported symptoms “... do not contribute valid or reliable evidence to the determination of disease causation.” (*Id.*) Proving Dr. Mundt’s point, UNU relies on Dr. Punch’s collection of self-reported symptoms, yet Dr. Punch is not a medical doctor and by his own admission, audiologists do not make patient diagnoses, leaving that task to physicians. (TR 1662.)

As explained, Dr. Mundt’s testimony is the only credible testimony on the issue of health and wind turbines in this proceeding. (*See* Co. Ex. 29.) Nothing in the record refutes his conclusion, based on epidemiological principles, that “exposures to turbine noise or shadows, while potentially distracting or annoying to some people, have not been scientifically or epidemiologically demonstrated to harm human health.” (*Id.*) As he explained to UNU’s counsel on cross-examination, “[i]t all comes down to principles of scientific method. Until there’s affirmative and good quality evidence that there are causal effects, it’s inappropriate to conclude that there are.” (TR 2987.)

The Board must reject UNU’s application for rehearing on this point, as it did in the Buckeye I proceeding, as there is insufficient “hard scientific evidence” in the record to support

the conclusion that wind turbines are a direct cause of health impacts to humans, sufficient to justify setbacks from residents greater than proposed in the application and required by law. (*See In re Buckeye Wind, LLC* at 63.)

c. A setback of .87 miles from property boundaries is not warranted

Given the lack of evidence that turbines result in health issues, UNU's proposed project setback of .87 miles (4,594 feet) should be rejected. (UNU at 26.) UNU relies on Dr. Punch's summary of a study by Dr. Michael Nissenbaum, a radiologist, on wind projects in Maine as a basis for the .87 mile setback, because Dr. Nissenbaum allegedly found that residents living within .87 miles of a turbine "slept more poorly, were sleepier during the day, and suffered poorer mental health than those living at distances greater than two miles away." (UNU at 26.) Dr. Mundt, an experienced epidemiologist, raised many concerns about Dr. Nissenbaum's study. (Co. Ex. 29 at 20-30.) For example, the title of the survey questionnaire used in the Nissenbaum study was suggestively titled "Adverse health effects associated with industrial wind turbine installations questionnaire." (TR 2874.) Dr. Mundt concluded that "[c]ontrary to what the authors conclude, the self-reported measures used in this study are not able to demonstrate what the authors claim." (Co. Ex. 29 at 30.) He also testified as a senior epidemiologist and frequent epidemiology peer-reviewer, that the paper "falls far short of even minimal epidemiological standards and therefore I would recommend that it should be rejected." (*Id.*)

UNU tries to bolster Dr. Punch's unqualified testimony on the Nissenbaum study by trying to discredit Dr. Mundt. (UNU 27-28.) Dr. Mundt is by far the more qualified and credible witness of the two. Dr. Mundt is by training and experience an epidemiologist, and holds a Master's degree in Epidemiology from the School of Public Health, University of Massachusetts, and a Doctorate in Epidemiology from the School of Public Health, University of North

Carolina. (Co. Ex. 29 at 1.) He served for 10 years on the faculty of the Department of Biostatistics and Epidemiology of the School of Public Health, University of Massachusetts, was the President and founder of Applied Epidemiology, and is now a Principal and Director of Epidemiology at ENVIRON International Corporation. (*Id.*) He also has served several years as an editor for two peer-reviewed scientific journals. (*Id.*) Contrary to UNU's belief, Dr. Mundt's training and experience make him uniquely qualified to render an expert opinion about the lack of a causal link between wind turbines and health effects.

For example, Dr. Punch indicated at page 15 of his direct testimony that studies by Krogh, Gillis, & Kouwen (2011), Pierpoint's "scholarly" book on Wind Turbine Syndrome (2009) and the article by Harry (2007) constitute epidemiological evidence that wind turbine noise causes adverse health effects. (UNU Ex. 23 at 15.) Dr. Mundt strongly disagreed, noting in his testimony that none of the references were epidemiological studies. For example, the Krogh "study" was actually a presentation while the Harry article was an unpublished report about a survey restricted to only those that complained about wind turbines. (Co. Ex. 29 at 18.) Dr. Punch also admitted on cross-examination that he was unable to determine whether a study follows appropriate epidemiological principles. (TR 1729.)

Dr. Punch tried to explain away his lack of experience with causation principles by claiming that there are many other "research approaches" that can bring "valuable information to the table." (UNU Ex. 23 at 16.) Dr. Punch claimed that observations of individuals "suggest that siting wind turbines near non-participating residents and the self-reported symptoms," has "given us an abundance of evidence that wind turbine noise is harmful to human health." Dr. Mundt disagreed that other research approaches exist, noting that "[e]pidemiology is the basic science of public health and the central science for determining the causes of human diseases[.]"

(Co. Ex. 29 at 31.) Dr. Punch's overreliance on the self-reported symptoms is an example of why the principles of epidemiology are so important to determining the causal relationship, if any, between various risk factors and disease. (Co. Ex. 29 at 3.)

UNU has not put on any hard scientific evidence that wind turbines lead to adverse health effects. Instead, it relies on the testimony of an audiologist who admitted he is not familiar with epidemiological principles (TR 1729) and that as an audiologist, he does not determine "the cause, the etiology, of the problem[.]" (TR 1662.) Dr. Mundt's testimony provides the Board with sufficient evidence to find that the facility as sited will not lead to adverse health impacts. The Board should continue to reject UNU's request for a .87 mile setback just as the Board rejected UNU's request for a 1.25 mile setback in the Buckeye I proceeding. (*See In re Buckeye Wind LLC* at 59, 62-63.)

d. A sound limitation of 5 dBA over the L90 background sound is not warranted

UNU repeats verbatim its argument from its initial merit brief in this proceeding on this point, with the exception that it now claims that no one has the right to "annoy and disturb" one's neighbors' sleep just because no health damages occurs." On that point, UNU has failed to present evidence in this proceeding that neighbors will be annoyed or disturbed in their sleep as a result of wind farm operation. To the contrary, the record supports the Board's finding that the projected operational noise levels are acceptable and that the complaint resolution process will protect the public interest. (Certificate at 63.)

Turning to UNU's repeat of its argument from its initial brief, a sound limitation of 5 dBA over the L90 background sound is not warranted for the proposed facility. UNU cites to Mr. James' testimony to support its claim that a five dBA increase is the point at which 10% of the exposed population will be annoyed by new noise. (UNU at 30.) However, Mr. James did

not testify to that statement. Instead, he testified that a study sponsored by the University of Groningen and Goteborg University titled “WindFarm Perception” reported that 10% of the population is very annoyed at 30-35 dBA for wind turbines ranging from small under 1 MW models to larger types. (UNU Ex. 19 at 14.) As discussed at page 9 above, the conclusions of the WindFarm Perception report are contrary to both the 2007 Pedersen study findings and the WHO’s 2009 Night Noise Guidelines for Europe.

UNU also cites to Mr. James’ testimony about noise standards from other jurisdictions but ignores evidence in the record that other jurisdictions and projects utilize noise limits above 5 dBA over background. For example, Mr. Hessler testified that many locales utilize a noise standard of 50 dBA at residences. (TR 744; Co. Ex. 1 at Ex. O, at 29.) Mr. Speerschneider testified that “noise levels proposed and accepted in many different cases across the country are in line or greater than what we’ve proposed here.” (TR 167.)

The 2009 World Health Organization Night Noise Guidelines for Europe are also at odds with Mr. James’ conclusions and UNU’s contentions. WHO guidelines state that a L-night, outside noise level of 40 dB is equivalent to the lowest observed adverse effect level (LOAEL) for night noise. Notably, the level utilized by the WHO is L-night, outside which is the A-weighted long-term average sound level determined over all the night periods of a year. (TR 1739.) In other words, it is a one year average. Also worth noting is that the WHO’s recommendations are guidelines only, and that the WHO has recommended an interim target level of 55 dBA L-night, outside. (TR 1738; TR 1817-1818.)

Even UNU’s own witness Dr. Punch has advocated for noise limits higher than 35 Leq. (TR 1770;1824.) Dr. Punch testified that he was on a committee to provide the State of Michigan with recommendations on noise standards. (TR 1768-1769.) He testified that the

committee never reached the point of giving a formal recommendation, but that the level he was willing to recommend was 40 dBA Leq. (TR 1770;1824.) That recommendation is very close to the recommendation of David Hessler that “40 dBA may be considered the approximate threshold for any substantial adverse noise impact and is suggested as an ideal design goal for new projects.” (Co. Ex. 1 at Ex. O, p. 29.)

UNU criticizes Champaign Wind for not using the L90 background plus 5 dBA as the design goal for the Champaign Wind project. But as Mr. Hessler explained, his noise modeling relied on a design goal of 5 dBA over the average nighttime ambient background sound level. (Co. Ex. 1 at Ex. O, p. 28-30.) The purpose of that design goal was to follow the allowable noise limits approved by the Board in other projects. Specifically, as noted in Champaign Wind’s initial brief, the Board has approved conditions on noise that limit sound levels to the greater of 5 dBA over the average ambient nighttime sound level or 5 dBA over the actual ambient background at the point of the complaint. (*See e.g., In re Paulding Wind Farm II*, Case No. 10-369-EL-BGN, Opinion, Order and Cert., Nov. 18, 2010 at 32.)

UNU also confuses a design goal with a noise limit. Mr. Hessler discussed the difference between these two concepts in his sound report at Exhibit O to the application. (*See* Co. Ex. 1 at Ex. O, p. 29-30.) In his report, he noted that “40 dBA may be considered the approximate threshold for *any* substantial adverse noise impact and is suggested as an *ideal* design goal for new projects.” (*Id.* at 29, emphasis in original.) Mr. Hessler’s statement follows the 2009 WHO Night Noise Guidelines for Europe conclusions on 40 dBA. (TR 1739.) Mr. Hessler continued his explanation in his report by noting that “[a]lthough desirable, such a level [40 dBA] is not usually achievable at most wind projects in the Midwest or Eastern United States because project locations that are otherwise suitable in terms of transmission lines and wind resource are rarely

unpopulated.” (Co. Ex. 1 at Ex. O, p. 29-30.) In other words, using a design goal as a limit will preclude the development of wind projects throughout the Midwest and the Eastern United States.

Mr. Hessler repeated many of these points on cross-examination, testifying that the 40 dBA level is an ideal design goal (TR 802-803) at which there was practically no adverse reaction. But even at levels of 45 dBA, Mr. Hessler testified that his study of operating projects suggest that the rate of complaints for a project sound level between 40 and 45 dBA is about 2% of the total population, i.e., those within 2,000 feet of a turbine. (Co. Ex. 11 at 7; TR 738.) Mr. Hessler explained these studies in detail at Exhibit O to the application, noting that he published a peer-reviewed article about a study at five wind turbine projects with noise limits of 50 dBA and sound levels above 45 dBA. Yet the “total number of complaints was remarkably small compared to the total number of residences in the immediate project area.” (Co. Ex. 1 at Ex. O, at 29.)

Mr. Hessler also addressed UNU’s concern about the presence of wind shear and stable atmospheric conditions at cross examination. In response to a question from UNU counsel, Mr. Hessler testified that “...those things happen all the time, but what we’re finding is as long as the long-term level is less than 45, there’s surprisingly to us, few complaints.” (TR 811-812.) Mr. Hessler reiterated that “[a]s I mentioned, if it’s under 45, there’s very, very few complaints. Irrespective of the background level, by the way.” (TR 830.)

The record also refutes UNU claims that Champaign Wind acknowledged in its application that 5 dBA above the nighttime background sound level is the appropriate noise standard. (UNU at 31-32.) To the contrary, Champaign Wind simply discussed why it utilized a design goal of 44 dBA for its project, which is a combination of the average nighttime ambient

background sound level for the project area plus 5 dBA, a precedent previously approved by the Board. (Co. Ex. 1 at 72-73.) The application does not support UNU's statements, and the record does not support its request for noise limit of a 5 dBA above the L90 background sound limit. The Board should continue to reject UNU's argument on this point.

e. The background levels estimated by Hessler Associates were reasonable

UNU repeats the same arguments it made on this point in its initial brief, with the addition of suggesting that Dr. Mundt testified that the odds of noticing turbine noise increases by 30% for every dBA increase in noise. (UNU at 32). On that point, Dr. Mundt made no such statements, as that information came from an article that was read into the record. (TR 2969.) Regardless what UNU claims, the fact remains that both Rick James and Mr. Hessler achieved very similar ambient background measurements. (TR 1181; 1186; 1266.)

As it did in its initial brief, UNU continues to go to great lengths to try and discredit the background level estimates for the project. (UNU 32-36.) UNU first claims that Mr. Hessler selectively placed his monitoring stations near active farming fields. (UNU at 32.) Mr. Hessler, however, noted on cross-examination that he had spoken to most of the owners about their expected activities around the stations, and that he did not believe there was any harvesting or grain drying planned for the specific locations that were used. (TR 769.) In fact, the pictures of the monitoring stations that Mr. Hessler included in his study (Ex. O to the application) show that harvesting was complete at certain locations. (See Co. Ex. 1 at Ex. O, p. 9-10.) Mr. Hessler testified that the sound data over the 18 day period was very consistent at all locations and he strongly believed that there was no contamination. (TR 770; 773-774.) He also reviewed Figure 2.5.2.4 which indicated a general correlation between sound levels and wind speed. (See Co. Ex. 1 at Ex. O, p. 26.)

UNU disagrees with Mr. Hessler's conclusion, claiming that the Leq averages for the ten stations are widespread and that the average nighttime Leq of 40 dBA at Station 7 proves that the other stations experienced high contaminating noises. (UNU at 33-34.) A review of Exhibit O indicates otherwise. Table 2.5.1.1 in Exhibit O reveals that not only is the nighttime average of the 10 stations 38.9 dBA, but that the median is 39 dBA. In fact six of the 10 stations had readings within 1 dBA of 39 dBA. As to Station 7, construction activity was observed at the end of the survey at new houses on either side of the field where the monitor was set up. (Co. Ex. 1 at Ex. O, p. 12.) Mr. Hessler also noted that the measurements at Station 7 were generally consistent with other stations with the exception of several periods of unusually high levels, particularly on November 17. (*Id.* at 23.) The plot in Figure 2.5.2.1 reflects the spikes in Station 7, but also shows the consistency in Station 7's readings during non-spike periods. These facts support Mr. Hessler's conclusion and analysis in Exhibit O to the application that background noise levels are consistent throughout the project area. (Co. Ex. 1 at Ex. O, pp. 20-25.)

UNU next claims that Mr. Hessler's observations were skewed because of background noise caused by wind blowing through leaves, grass and leaves. (UNU at 35.) UNU ignores Mr. Hessler's testimony that his correlation between wind speed and the L90 background levels shows that the L90 levels increased with wind speed. (TR 774-775; Co. Ex. 1 at Ex. O, p. 26.) Mr. Hessler also testified that the sound levels reflected in periods of significant winds were a result of "the sound of the wind blowing through trees, and grass and that sort of thing." (TR 775.) Mr. Hessler noted that there will be some influence from surrounding vegetation which is a logical statement considering that measurements were taken outdoors for 18 days. (TR 775.) UNU tries to use Mr. Hessler's statement to its advantage, but it is clear from the pictures in

Exhibit O to the application that Mr. Hessler took steps to place the sound monitors in locations that were away from trees and bushes. (See Co. Ex. 1 at Ex. O, 6-15.)

UNU also does not explain why its own witness, Rick James, took background measurements in a yard with a number of large trees and a hedge. (TR 1168-1169.) Mr. James' conducted a limited number of background measurements at UNU member properties in May 2008. (TR 1179-1180.) At the Bartletts' home, he set up the meter in their backyard which has a large number of trees. (TR 1168.) When asked about the high readings he recorded, he noted that birds in the trees resulted in sound levels of 60 dBA at that site, which Mr. James admitted can wake people up. (TR 1169.)

Even with these facts in the record, UNU persists in its claim that Mr. Hessler's measurements were influenced by leaf rustle. (UNU at 36.) UNU cites to turbine siting guidelines from Minnesota claiming that the guidelines that Mr. Hessler allegedly prepared state that background levels will be louder when deciduous trees are leaved. (UNU at 36.) Mr. Hessler adequately addressed this claim at hearing, noting that "you don't want leaf rustle noise – as I mentioned, it's a very secondary concern. The principal thing is the insects and frogs and birds that I mentioned up above there, that's really what you want to avoid by measure during the cold season." (TR at 792.) And as noted above, even Mr. James acknowledged that vegetation influences cannot be avoided.

In fact, Rick James testified on cross-examination that his results were very similar to David Hessler's background study results for both the Buckeye I project and Buckeye II project. (TR 1181; 1186; 1266.) When challenged on averaging his L90 numbers, Mr. James testified that "I can't explain what the difference would be, but it's right in the ballpark of Mr. Hessler's and within a decibel or so where I was. The point is that characterizing the community, it would

be 28 to 30. It would be pretty close no matter where you were.” (TR 1184.) Upon further questioning, Mr. James admitted that the appropriate comparison of his and Mr. Hessler’s background numbers was to use Mr. Hessler’s nighttime mean L90 average of 26 dBA for the Buckeye II project during periods of low winds (3 meters per second). (TR 1186.) Which, as Mr. James admitted, was very comparable to his own L90 background numbers. (TR 1186 *and see* Co. Ex. 1 at Ex. O, Table 2.5.2.1, p. 28 for background level at 3 meters per second.) The fact that Mr. Hessler’s measurements in Buckeye II were almost identical to Mr. James’ readings, alone refutes UNU’s unfounded criticisms of Mr. Hessler’s background study work and its claim that Mr. Hessler’s results between Buckeye I and Buckeye II differed. As it did in the Buckeye I Wind Farm proceeding, the Board appropriately found that Mr. Hessler’s background study work was acceptable and reliable. (*In re Buckeye Wind LLC* at 55.)

f. The L90 metric is not an appropriate metric for setting noise limits

UNU next repeats its argument that Champaign Wind has “abandoned the universally accepted use of the L90 to measure background sound to justify its overpopulation of turbines in the project area.” (UNU at 40.) UNU contends that the L90 is the appropriate measurement of background sound and not the use of Leq measurements. (UNU at 37.) UNU also claims that David Hessler agrees that wind projects should not be allowed to increase pre-existing sound levels by more than five dBA above the background level L90. (UNU at 38.) However, Mr. Hessler did take L90 background measurements, and the design goal used for the project was 44 dBA. This design goal not only represents 5 dBA over the average nighttime ambient background sound level at critical wind speed, but is a level that Mr. Hessler has found over the course of years of work in the wind industry to lead to very few complaints.

UNU claims that Champaign Wind's design goal will not be sufficient to protect the public. (UNU at 38.) However, it is not the design goal that will protect the public but rather the fact that the turbines as modeled are projected to not exceed 44 dBA at non-participating residences. Again, David Hessler's testimony establishes that project sound levels below 45 dBA lead to very few complaints. Regardless whether L90 or Leq is presented as a site background level, the fact remains that the Buckeye II project will be subject to a noise condition. (Certificate at 88.) This means that project sound levels will be limited to levels that do not lead to significant complaints.

David Hessler presented a very good summary on this point in the sound study he prepared for the application. As stated at page 29 of Exhibit O to the application:

First-hand experience measuring the sound emissions of newly completed wind projects very similar to this one indicates that the number of complaints or concerns about noise remains quite low at all project sound levels below 45 dBA and such a level is recommended as a design goal/regulatory limit for this or any wind project because it appears to balance the interests of all parties by generally protecting the public from unreasonable annoyance while not standing completely in the way of economic development. The rationale behind this conclusion, including a review of existing noise regulations pertaining to wind turbines, is detailed in a peer-reviewed article written by the author and published in the *Noise Control Engineering Journal*. In brief, the article summarizes the observed reaction to the sound emissions from five wind turbine projects in rural farm communities (all very comparable to the Buckeye site) where extensive measurements were taken at all residences, whether participating or not, where complaints or even mild concerns about project noise had been reported to the project operator. Thus the total number of complaints was determined along with the actual project sound level at each location. Even though all of the projects involved in the study were subject to a 50 dBA noise limit and were found to produce sound levels above 45 dBA at a substantial number of residences, the total number of complaints was remarkably small compared to the total number of residences in the immediate project area (defined, in this case, as within 2000 ft. of a turbine). More specifically, the average number of complaints at all sound levels was 4% relative to the total population and, perhaps more importantly, only 2% for all residences exposed to mean sound levels below 45 dBA; hence the recommendation of 45 dBA as a design level that is associated with an ostensible acceptance rate of 98%. Since level essentially coincides with the OPSB noise

standard of 44 dBA, 44 dBA will be considered the nominal impact threshold at non-participating residences for this project.

Another significant finding from the field survey of newly operational wind projects discussed above was that there were virtually no complaints (only 1 person at one of the five sites) below a project sound level of 40 dBA. Consequently, 40 dBA may be considered the approximate threshold for *any* substantial adverse noise impact and is suggested as an *ideal* design goal for new projects. Although desirable, such a level is not usually achievable at most wind projects in the Midwest or Eastern United States because project locations that are otherwise suitable in terms of transmission lines and wind resource are rarely unpopulated. Levels less than 40 dBA at the nearest residences are normally only seen at very remote sites. Nevertheless, contour maps will be developed to evaluate the potential exposure to sound levels of 40 dBA or more at this site.

(Co. Ex. 1 at Ex. O, p. 29, emphasis in the original.)

UNU claims that the Board's past rulings on noise conditions are irrelevant. (UNU at 40-41.) To the contrary, the Board's past acceptance of noise conditions similar to that proposed for this proceeding is relevant. Two wind farm projects in Ohio currently use similar conditions. The Timber Road project certificate holds the operator to a noise condition of the greater of 41 dBA plus 5 dBA or the actual measured ambient background plus 5 dBA. (TR 2813.) Staff witness Ray Strom testified that only two complaints on noise have been received from the Timber Road II project in Paulding County, Ohio, one due to a turbine bushing issue, while the other was noise coming from a pool pump, not a turbine. (TR 2798-2799.) The Blue Creek Wind Farm in Van Wert County uses a condition of the greater of 43.6 dBA plus 5 dBA or the actual measured ambient background plus 5 dBA. (TR 2821.) Mr. Strom testified that he had asked about complaints at that facility, and was told there were none. (TR 2831.) Both of these projects provide support for Mr. Hessler's testimony that operational noise from the facility will result in few complaints. The projects also provide support for the Board's issuance of the Certificate, as these are operating wind farms in Ohio, contrary to UNU's claims that opposing

expert testimony was required in the underlying proceedings in order for the Board to consider its prior precedent. (UNU at 40-41.)

Manufacturer guidelines also support the project as sited. UNU claims Nordex has issued a siting guideline recommending that turbines should be located at least 500 meters from homes. (UNU at 42.) UNU, however, is aware that Nordex submitted correspondence to Staff witness Andrew Conway stating that it maintained no siting guidelines. (*See* Co. Ex. 25.) The piece referred to by UNU was pulled off the internet by UNU witness Julie Johnson over seven years ago, is not model specific and appears to be general guidance only. (TR 978.) Moreover, GE's guidelines for wind turbine siting recommend a setback of 1.1 times the turbine height from residential structures, a setback Mr. Conway testified that Champaign Wind's turbines exceed. (TR 2499). Notably, the GE recommended setback is less than the Board's minimum setback requirements to residences of 750 feet plus the length of the turbine blade.

Contrary to UNU's claims, Champaign Wind has not "crammed" turbines into the smallest available space. Modeled sound under worst case scenarios will remain under 45 dBA, a level found to lead to few complaints. As currently sited, the distance between proposed turbines and the nearest non-participating property line ranges from 561 to 3,403 feet, and averages 1,170 feet. The distance between proposed turbines and the nearest residential structure ranges from 934 to 2,642 feet, and averages 1,512 feet. (Co. Ex. 1 at 82.) Moreover, the Board has adopted a complaint procedure and a noise condition to ensure the facility operates under its worst case scenario. With this evidence and the Certificate conditions, the Board appropriately found that operational noise levels from the facility will be reasonable and that the facility as designed will minimize any adverse impact to the community as a result of turbine operational sound.

- g. *The G97 turbine may be approved because Condition 49 provides a limit on operational sound regardless of turbine model*

Repeating its argument in its initial brief, UNU claims that the Board should not allow Champaign Wind to utilize the G97 turbine model. (UNU at 42.) UNU claims that the lack of noise reduction modes in the Gamesa G97 turbine model means that it will not be able to comply with the “lax noise standard” proposed by Champaign Wind. (UNU at 43.) This argument is without merit because the Board’s Condition 46 will apply to the facility regardless of the type of turbine Champaign Wind selects. (Certificate at 88.) Condition 46 will preclude operating sound levels from exceeding 44 dBA at nighttime, whether Champaign Wind elects to use the G97 Gamesa turbine or the Nordex N100. This fact moots any concern UNU has regarding the G97 turbine sound power level versus the reduced sound power level of the Nordex N100 turbine in NRO Mode 4.

- h. *A 35 dBA limit is neither warranted nor practical*

UNU’s next argument on noise is that no non-participating neighbor should be exposed to more than 35 dBA of noise. (UNU at 43.) UNU claims that a noise limit of 35 dBA, 20 minute Leq level should have been adopted by the Board at non-participating property lines. (*Id.*) UNU again relies on the testimony of Rick James that wind turbine sound levels in the range of 30 to 35 dBA will lead to sleep disturbance and annoyance. (*Id.*) Mr. James’ testimony, however, is contrary to other evidence in the record and is not reliable.

UNU opens its argument with the statement that “[w]ind farm studies by respected acousticians have established that 10% of the population becomes ‘very annoyed’ at turbine noise levels of 30 to 35 dBA.” (UNU at 43.) As noted above at page 8, this statement not true. The only study cited by Rick James included a range of turbines, from under 1 MW to “larger types..” (Co. Ex. 19 at 14.) Mr. James also admitted that he had no idea how many individuals

he believed would be disturbed within 1.25 miles of the turbines, even though he gave the impression in his direct testimony that everyone within 1.25 miles would be disturbed by the turbines. (UNU Ex. 19 at 23); TR 1206-1208, 1211.)

UNU further states that sound levels of 30 to 35 dBA will lead to 25% of the population experiencing sleep disturbances. (UNU at 43.) As noted above at page 9, that statement is contrary to the 2009 WHO Night Noise Guidelines which state that there “is no sufficient evidence that the biological effects observed at the level below 40 dB L-night, outside are harmful to health.” (TR 1740.) The WHO noted that a number of effects on sleep are observed in the range of 30 to 40 dB, but “even in the worst cases the effects seem modest. L-night, outside of 40- dB is equivalent to the lowest observed adverse effect level (LOAEL) for night noise.” (TR 1742.) Likewise, the statement is contrary to the findings in the Pedersen and Perrsen Waye 2007 study titled “Wind turbine noise, annoyance and self-reported health and well-being in different living environments.” (TR 1732-1733.)

UNU also tries to credit certain statements to Dr. Mundt about correlations between the percent of the population noticing increases in turbine noise. (UNU at 43.) That is another example of UNU mischaracterizing the record because Dr. Mundt made no such statements. UNU counsel read certain portions from a 2004 Pedersen report into the record that described the percent of respondents that reported being annoyed at various sound categories. (TR 2946, 2948.) UNU even mischaracterizes the portions read into the record, claiming that “36% of the population is ‘very annoyed’ at levels over 40 dBA” when the article actually stated that 36% of the 25 respondents (or 9 respondents) living in areas above 40 dBA were very annoyed. (TR 2946-2947.) UNU also fails to acknowledge that Dr. Mundt pointed out that the article

reported that those with a negative attitude towards the visual impact of wind turbines were more likely to report annoyance with the wind turbine noise. (TR 2947.)

UNU also complains that the project will have instances where the turbines are running when winds are low at the ground. (UNU at 44.) UNU points to a study by Cliff Schneider claiming he is “a respected acoustician” to allege that stable conditions occur during 67% of all nights. (UNU at 44.) UNU ignores Mr. James’ admissions that Mr. Schneider was not qualified in the same area of acoustics as Mr. James, that he had to train with Paul Schomer before doing his tests and that the same person that trained him for the tests (Mr. Schomer) “peer reviewed” his work product. (TR 1197-1198.) Yet, Mr. James insisted that Mr. Schneider’s paper was still an “authoritative source.” (TR 1198.)

Regardless of Mr. James’ credibility on this subject, Mr. Hessler’s testimony addressed the topic of wind shear and stable atmospheric conditions, showing there are few complaints even in such conditions, as fully described above on page 18. UNU also misses the point that the level used in Condition 46 fits with past Board precedent, is lower than other jurisdictions and is at a level Mr. Hessler has found acceptable.

UNU continues to take issue with Mr. Hessler’s past experiences on complaints at wind farms, attacking Mr. Hessler’s testimony on the complaint rates he has observed at other wind farms. (UNU at 45-46.) Mr. Hessler’s experiences, however, track the rates noted above from the Pedersen and Persson Waye’s 2007 study which found that only 1.5% of all respondents complained of sleep disturbance. Pedersen’s 2004 study that UNU mischaracterized also supports Mr. Hessler’s experiences. The report for that study stated that 36% of the 25 respondents (or 9 respondents) living in areas above 40 dBA were very annoyed. (TR 2946-2947.) Considering that the study involved 351 subjects, that correlates to 2.5% of the total

study subjects reporting annoyance at levels above 40 dBA. And again as noted by Dr. Mundt, the study's authors reported that those with a negative attitude towards the visual impact of wind turbines were more likely to report annoyance with the wind turbine noise." (TR 2947.) Mr. Hessler's testimony and studies on wind farm complaints are credible and support the Board's finding that operational noise from the facility will not lead to adverse impacts.

UNU next claims that over 200 non-participating residences will "suffer" from noise levels higher than 40 dBA. (UNU at 45.) UNU's characterization of noise above 40 dBA as leading to "suffering" is contrary to the 2009 WHO Night Noise Guidelines for Europe that state that a L-night, outside noise level of 40 dB is equivalent to the lowest observed adverse effect level (LOAEL) for night noise. UNU's characterization is also contrary to the WHO's position that in the range of 40 to 55 dB, L-night, outside, adverse effects are observed. And as UNU witness Rick James agreed, that this is an increasing range, "as the level is higher, the percentage of people goes up." (TR 1221.) Champaign Wind's worst case modeling kept all residences below 44 dBA and the majority of residences under 40 dBA. These levels that are very close or under the level that the WHO report noted was equivalent to the lowest observed adverse effect.

UNU also fails to acknowledge the conditions that the Board has imposed in the Certificate. Condition 5 requires a complaint resolution procedure to be in place that requires Champaign Wind to submit all complaints, whether formal or informal to Staff. (Certificate at 78.) Condition 46 requires the facility to operate in a manner that does not exceed 44 dBA during nighttime hours. (Certificate at 88.) Condition 46 also requires review and possible mitigation of all project-related noise complaints. (*Id.*) Significantly, the Board has adopted Condition 52(c) which requires decommissioning of individual wind turbines if the turbine is unable to operate within the terms of the Certificate. (Certificate at 92.) These conditions

provide additional assurances that the operational noise from the facility will not lead to adverse impacts.

In addition to repeating its arguments from the initial brief, UNU adds new claims to its application for rehearing. (UNU at 48-50.) UNU first claims that Staff witness Raymond Strom's testimony on complaints at the two operating wind farms in Ohio is irrelevant. (UNU at 48-49.) UNU claims Mr. Strom did not talk to the "staffer who had that responsibility" for the Timber Road facility, and that he obtained his information on noise complaints from another "staffer" with general oversight of the Timber Road facility. (UNU at 48-49.) UNU also claims that Milo Schaffner's hearsay testimony about complaints from the Blue Creek wind farm is more relevant. (UNU at 49.) To the contrary, Mr. Strom's testimony about only one noise complaint related to a turbine bushing failure at the Timber Road facility is relevant. (TR 2798-2799.) As well, his testimony that he inquired about noise complaints at the Blue Creek facility and was told there were none is relevant. Also worth noting is that UNU was the party that elicited the cross-examination testimony from Mr. Strom about the Timber Road II noise complaints. (TR 2798-2799.) Moreover, UNU did not object or move to strike Mr. Strom's testimony on cross-examination about the two facilities. The weight of the evidence supports the Board's findings. Mr. Schaffner's hearsay testimony was properly excluded as hearsay, and the Board properly weighed his testimony.

UNU's also asks the Board to adopt a 40 dBA standard if it rejects UNU's requested 35 dBA standard. (UNU at 49.) UNU continues to claim that WHO "has determined that 40 dBA is the threshold at which sound becomes intrusive and annoying." (UNU at 49.) That is not true, as the 2009 WHO Night Noise Guidelines for Europe state "[f]or levels at 40 to 55 dB, "[a]dverse health effects are **observed** among the exposed population. Many people have to

adapt their lives to cope with the noise at night. Vulnerable groups are more severely affected.” (TR 1742, emphasis added.) UNU witness Rick James agreed that this is an increasing range, “as the level is higher, the percentage of people goes up.” (TR 1221.) Notably, the level utilized by the WHO is L-night, outside which is the A-weighted long-term average sound level determined over all the night periods of a year. (TR 1739.) In other words, a one year average. Also worth noting is that the WHO’s recommendations are guidelines only, and that the WHO has recommended an interim target level of 55 dBA L-night, outside. (TR 1738; TR 1817-1818.) The record does not support UNU’s alternative call for a 40 dBA standard.

The evidence in the record also does not support UNU’s repeated request that operational noise levels be limited to 35 dBA at non-participating property lines. In addition, the complaint resolution procedure required under the Certificate will provide an avenue to address noise complaints. (Certificate at 89.) It is apparent that UNU’s arguments against a complaint resolution procedure (UNU at 50) are not about the procedure, but about the operational noise levels approved for the project. As much as UNU may disagree, the record does not support its contention for a nighttime operational noise limitation of 35 dBA or an alternative limitation of 40 dBA. (*See e.g.* Co. Ex. 1 at Ex. O, p. 29-30 noting how 40 dBA standard would preclude development.) UNU’s application for rehearing on this point should be rejected.

i. Champaign Wind’s application adequately addresses low frequency noise

As in the Buckeye Wind I proceeding, UNU continues to argue that Champaign Wind’s application was deficient because it allegedly does not comply with Rule 4906-17-08(A)(2)(b) by modeling low frequency noise. (UNU at 50.) As an initial point, the Board’s Chairman previously deemed Champaign Wind’s application complete and in compliance with the Board’s rules. For that reason alone, UNU’s request that the Board “return” Champaign Wind’s

application should be denied. Moreover, David Hessler testified that modeling for the project covered the octave band frequency spectrum of the turbine sound power level down to 31 hertz. (TR 868; *see* Co. Ex. 1 at Ex. O, at 32-33.) Exhibit O to Champaign Wind's application contains a discussion of the modeling effort for the low end of the frequency spectrum, including Figure 3.3.1 which indicates how sound power levels drop at low frequency levels. (Co. Ex. 1 at Ex. O, at 32-33.) And as noted by UNU witness Jerry Punch, the low frequency spectrum is generally 150 hertz and below. (TR 1664.) Thus, Champaign Wind's application did include low frequency modeling over the majority of the low frequency spectra.

Champaign Wind's application also included a detailed discussion on low frequency levels from wind turbines. (Co. Ex. 1 at 77-78, and at Ex. O at 39-42.) Hessler Associates' noise study in the application also provided a graph of actual field measurements in dBC to show the lack of any significant low frequency noise levels as a result of wind turbine operation. (Co. Ex. 1, Ex. O at 42.) Figure 3.6.1 of Exhibit O to the application also shows the lack of any difference in the low frequency spectra measured with turbines on and off. (*Id.* at 40.) Contrary to UNU's claim, the modeling Champaign Wind utilized for its application was generally accepted computer modeling that included consideration of low frequency noise levels to the extent applicable. The modeling along with the actual field measurements on low frequency noise from turbines provided the Board with adequate information to find that low frequency noise from wind turbines will not lead to adverse impacts. The Board may reject UNU's application for rehearing on this point.

j. The record does not support further proceedings on low frequency noise

UNU next repeats its argument that the Board should require a low frequency noise evaluation to prevent "widespread annoyance, sleeplessness, and health problems in the

surrounding community.” (UNU at 51.) UNU first claims that David Hessler has changed his mind about whether low frequency noise can be a problem at wind projects. (UNU at 51.) The transcript indicates otherwise, and at best Mr. Hessler’s testimony indicates he was not certain as to the source of the Wisconsin homeowner’s complaints he listened to in a Wisconsin wind farm proceeding. (TR 864.)

On cross examination, Mr. Hessler testified about hearing witnesses in a Wisconsin wind turbine proceeding testify about health concerns. (TR 865.) He stated that he testified in the Wisconsin proceeding immediately after the witnesses, and in that testimony stated that infrasound below the level of hearing might have been an issue. (TR 866.) He recommended during his Wisconsin testimony that the issue at the witnesses’ residences should be looked into further. (TR 865.) He concluded his discussion of his Wisconsin testimony by noting that he did not know for certain whether the homeowners that testified in the Wisconsin proceeding were bothered by infrasound. (TR 866.)

UNU uses Mr. Hessler’s testimony to leap to the conclusion that Mr. Hessler has changed his mind on low frequency noise. As Mr. Hessler testified, “[a]t that hearing I had just heard the testimony from those people and commented on it almost immediately thereafter to the effect that possibly it was infrasound below the threshold of hearing that might have been the issue there. We really don’t know yet, though.” (TR 866.) Mr. Hessler’s work in Exhibit O to the application addressed all ranges of low frequency noise from turbines, finding no concern especially given that measurements show that the level of low frequency noise remains the same before and after turbines are shutdown. (Co. Ex. 1, Ex. O at 40, Figure 3.6.1.) This evidence does not support UNU’s unsupported claim that low frequency noise will be heard and lead to annoyance, sleeplessness and health problems.

UNU attempts to rely on an exhibit to its Motion to Reopen the Record (UNU at 53), claiming that Mr. Hessler was able to detect low frequency noise during a study in Wisconsin. The exhibit cited by UNU is not part of the record, and the Board appropriately refused to allow UNU to supplement the record with its one-sided presentation of the Wisconsin study. (Certificate at 14-15.)

UNU also claims that the Board has previously required another wind developer to model low frequency noise and that manufacturers have low frequency noise data for turbine models. (UNU at 53.) Yet, David Hessler was very clear in his testimony that low frequency noise data below 30 hertz was not available from manufacturers. (TR 868-869.) UNU points to Rick James testimony (UNU Ex. 19 at 30) and Staff witness Ray Strom's cross-examination (TR 2797) as proof that noise data exists, but neither of those witnesses stated that such data existed to the detail discussed by Mr. Hessler. UNU also takes liberty with the Board's condition issued in the Black Fork Wind Energy proceeding. UNU claims that the Board required modeling, but leaves out the portion of the condition that required submittal of the information only "...to the extent such information exists and is released to the applicant by the turbine manufacturer." (*See In re Black Fork Wind Energy LLC*, Case No. 10-2865-EL-BGN, Opinion, Order and Cert., Jan. 23, 2012 at 43.)

UNU's request to reopen this proceeding to further review low frequency noise from wind turbines is not necessary and should be rejected. The Board may also note that the record in this proceeding supports a finding that wind projects of this nature result in very little complaints when long term sound levels are kept below 45 dBA. This same conclusion can apply to low frequency noise levels, because if there truly was an issue with low frequency noise, one would expect to see a higher rate of complaints. Yet, that is simply not the fact as found by

Mr. Hessler and the authors of the Pedersen and Perssen Waye 2007 study when looking at the number of complaints as a percent of the exposed population. (Co. Ex. 11 at 7; TR 1732-1733; Pedersen and Persson Waye study).

Lastly, any issue or concerns about infrasound and health are addressed by Condition 52(c) in the Certificate. (Certificate at 92.) That condition, as written, would allow the Board to “require decommissioning of individual wind turbines due to **health**, safety, wildlife impact or other concerns that prevent the turbine from operating within the terms of the Certificate.” (Staff *Id.*, emphasis added.) UNU’s own witness, Dr. Jerry Punch, testified that Condition 52(c) would make him “more comfortable” and that a complaint resolution procedures would be appropriate. (TR 1760-1762.)

k. A low frequency noise limit of 50 dBC is not warranted

UNU continues to argue that Rick James’ recommendation of limiting low frequency noise levels to less than 50 dBC should be adopted. (UNU at 53.) UNU claims that his testimony is not contested by any evidence in the record. (*Id.*) To the contrary, Rick James’ recommendation is based on his belief that infrasound causes health effects. (See UNU Ex. 19, at 30.) Dr. Mundt’s testimony provides credible evidence that there is no link between turbine operation and adverse health effects. (See Co. Ex. 29.) Hessler Associates also addressed C-weighted sound levels in Exhibit O to the application, noting that “C-weighted sound levels cannot be measured in any kind of meaningful way in the windy conditions associated with turbine operation, since they essentially quantify the level of low frequency microphone distortion rather than any actual noise.” (Co. Ex. 1 at Ex. O, at 41.) Figure 3.6.3 in Exhibit O to the application also shows that dBC levels at a site near a turbine and a site away from a turbine measured almost identical sound pressure levels, dBC. (*Id.* at 42.) As Hessler Associates concluded in its study, “...C-weighted sound levels have no practical place in the measurement

of wind turbine sound.” (*Id.*) The Board correctly refused UNU’s request to impose a 50 dBC limit.

2. The Board’s denial of UNU’s motion to reopen the record was appropriate.

Through its January 17, 2013 motion, UNU sought to reopen the record to introduce a report on infrasound noise measurements from a proceeding in another state. Specifically, the Public Service Commission of Wisconsin (“Wisconsin PSC”) commissioned a report for use in its review of the application for the Highland Wind Farm. UNU claimed in its motion that the report provides important information and recommendations on the existence and effects of wind turbine noise, resolves uncertainties in David Hessler’s testimony in this proceeding and refutes claims in the application.

The Board appropriately denied UNU’s motion. Rule 4906-7-17(C) states:

Applications for reopening a proceeding after final submission but before a final order has been issued shall be by petition, and shall set forth specifically the grounds upon which such application is based. If such application is to reopen the proceeding for further evidence, the nature and purpose of such evidence must be briefly stated, including a statement why such evidence was not available at the time of hearing, and the evidence must not be merely cumulative.

UNU did not meet its burden under the Board’s Rule 4906-7-17(C). First the evidence that UNU sought to submit to the record is cumulative. UNU was able to present testimony in the Champaign Wind proceeding on low frequency noise. UNU witness Rick James testified that infrasound existed in houses above threshold levels. (UNU Ex. 19 at 29.) In his testimony he discussed a paper he coauthored on low frequency noise measurements as well as low frequency noise measurements he has conducted on operating wind turbines. (*Id.* at 8, 29.) UNU witness Dr. Jerry Punch testified extensively on his infrasound opinions as well as his experience at a Michigan project where Rick James took noise measurements. (UNU Ex. 23, Direct Testimony of Jerry Punch; TR 1826.) He also discussed a recent study in which the

authors claimed to have experienced health effects at a residence in Massachusetts. (UNU Ex. 23, Direct Testimony of Jerry Punch at 17.)

UNU cites to the case of *Kroger v. Ryan* (1911), 83 Ohio St. 299 for the contention that evidence is not cumulative if it relates to new and distinct facts. (UNU at 55.) The *Ryan* case does not support UNU's claim, as the new evidence in that case related to findings of noxious germs that led to the post-birth death of a mother, and not the estate administrator's charge of failure by the attending physician to remove all of the placenta. *See Kroger v. Ryan* (1911), 83 Ohio St. 299, 307. As the Court noted, "[c]umulative evidence, as we understand it, is additional evidence of the same kind to the same point." That is exactly what UNU sought to present in its motion, a select snippet from another state proceeding to support and bolster its claims on infrasound and its own witnesses' testimony. The Board correctly denied UNU's motion on the basis the evidence sought to be admitted was cumulative.

UNU argues that the report is not cumulative, and that it contains important new evidence that refutes CW's invalid assertions about LFN and clarifies David Hessler's testimony in important ways, based on statements in the report that he authored." (UNU at 56.) UNU cites to the case of *State v. Siller*, 2009-Ohio-2874 (slip op. June 18, 2009) for its contention that "contradictory evidence" is not cumulative evidence. (UNU at 56.) The *Siller* case related to new evidence of blood spatters on the front of the State's star witness, indicating that the witness actually participated in the crime contrary to his claims. *State v. Siller*, 2009-Ohio-2874 (slip op. June 18, 2009) In the prior trial, only one blood spatter had been discovered on the back of the witness' pants. (*Id.* at ¶ 27.) The appellate court found this evidence to not be cumulative because it established that the witness was in very close proximity to the beating. (*Id.* at ¶57.)

Unlike the facts in *Siller*, UNU attempted to present evidence through its motion to reopen the record that duplicates Rick James’ and Dr. Punch’s testimony that low frequency noise exists from turbines and causes adverse health effects. This is not “contradictory” evidence as UNU claims (UNU at 54-55) but rather cumulative evidence on the same point. In addition, UNU was able to cross-examine Dr. Kenneth Mundt, the only epidemiologist who testified in the Champaign Wind proceeding, on the infrasound issue. (TR 2863-2994; 3001-3002.) Given that UNU presented evidence from its witnesses on infrasound measurements and crossed Champaign Wind’s witnesses on low frequency noise, the Board correctly denied UNU’s request to reopen the record over a month and a half after the record closed to submit additional cumulative evidence on low frequency noise and infrasound. To do otherwise would set a dangerous precedent in future Board proceedings where parties can reopen the record to bolster their witness testimony and attempt to impeach opposing witnesses. The Board acted reasonably and lawfully in denying UNU’s motion to reopen the record.

3. The record does not support imposing noise limits at property lines.

UNU repeats an argument it made in the Buckeye I proceeding and in its initial brief, arguing that noise limits for the project should be imposed at the property line. (*See In re Buckeye Wind LLC* at 56.) UNU makes the claims that its members will not be able to sell or fully use their property if noise limits are not imposed at property boundaries. (UNU at 56.) UNU argues that Champaign Wind’s design goal of 50 dBA is “absurdly high” and that the same limit applied at residences should be applied to property lines. (UNU at 57.)

As an initial point, Champaign Wind has not proposed a noise limit at the property line of nonparticipating properties. Champaign Wind used 50 dBA at a property line as a design goal to assess the operational noise levels at property boundaries. (Co. Ex. 1 at Ex. O, p. 2.) As David Hessler explained, property line noise limits are not necessary because the point of a noise

regulation is to control noise where people are most of the time, and particularly at night. (TR 736; Co. Ex. 11 at A.10.)

Champaign Wind met its design goal, as worst case modeling shows that the design goal of 50 dBA will be met in all but a handful of instances where sound levels would be in the 52 dBA range. (Co. Ex. 1 at 76.) This small overage at the corners of the non-participating properties will be negligible as 52 dBA sounds essentially the same as 50 dBA. (Co. Ex. 11 at 7.) Mr. Hessler also testified that 50 dBA has been a common regulatory limit at houses for new projects and even at that level, a low level of complaints was observed. (TR 744.) UNU's claim that 50 dBA will ruin its members' use of their properties is contrary to the testimony in the record. The Board may also take note that sound levels in the existing environment often exceed 50 dBA, such as the 60 dBA levels created by birds chirping in the morning. (TR 1169.)

Finally, the Board has previously held that noise levels of 50 dBA are acceptable at property boundaries and residences. *See e.g., In re American Municipal Power-Ohio, Inc.*, Case No. 06-1358-EL-BGN, Opinion, Order and Cert., Mar. 3, 2008 at 24 (“[o]perational noise is expected to be below 55 dBA at the fence line, which is within generally accepted federal and state standards for sensitive land uses such as nearby residential facilities”); *In re Fremont Energy Center, LLC*, Case No. 00-1527-EL-BGN, Opinion, Order and Cert., May 21, 2001 at 16 (noting that the applicant “shall maintain sound levels resulting from the operation of the facility at or below 50 decibels A scale at the nearest noise sensitive receptor”). The conditions adopted by the Board related to complaint resolution (Condition 5) and operational noise levels (Condition 46) provide adequate assurances that operational noise levels will be acceptable and that any complaints can be addressed. (Certificate at 78, 88.)

The record supports the Board's rejection of UNU's arguments, and the Board may again reject UNU's argument on the application for rehearing.

4. The record does not support a finding that the visual impacts of the facility will degrade the surrounding area.

UNU claims as it did in its initial brief that Champaign Wind's turbines will destroy the community's landscape. (UNU at 58.) UNU relies on Julie Johnson's personal opinions on turbines and "pulsing red aviation warning lights" to support its claim. (*Id.*) Ms. Johnson admitted though that "pulsing red aviation warning lights" already exist around her house. (TR 972-973.) In fact, Ms. Johnson bought her house even though the cellular tower was constructed prior to her purchase of her property. (TR 993.) Ms. Johnson's claims about seeing all 108 turbines between both the Buckeye I and Buckeye II projects are also unfounded. Field reviews by Champaign Wind indicated that in many areas a significant number of the turbines will be at least partially screened by trees and structures. (Co. Ex. 1 at 42.)

UNU claims that "studies" show that the appearance of wind turbines can be perceived as intrusive that would prohibit "restful recovery." (UNU at 59.) UNU attempts to attribute these conclusions to Dr. Kenneth Mundt, but in reality UNU's claims come from portions of one article that were read into the record by UNU counsel. (TR 2957-TR2958.) UNU also mischaracterizes the text of the article in its initial brief. For example, UNU claims that the article states that visual noise and audible noise from turbines may cause stress that inhibits restful recovery. (UNU at 59.) The transcript actually reads "[i]nability to disregard visual and audible intrusion possibly adds to the impression that the environment is unsuitable for restoration." (TR 2959.)

Dr. Mundt pointed out the relevant point from that Pederson 2008 article, which is that the authors concluded that "... [a]nnoyance with noise or the visual impact of wind turbines does

not constitute disease or health effect.” (Co. Ex. 29 at 36.) UNU has no basis for claiming that the turbines will “destroy the community’s landscape” and that the visual impact of the turbines will affect the community’s lack of well-being. Champaign County is a working agricultural landscape that will be compatible with the facility. (Co. Ex. 1 at 42.) UNU’s application for rehearing on this point may be rejected.

5. The record does not support a finding that the setbacks are insufficient to protect against blade throws.

UNU continues its mischaracterizations as it did in its initial brief, by claiming the Board should expand setbacks to protect the public from “the hazards of blade throw that are so prevalent in the wind industry.” (UNU at 59.) UNU claims that these events are not only prevalent in the wind industry, but that blade throws can easily kill or seriously harm people and result in fires that would burn non-participant homes. (*Id.*) UNU relies on the testimony of William Palmer and Milo Schafner to argue that a turbine setback of 1,640 feet should be adopted to non-participating properties and a setback of at least 1,000 feet from public roads. (UNU at 71-74.)

The record does not support UNU’s demand for setbacks of 1,640 feet to properties and 1,000 feet from public roads. First, UNU ignores the fact that none of the witnesses could point to a member of the general public that has been injured as a result of a thrown blade. Champaign Wind witness Michael Speerschneider testified that “[t]here are hundreds of thousands of wind turbines operating throughout the world and there has been very low rate of blade failures and throw debris, and no cases of harm to the public.” (Co. Ex. 5 at 9.) Christopher Shears, an officer of Champaign Wind and Everpower’s Senior Vice President as well as a former Chairman of the British Wind Energy Association with over 18 years in the industry, and Robert Poore, from DNV KEMA and a 30 year wind industry veteran, both testified that they were not

aware of a member of the general public being injured by a blade failure. (Co. Ex. 12 at 3; Co. Ex. 9 at A.10.) Staff Witness Andrew Conway, a registered professional engineer, also noted that his research did not reveal any member of the public injured by wind turbines and that his research indicated that blade shear events were extremely rare. (Staff Ex. 7 at 2; TR 2547; TR 2493.)

Even UNU's own witness William Palmer noted that "the failure rate is relatively low as human experience dictates" and that "one is no doubt more likely to be killed in an automobile accident[.]" (UNU Ex. 22 at 19.) He also noted one is more likely to hit an animal when driving than to be hit by a piece of turbine blade. (TR 1432.) Mr. Palmer lives near an operating wind farm, and was not aware of any incidents of blade throw at that wind farm. (TR 1466.) He also testified that he drove down roads with turbines located within 110 feet of the roads. (TR 1467.) Mr. Palmer's testimony supports the testimony of Champaign Wind's witnesses that blade throw events are rare and of low risk to the population.

UNU ignores the fact that blade throw is a rare occurrence, and instead points to the Ohio Timber Road II blade throw incident as proof that blade throws "occur regularly in the wind industry." (UNU at 60.) UNU was allowed to introduce evidence on the blade throw event, including information on the incident from the case docket for the Timber Road II Wind Farm. UNU, however, puts its own spin on the incident, claiming that blades "disintegrated" and that blade parts spread over the "countryside." (UNU at 41.) UNU also corrects its misstatement in its initial brief that turbine blades are made of metal, yet still implying that pieces from the blades were thrown at high velocity. (*Id.* 60-61; *see* Conway, TR 2567-2568.)

UNU also claims that pieces "landed" in a family's yard across a public road when the truth is that smaller, lighter pieces of fiberglass, as noted by Staff witness Andrew Conway, were

blown around the site. (UNU at 61; *see* Conway, TR 2567-2568.) UNU's own witness, Milo Schafner acknowledged that smaller pieces were likely blown farther and that children were in the area picking up pieces. (TR 1319-1320.) Mr. Schafner traveled to the site days after the incident to make measurements on turbine pieces, unlike Mr. Conway who was on the site the day immediately after the incident. (TR 2568.). Mr. Schafner could not say for certain that pieces of the blades had not been moved (TR 1318) but again, acknowledged that the pieces were small with one piece being approximately 1 foot by 1 foot with the remaining pieces being six inches by three inches. (TR 1320.) The size of the pieces of fiberglass observed by Mr. Schafner support Mr. Conway's belief that smaller pieces were blown around the site. (TR 2568.)

Although UNU was able to put on evidence about the Timber Road II incident, it argues that its efforts to investigate the Timber Road II event were blocked by the wind farm's operator, EDP Renewables, Champaign Wind and the ALJs. (UNU at 43.) UNU requests that the discovery phase and hearing be reopened to allow them to further investigate the Timber Road incident. (*Id.*) To the contrary, UNU was allowed to introduce testimony on the Timber Road II incident. As to the quashing of UNU's subpoena on EDP, UNU alone bears responsibility because it served overly broad discovery requests which were appropriately quashed.

UNU also claims that the wind industry is concealing blade throw information. (UNU at 63.) UNU presents no evidence other than mischaracterizing its own witness' testimony. UNU claims that William Palmer testified that a report prepared by Sandia National Laboratories found that the wind industry is "concealing" its incidents of blade throw. (UNU at 63-64.) Mr. Palmer did not make such a statement in his testimony, instead noting that information related to failures is proprietary and not accessible to the public. (UNU Ex. 22 at 12.) Another example of

UNU's mischaracterization of the record is its continued reliance on blade failure incidents at a high school in Sandusky, Ohio. (UNU at 60.) As Staff witness Andrew Conway pointed out at the hearing, these were not commercial grade wind turbines. (TR 2509-2510.)

UNU also continues to rely on a database spreadsheet that Mr. Palmer had attached to his testimony to support its claim that blade failure events are not rare. (UNU at 64.) This evidence was not admitted at the hearing and a motion to strike the database and all references to it in Mr. Palmer's testimony was appropriately granted. Yet, UNU ignores that ruling and cites to that exhibit to support its arguments at page 64 in its brief. (UNU at 64.) For that reason, the Board should not consider that portion of UNU's brief because the database was not admitted into evidence.

UNU then claims that there are a "myriad of reasons that can cause turbine blades to break." (UNU at 67.) That is a mischaracterization of the testimony in the record. Robert Poore, a longtime wind industry veteran and engineer testified, that blade throw is a very rare event. (Co. Ex. 9 at A.11.) He noted that blade throw events are preceded by some type of blade failure. (*Id.* at A.12.) He said a blade failure occurs when the structural loads applied to a blade exceed the structural capability of the blade. (*Id.*) He then listed five categories of blade failures, including manufacturing defects, inadequate blade maintenance, high atmospheric loads, inadequate blade design, and excessive loads created by turbine-level controls. (*Id.* at A.12.) He noted that he was not aware of any blade throw incidents as a result of inadequate maintenance and that turbines would be shut down during high atmospheric load events, greatly reducing the distance of any "thrown" blade. (*Id.*) Mr. Poore's testimony contradicts UNU's claims that there are a myriad of reasons that cause turbine blades to "break."

Mr. Poore also presented a list of practices that can reduce the already low risk of blade failures. This list included third party oversight of the manufacturing process and quality assurance processes, inspections based on the experience of the selected turbine model, using proper maintenance practices, limiting remote fault resets (such as what occurred in the Timber Road II incident) and training. (Co. Ex. 9 at A.13.) Champaign Wind witness Michael Speerschneider testified that many of these practices will be used by the project. Mr. Speerschneider testified that the Everpower's operations personnel "will commonly go to those manufacturing facilities to get a tour of the facility to see how things are done, to see how they meet these standards. It is very important to us." (TR 310.) He also testified that Everpower conducts regular inspections and repairs minor defects on blades. (TR 318.) Repairs are made to prevent a minor issue from becoming a major issue. (TR 319.)

Mr. Speerschneider also testified about the many levels of safety measures that would be triggered prior to a blade break. (TR 319-320.) For example, he noted that operators have the ability to "tell the slightest little vibration on the operation of the blade, on the rotational operation on the blades, sensors that are put ... throughout the turbine." (TR 320.) He also discussed both Everpower's control center and the operator control centers, where hundreds of data points are coming in each second on and allow trained operators to monitor turbine performance. (*Id.*) Mr. Speerschneider also testified on lightning strikes, noting that all turbines would have lightning protection systems and that actual blade damage on modern turbines is rare. (TR 307.) His testimony on the practices Champaign Wind would utilize for its project are relevant, unlike UNU's attempt to investigate the practices of a separate company's operation of the Timber Road II project.

UNU also tries to claim that manufacturer safety manuals support Mr. Palmer's 1,640 setback guidance. (UNU at 73.) UNU cites to a RePower manual instructing operators to cordon off an area of 1,640 feet in the event of overspeed or fire. (UNU at 73.) Similarly, UNU cites the Gamesa safety manual as cordoning off an area 400 meters within a burning turbine. Both of these instances involve dangerous events that, as Champaign Wind witness Christopher Shears testified, would be akin to measures taken in the event of a gas leak by a road. (TR 909-910.)

UNU also claims that a Vestas manual requires employees to stay 1,300 feet from a turbine unless necessary to approach. (UNU at 73.)) UNU witness Julia Johnson attached a page purportedly from a Vestas safety manual, obtained through the Internet. (UNU Ex. 17 at 7.) As an initial point, the Vestas turbine is not relevant to this matter because it has been dropped from the application. Regardless, no such reference cited by Ms. Johnson can be found in the complete Vestas Health Safety and Environment Manual, included in the application at Exhibit R. Moreover, when Staff witness Andrew Conway contacted Vestas he was informed that Vestas does have a minimum setback recommendation and that Champaign Wind was actually exceeding that guidance. (TR 2538.) Mr. Conway also testified that GE required a general setback of 1.1 times the height of the turbine to residences, a setback that is less than the Board's recommended setback to residences (TR 2499), and that he examined setbacks to roads taking into consideration that Minnesota has a setback of 250 feet to roads. (TR 2488-2489.)

Regardless of UNU's claims, the facility as sited provides setbacks sufficient to protect against blade throws. Blade throw is an extremely rare event and the risk to the general public is minimal if not negligible. Witness testimony was very clear on that point. As Robert Poore, from DNV KEMA testified that, in his 30 years working in the wind industry, "I have never

known a blade throw to injure anyone.” He also testified that “[b]lade failures are rare but do occur, and blade throws are rarer yet. Despite over 200,000 turbines installed worldwide, it is unusual for even those of us embedded in the industry to hear about blade throw.” (*Id.* at A.11.) He also noted that “[t]he wind farms that I have worked on and visited over my years in the wind industry have employed a range of setbacks from structures, property lines, and roads typically from one times to two times the total height of the turbine, or tip height.” (Co. Ex. 9 at A.8.) The minimum setbacks proposed for the facility’s turbines, which are very standard in industry and that exceed manufacturer recommendations, are sufficient to protect the general public from the already low risk of blade throw. The Board appropriately rejected UNU’s request for a 1,640 setback to property lines and a 1,000 feet setback to public roads. UNU’s application for rehearing on this point should be rejected.

6. The record does not support a finding that the setbacks are insufficient to protect against ice throw.

UNU believes that turbines should be setback 1,000 feet from public roads and non-participating properties property lines. (UNU at 79.) UNU’s recommendation for public road setbacks is based solely on the testimony of William Palmer, who testified that 9 turbines were within 1,000 feet from the road. UNU also implies that turbine safety manuals impose a 1,000 feet setback in regard to ice throw. (UNU at 78.)

UNU is wrong on all points. First, Mr. Palmer, admitted that his measurements were estimates that were rounded up or down by 50 feet. (TR 1456.) He gave no justification for his ice throw setback, other than simply adopting his approach in the nuclear safety industry which is that barriers must be imposed to prevent an event if there is a possibility that the event may occur. (TR 1468-1469.) He also did not perform any calculations on ice throw distances or the risk a person being hit by falling ice, a risk this Board has previously found to be adequately

addressed through the imposition of conditions requiring ice warning systems and instructions to workers on the potential hazards of icing conditions. (TR 1443, 1472; *In re Black Fork Wind Energy LLC*, Opinion, Order and Cert., Jan. 23, 2012 at 58.)

Second, UNU does not cite to any turbine safety manual that mandates a 1,000 feet setback for ice throw. Only GE has a recommended setback for ice throw, but only if ice detectors are not used. As Staff witness Andrew Conway testified, GE has a setback recommendation of 1.5 times the sum of the hub height plus the rotor diameter to residences, public roads that are more than lightly traveled, parking lots, public buildings and office buildings. (TR 2499.) He agreed that the GE safety manual only recommends use of this setback if ice detectors are not used on a turbine. (TR 2581). All of Champaign Wind's turbines will have ice detectors along with vibration monitors, negating the use of the GE setback. (Co. Ex. 1 at 82.) Worth noting is that the Board's recommendation on ice throw is more conservative than the GE recommendations, which accounts for ice detectors on turbines.

UNU claims that certain roads are heavily traveled and therefore turbines 101, 127, 106 and 130 are too close to the roads. UNU points to no evidence for this claim other than the testimony of Julia Johnson. UNU also ignores the fact that turbine will have ice detectors and Mr. Conway's consideration and review of roads when determining roads that required a setback. (TR 2488-2492.) Mr. Conway also noted that Minnesota has a setback from roadways of 250 feet. (TR 2489.)

UNU also claims as it did in its initial brief that its members will be harmed because they regularly travel on local roads. (UNU at 52.) UNU witness William Palmer, however, testified that drivers have a greater risk of hitting animals or getting into car accidents than being hit by turbine pieces. (TR 1432; UNU Ex. 22 at 19.) In fact, no member of the general public has been

killed or injured by falling ice. (Co. Ex. 5, Speerschneider at 9-10; TR 316; Co. Ex. 12, Shears at 3.) Mr. Palmer also testified that he was not aware of any ice throw injury from the 110 commercial wind farm operating near his home in Canada. (TR 1466.) That wind farm has turbines within 110 meters of roads. (TR1467.)

UNU also continues to discount the fact that all turbines will have ice detection equipment. (UNU at 80; Co. Ex. 5 at 10.) UNU points to Mr. Palmer's testimony that ice detection does not work, but Mr. Palmer has never worked in the wind industry and has not operated a wind turbine. (TR 1465-1466.) UNU claims that Mr. Palmer as a safety expert is qualified to opine on this subject, but the fact remains he has never operated a wind turbine, let alone worked in the wind industry. UNU also tries to claim that GE has found that ice detectors are not reliable. (UNU at 80.) GE, however, clearly has confidence in ice detectors because as Mr. Conway noted, the GE safety manual only recommends use of a ice throw setback if ice detectors are not used on a turbine. (TR 2581). All of Champaign Wind's turbines will have ice detectors along with vibration monitors, which, with the GE setback proposed by Staff, will significantly reduce the already low risk of ice throw to the public and local residents. (Co. Ex. 1 at 82.)

The risk of injury from ice will be further minimized by the Board's imposed conditions. Condition 41 (worker instruction) and Condition 42 (ice warning systems) will minimize the already negligible risk to the general public of ice throw. UNU has not provided any justification for its demand that turbines be setback from roads and non-participating property boundaries by 1,000 feet. Accordingly, the Board correctly found, as it did in the Buckeye I proceeding, that the impact of ice throw on the surroundings is minimal. (*In re Buckeye Wind LLC* at 43.)

7. The record supports a finding that shadow flicker from the facility will not cause adverse impacts.

The record does not support UNU's contention that the shadow flicker is "fundamentally flawed" because allegedly the actual house size was not considered in the analysis. The model used very conservative assumptions, including turbines operating during all daylight hours, and a receptor that was exposed to light on all sides. (Co. Ex. 1 at Ex. P, pp. 2, 4.) UNU believes that these conservative assumptions should be ignored, instead claiming that a 1 by 1 meter receptor dimension has skewed the results by over estimating the shadowing effect of hills. UNU does not give any example of receptors where the size of the hypothetical receptor would be affected. Likewise, UNU fails to quantify or explain how the alleged overestimation of topographical shadowing through the use of a 1 by 1 meter hypothetical receptor outweighs the conservative assumptions in the model.

The record also does not support UNU's contention that shadow flicker should be limited at all locations on a parcel. As Mr. Speerschneider testified, the 30 hour per year threshold for shadow flicker is a typical level used in the industry that has resulted in few complaints at wind projects, including other projects of Champaign Wind's parent company, Everpower Wind Holdings, Inc. (TR 265.) If levels applied to residential structures has been found to lead to few complaints, then the logical conclusion is that shadow flicker on other parts of the property will not be an issue.

UNU's concerns about Condition 47 are also unfounded. Condition 47 provides adequate protection to ensure that nonparticipating residential structures are limited to less than 30 hours of shadow flicker per year. UNU believes that this condition defers consideration of important siting issues. To the contrary, the condition allows Staff to enforce a level of shadow flicker that this Board has previously found to be acceptable. (*See e.g., In re Buckeye Wind LLC*

at 47.) The condition requires the Applicant's operation of the facility to not exceed shadow flicker levels in excess of 30 hours a year, which does not require a stopwatch to measure as claimed by UNU because shadow flicker can be predicted to the minute based on the location of the receptor, the turbine and the sun. The condition also includes requirements to conduct additional analysis acceptable to Staff and requires mitigation of complaints through the complaint process. The condition, however, does not require residents to undertake unwanted mitigation steps, as UNU claims. Read in its entirety, the condition provides adequate assurance that the project as sited and approved is in the public interest, convenience and necessity and represents the minimum environmental impact.

The Board should also reject UNU's request that language be added to the Certificate that Champaign Wind provide alternative mitigation measures. Absent an agreement with a landowner, Champaign Wind cannot force unwanted mitigation measures on a landowner. Condition 5 along with Condition 47 provide adequate assurance for non-participating landowners that shadow flicker issues will be resolved. As to UNU's claim that Condition 47 is unenforceable, that is not the case. Modeling provides a very good indicator of sites that under extremely conservative conditions will exceed 30 hours per year of shadow flicker. That modeling analysis must be provided to Staff prior to construction. (Certificate at 89.) Condition 47 also requires Champaign Wind to conduct a review of the impact of all project-related shadow flicker complaints. (Certificate at 89.) This provides individual analysis and further review of complaint situations. UNU's request for rehearing on this point should be rejected.

E. The Record Establishes That the Facility Will Comply With Chapter 4561.32, Revised Code.

UNU claims as the City of Urbana did in its initial brief, that the Ohio Office of Aviation has failed to approve all turbine locations. As Champaign Wind pointed out in its initial

response brief, all turbine locations have been approved by the FAA. Moreover, the Ohio Office of Aviation has approved all turbine locations, as confirmed by Staff. UNU implies that this did not occur, but the Staff Report makes it clear that confirmation took place. As stated in the Staff Report, “In accordance with ORC Section 4561.32, Staff contacted the ODOT Office of Aviation during review of this application in order to coordinate review of potential impacts the facility might have on public use airports. The Applicant filed with the ODOT Office of Aviation and received notices of clearance for all turbines associated with this case.” The record is clear that Staff confirmed with the ODOT Office of Aviation that all turbine locations were cleared. UNU’s application for rehearing on this point should be rejected.

F. The Record Supports the Board’s Finding That Concerns With Property Values Do Not Render the Project Contrary to the Public Interest, Convenience and Necessity.

UNU continues to argue that property values will be negatively affected by the Buckeye II Wind Farm. (UNU at 84-85.) UNU’s argument rests solely on the testimony of Michael McCann. Mr. McCann is a real estate broker by trade and training. (UNU Ex. 18.) As such he has experience in estimating current property values, based on current sales data. In this case though, Mr. McCann goes beyond his training and experience and projects what future relative real estate values would be. Specifically, he finds that properties near wind turbines will experience a drop in value from what would be their value would be otherwise.

Mr. McCann bases his projections on the assessment of 5 property sales by a developer in Ontario, Canada (TR 1085) and his own review of the sale of a cottage located in Massachusetts. (UNU at 62-63.) The Ontario, Canada properties involved secondary sales by a wind developer after allegedly buying homes from dissatisfied residences. (TR 1085.) Also, Mr. McCann reviewed sales in Illinois consisted of 53 sales that were not paired sales, rather they were only “near/far” relationships. (TR 1092-1093.) The problem with Mr. McCann’s assessments are

threefold. First, he has not controlled his real estate price comparison for the many variables that can affect prices. There is no analysis that ties the isolated studies he relies on. If the data he looked at came just from anti-wind internet sites then the selection is biased. Second, Mr. McCain's studies have very small sample size and were not tested to see if they are statistically significant. Thus, his finding may be the result of random occurrence as opposed to an underlying factor. Finally, Mr. McCann lacks both formal education and field experience which would qualify him to conduct true statistical studies, and a true statistical study is what would be needed in order to determine that the factor of distance to a wind turbine affects future real estate sale prices.

UNU tries to convince the Board to accept Mr. McCann's opinion based on the hand selected, small sampling of sales data in lieu of Dr. Mark Thayer's testimony. Dr. Thayer testified that in his opinion, the proposed facility would have no impact on local property values. (Co. Ex. 8 at A.11.) He based this finding on a peer reviewed, comprehensive statistical study he co-authored and done by the Lawrence Berkley National Laboratory with funding by the Department of Energy. Rather than a handful of selected properties, the Lawrence Berkley study analyzed 7,459 single family home sales before, during and after wind farm development in the United States. (*Id.* at A.7, A.11.) He also noted that in addition to the Lawrence Berkley National Laboratory study, four other large empirical studies have been conducted since the Lawrence Berkley study in December 2009 as to the impact of wind farms on nearby property values. (*Id.* at A.5.) Those four subsequent studies came to the same conclusion that "post-operation/construction, there was **no identifiable effect** of wind power projects on nearby residential property values." (*Id.*, emphasis in original.)

UNU discounts Dr. Thayer's statistical analysis of 7,549 separate property transactions and the multiple variables that were developed for the data set. (UNU at 85.) The gist of UNU's argument is that only 2% of the property sales studied occurred within a mile of a wind turbine in the Lawrence Berkley National Laboratory (LBNL) study, but that comment shows a basic misunderstanding of a multivariable regression study. Because the LBNL study is looking at the impact of distance from a turbine, it has to eliminate the other factors that affect price, such as location (e.g., proximity to work, schools, and recreational facilities), size and amenities of the houses, and scenic view. Failure to control for the other variables that affect price, make pure price comparisons inconclusive. For example, the drop in the sale price of the house Mr. McCann testified to that was bought from the owner by a wind farm operator and resold for less may be due to a general rapid decline in real estate price such as was experienced nationally in 2008, or deterioration of the house abandoned by its owner as well as by the construction of a turbine nearby. That is the reason a true statistical study is needed to not just observe changes in price, but see if those changes correlate to the proximity of a wind turbine.

As for the ability of Mr. McCann to conduct such a study, on the stand he admitted he had no training in statistics, lacked even a college degree and on cross-examination admitted he did not have a basic understanding of a regression analysis. (TR 1053-1054.) Likewise, UNU's argument shows a fundamental misunderstanding of statistics and the analysis utilized in the LBNL study. As Dr. Thayer explained on cross-examination, each home represented a data point. (TR 485.) Along with the sale price, a dependent variable, other characteristics of each home were considered such as physical characteristics, vistas, views of turbines etc. (TR 486.) No averaging of sales was done. (*Id.*) Rather three groups were created for analysis, homes within 3,000 feet of a turbine, 3,000 feet to 1 mile, and 1 mile to 3 miles, 3 miles to 5 miles and

a control group outside of 5 miles. (TR 519.) The result of the statistical analysis, as shown in Figure 6 of Dr. Thayer's testimony, was that there was no statistically significant relationship between view of turbines and home sale prices. (Co. Ex. 8 at 12, 14.) Further, contrary to UNU's claim, data "pooling" is not involved in a regression analysis.

UNU also critiques the LBNL study because the study excluded data from four Pennsylvania homes purchased by a developer. (UNU at 86.) On cross examination, Mr. McCann admitted that he was not aware of the circumstances of the sales of two of the four Pennsylvania homes, and did not know why the sales were excluded from the study. (TR 1057-1060.) He also could not say whether data points that were more than six standard deviations should have been excluded from the study (TR 1062) because they were outliers although that was a complaint of his in his direct testimony. (UNU Ex. 13 at 5-6.)

Although Dr. Thayer's testimony about the LBNL study and three other studies implies otherwise, UNU still advocates for a property value guarantee agreement as it did in the Buckeye I proceeding. The evidence in this record does not support such a guarantee and supports the Board's finding that property values will not be affected by the facility.

G. The Administrative Law Judges' Procedural Rulings During Discovery and at the Hearing Were Appropriate.

UNU repeats its claim that its due process rights were violated based on evidentiary rulings during discovery and at the hearing. Due process was not denied to any party involved in the hearing process. Due process involves notice and an opportunity to be heard. *Mathews v. Eldridge*, 424 U.S. 319, 96 S.Ct. 893 (1976). All parties were provided notice of the hearing in advance and they participated throughout the 12 days of hearing in this matter. The Board correctly upheld the administrative law judges findings on UNU's evidentiary and discovery disputes.

1. The ALJs properly denied UNU's motion to compel the production of Document Request 44.

UNU argues again that the ALJs inappropriately denied UNU's motion to compel the production of Document Request 44, which sought correspondence and other documents related to or referring to any part of the application or any part of its drafts or preliminary versions of the application. (UNU at 88-89.) UNU argues that these documents may have provided or led to the discovery of useful, relevant information such as inconsistent statements from those contained in the final application. UNU also contends that there is insufficient information upon which to find that the documents are privileged, as Champaign Wind had argued. (*Id.*) UNU requests that the Board "remand" the case or reopen the record so that discovery about these documents can take place and any additional evidence can be presented. (*Id.*) The ALJs denied the motion to compel production of Document Request 44 on the ground that it was not relevant to the current application and not reasonably calculated to lead to admissible evidence. (Entry, November 7, 2012.) This is not UNU's first attempt to obtain different versions of an application. UNU made a similar discovery request in Buckeye I, which was denied by the ALJ, and later affirmed by the Board. (*In re Buckeye Wind LLC* at 10-11.) There is nothing conceptually different involved here with Document Request 44 and the Board decision to affirm the ALJs' decision was appropriate. UNU's request for rehearing on this point should be rejected.

2. The ALJs properly precluded testimony and admission of a copy of a draft excerpt from the Staff Report.

UNU repeats its argument that the administrative law judges inappropriately precluded testimony and admission of a copy of a draft excerpt of the Staff Report related to blade throw. (UNU at 87-88.) UNU argues that the draft excerpt demonstrates Mr. Conway's acceptance at that time of "all of [Champaign Wind's] safety representations at face value," despite a blade throw incident at the Timber Road II wind farm. (*Id.*) The ALJs precluded some questioning

and the draft excerpt on the ground that the draft excerpt was not relevant. (TR 2555-2557, 2584-2586.) It was appropriate for the ALJs to preclude additional questions of the Staff witness regarding an early draft of a portion of the Staff Report and to preclude admission of that portion. UNU *was* able to ask Mr. Conway several questions about the draft. (TR 2554-2555.) The ALJs acted within their discretion to determine that further evidence on that point was not admissible and to focus the parties on the Staff Report that was filed. UNU was, nonetheless, able to make its point; there was no error. The Board appropriately upheld the ALJs decision and UNU's application for rehearing on this point should be rejected.

3. The ALJs properly denied UNU's motion to compel the production of Document Request 74.

UNU argues that the ALJs inappropriately denied UNU's motion to compel the production of Document Request 74, which sought *all* documents obtained from Invenergy related to any of the wind turbine sites in the Project Area. (UNU at 89-90.) UNU attempted to inquire about the documents obtained from Invenergy, but the ALJs precluded a number of the questions on the ground that is not relevant. (TR 371-374.) UNU argues that this discovery and its questions during the hearing should have been permitted because it wants (a) to learn what Invenergy information still exists and (b) to pursue sanctions against Champaign Wind for any documents that it destroyed. UNU requests that the Board reopen discovery, require Champaign Wind to produce all existing records, direct Champaign Wind to identify any destroyed documents, and provide the parties "with the opportunity to seek appropriate sanctions against [Champaign Wind] for the spoliation of evidence." (*Id.*) The Invenergy documents sought in Document Request 74 are not relevant, and the request was overly broad and overly burdensome. UNU has not presented any new or different argument to justify a reversal of the ALJs' ruling or

the Board's decision on rehearing. UNU's application for rehearing on this point should be rejected.

4. UNU's request to reopen discovery and the hearing should be rejected.

At page 90 of its application for rehearing, UNU argues that the Board's reliance on Champaign Wind's witness testimony about their experience in the industry is at odds with the Board's evidentiary and discovery rulings in the Certificate. (UNU at 90.) UNU does not make any specific arguments as to any specific evidentiary ruling. The Board, however, may note that UNU throughout discovery made overly broad and unreasonable requests. UNU did not engage in targeted discovery in this proceeding, and as a result its discovery was either not relevant or so broad to be burdensome and not warranted. UNU's request for rehearing as presented at page 90 without identifying a specific evidentiary ruling or discovery request should not be considered by the Board.

5. The subpoenas to third parties related to noise limits were properly quashed.

UNU contends that the ALJs erroneously quashed subpoenas to third parties, precluding UNU from obtaining "any meaningful information about whether [the Leq] noise limit is effective to prevent noise problems at Ohio's operating wind farms." (UNU at 41.) The ALJs determined that the third-party subpoenas were overbroad, sought information unrelated to this proceeding, and were burdensome. (Entry, Oct. 22, 2012, at 10-11.) The ALJs weighed the scope and burden associated with UNU's subpoenas and recognized that the subpoenas were served on third-party entities, not participants in the proceedings. The ALJs correctly found that the subpoenas sought a host of information unrelated to the specific matter at hand, and that it would be burdensome for those third parties to comply. The fact that UNU could not pursue its fishing expedition via discovery does not justify the Board altering this ruling from the ALJs.

Moreover, it is worth noting that UNU was allowed to ask Staff witness Raymond Strom questions about noise complaints on the Timber Road II facility when cross-examining Mr. Strom. (TR 2798-2799.) The Board appropriately affirmed the ALJ's ruling should.

6. UNU's third-party subpoenas related to shadow flicker information were properly quashed.

UNU also contends that the ALJs erroneously precluded UNU's discovery by quashing third-party subpoenas that sought information related to shadow flicker complaints at other wind farms, and erroneously allowed Company witnesses Speerschneider's and Poore's testimony about shadow flicker. (UNU at 93; 95-97.) The ALJs made the correct ruling, after considering the scope and burdens associated with the subpoenas upon those third parties. The ALJs properly weighed and considered the various interests. The subpoenas were properly quashed, and the Board appropriately affirmed the ALJ's ruling.

7. The ALJs properly precluded UNU's attempts to present evidence about blade throw incidents.

UNU argues that the ALJs erroneously denied UNU's attempts to discover and present evidence about blade throw incidents. (UNU at 93-94.) As previously stated, the ALJs properly determined that the scope and burden of the third-party subpoenas was too vast. During the hearing, UNU questioned Staff witness Conway about the distances that blade pieces flew at Timber Road II. However, when the questions addressed the scope of the Staff investigation about that incident, the ALJs properly sustained objections. (TR 2567-2575.) UNU still presented evidence about the blade throw incident and the impact it had on the Staff's evaluation of Champaign Wind's application, particularly with regard to setbacks. Cross-examination was properly limited because the details of the Staff investigation of the Timber Road II incident is not at issue in this proceeding. The Board correctly affirmed that the ALJs appropriately controlled the focus of the hearing. No error occurred.

8. The Record supports the Board's decision to affirm the ALJs admittance of the shadow flicker report contained in the application.

At page 95, UNU claims that the ALJs should not have admitted the shadow flicker report contained in Champaign Wind's application. UNU argues that Champaign Wind witnesses Michael Speerschnieder and Robert Poore were not qualified to testify on shadow flicker. (UNU at 96.) The Board found that both Mr. Speerschneider and Mr. Poore were "qualified to offer testimony regarding the shadow flicker report in the application and that Staff witness Strom was also qualified to discuss this portion of the Staff Report. (Certificate at 53).

In making its argument, UNU ignores the experience of Champaign Wind's witnesses. UNU claims that simply because Mr. Speerschneider and Mr. Poore did not prepare the shadow flicker report for the facility, all of Champaign Wind's evidence on the impact of shadow flicker is hearsay and that the Board erred by admitting the shadow flicker report and the testimony of Messrs. Speerschneider and Poore. (UNU at 98.)

None of UNU's arguments have merit. Michael Speerschneider holds a B.S. in Physics and a B.A. in environmental studies from the University of Pittsburgh. (Co. Ex. 5 at 2.) He also holds a M.S. in Technology and Policy and a M.S. in Materials Science and Engineering from the Massachusetts Institute of Technology. (*Id.*) Mr. Speerschneider has worked for Everpower Wind Holdings, Inc., Champaign Wind's parent company, since 2004 and has been involved in all facets of its developed projects and operations. (*Id.*) Both his education in physics and engineering along with his experience in the wind industry give him the necessary experience to testify about shadow flicker.

Robert Poore also has sufficient training and education to testify about shadow flicker. Mr. Poore holds a B.S. in Mechanical Engineering from the University of Vermont and has been in the wind industry for over 30 years. (Co. Ex. 9 at 1.) He has extensive experience working

with, on, and around wind turbine and wind energy project sites and is aware of the issues impacting the industry. (*Id.*) He also had a colleague at his company and under his direction analyze the methodology, assumptions and results of the shadow flicker studies, finding that the methods used were typical of best practices in the wind industry. (*Id.*)

Contrary to UNU's characterization of the testimony, both Mr. Speerschneider and Mr. Poore were able to answer questions about the shadow flicker report, the methodology used and the assumptions. For example, Mr. Speerschneider discussed at length the various inputs that go into the model. (TR 267-268.) He also explained to UNU counsel that calculating shadow flicker is essentially a basic physics problem based on the exact known location of the sun, the height of the turbine blades and the location of the structures. (TR 263.) Mr. Poore also discussed the modeling used and had no issue with the output from the modeling. (Co. Ex. 9 at 9-10.) Champaign Wind's witnesses were more than qualified to discuss the shadow flicker model and the minimal effect that shadow flicker has on neighboring residences when the amount of flicker is kept under 30 hours per year. Likewise, Mr. Strom was more than qualified to review the shadow flicker report and Champaign Wind's application in drafting the shadow flicker sections of the Staff Report.

Again as Mr. Speerschneider testified, calculating shadow flicker is essentially a basic physics problem based on the exact known location of the sun, the height of the turbine blades and the location of the structures. (TR 263.) It is not "highly technical" as UNU claims and does not require a separate discipline of study to understand and analyze a shadow flicker report. UNU's request for rehearing on this point should be rejected.

9. The ALJs properly admitted the testimony of Michael Speerschneider and Hugh Crowell.

UNU also argues that the ALJs should not have permitted Mr. Speerschneider to testify about and to present Company Exhibit 1 (the application) over objection. (UNU at 98.) UNU also argues again that Mr. Speerschneider should not have been permitted to testify regarding shadow flicker because he is not an expert in the area, despite the fact that he was testifying solely as sponsor of the application. (UNU at 98.) Similarly, UNU argues it was error to permit Mr. Crowell to testify over objection about and support Exhibit E of Company Exhibit 1, related to a transportation study. (*Id.* at 99.) The Board should reject these arguments.

UNU's arguments that Messrs. Speerschneider and Crowell should not have presented expert testimony and supporting exhibits fail on their merits. The Board has a long-standing practice to allow an applicant to sponsor an application and exhibits thereto through the testimony of a witness that is an officer or an experienced employee of the applicant. (*In re Buckeye Wind LLC* at 12.) Moreover, the Board has admitted testimony of a witness and related exhibits where the witness demonstrates that the exhibits or studies were performed at the applicant's request, under the witness' direct or indirect supervision, and that the officer is sufficiently knowledgeable about the information in the exhibit or study to offer testimony. (*Id.*) Mr. Speerschneider has the requisite background – he is an officer of Champaign Wind, and was responsible for the certification process of this application. Mr. Speerschneider has numerous years of experience in the wind industry. Additionally, Mr. Speerschneider was the company's first witness and one of the stated purposes for his testimony was to introduce the company's case. (Co. Ex. 5 at 2.) Indeed, Mr. Speerschneider's testimony on cross-examination addressed questions on many topics in the application. The ALJs and the Board did not err in permitting Mr. Speerschneider to testify about and to present the application in this matter.

Similarly, Mr. Crowell was presented to describe the studies that his firm undertook for Champaign Wind, as well as the permits that will need to be obtained before construction. (Co. Ex. 19 at 2-3.) Mr. Crowell is a scientist in ecology and biology. Among other things, Mr. Crowell oversaw the various studies performed by his firm for Champaign Wind. Mr. Crowell's company conducted a surface water delineation study, threatened and endangered species survey study, transportation route survey, desktop geotechnical study, and desktop hydrogeological study. (*Id.* at 3-6.) Given Mr. Crowell's supervisory and management position over the various studies, the ALJs were well within their authority to determine that Mr. Crowell could testify about Exhibit E. Moreover, the ALJs correctly determined that, rather than strike the testimony and exhibit, the evidence would be evaluated and given its appropriate weight. (TR 1607-1611.) It is also important to note that Exhibit E was admitted with Mr. Speerschneider's testimony as part of the application (Company Ex. 1), and that he answered questions on that exhibit during his cross-examination. (TR 427; TR 109-117).

UNU concludes its argument by claiming that the ALJs and Board's decisions result in one standard for Champaign Wind and a different evidentiary standard for UNU. (UNU at 99-100.) UNU claims that this resulted in an arbitrary exercise of administrative agency discretion. (UNU at 100.) To the contrary, the Board's practice of allowing a company witness to sponsor an application is not arbitrary for the reasons discussed above. Moreover, Mr. Speerschneider's testimony on cross-examination showed his deep understanding of the application contents and the various aspects of citing a wind farm. UNU witness William Palmer, to the contrary, had no experience in the wind industry and attempted to introduce a voluminous spreadsheet for which he was not responsible for compiling, that he admitted was compiled by third parties via second hand information, and that contained information that was irrelevant to the proceeding and

prejudicial. Likewise, UNU witness McCann attempted to introduce documents which were outside his expertise. The ALJs' and the Board's exercise of administrative discretion in governing the proceedings was appropriate, consistent with both the Board's and the PUCO's prior proceedings, and not arbitrary. UNU's application for rehearing on this point should be rejected.

H. The Record Does Not Support UNU's Proposed Condition Revisions.

UNU closes its application for rehearing asking the Board to revise certain conditions. (UNU at 100.) First, UNU asks that the Board include Condition 20 from the Staff Report in the Certificate. (UNU at 101.) As Mr. Speerschneider noted in his testimony, Condition 20 appears to have been copied from a transmission line report and relate to a transmission right of way. (Co. Ex. 5, at 17.) Since that is not applicable to this facility, which will have buried collection lines primarily running in open areas and turbines located in open fields, Staff agreed that the condition should be deleted in its entirety. (TR at 2030-2031; 2138.) UNU provides no reason why the various mitigation measures for streams included in Champaign Wind's application as well as the Certificate conditions regarding environmentally sensitive areas are not sufficient. (See Company Ex. 1 at 120-121; Certificate at 77 and 80-81.)

UNU also asks that the Certificate be revised to require financial assurance to both county commissioners and township trustees. As discussed in Champaign Wind's response to Champaign County's application for rehearing on this point, the Board is under no obligation to require financial assurance for pre- and post-construction roadwork for a major utility facility. The Board did so in this proceeding, but only required the Applicant to provide assurance to the Board of Commissioners of Champaign County. This was not an unlawful or unreasonable act by the Board. Under Condition 29, the Applicant will provide financial assurance to one entity, and avoid having to provide financial assurance to each township within the project area.

Condition 29 also avoids the issue of the County Engineer having to decide how to allocate any call on financial assurance between multiple townships if the Applicant is unable to perform the necessary roadwork.

UNU next argues that a condition should be added to the Certificate requiring Champaign Wind to pay the monthly cable fees for any residence for which a cable hook-up or direct broadcast satellite reception system is required as mitigation for television interference. Such a revision to the Certificate is not necessary.

Champaign Wind stated in its application that “[i]f Facility operation results in impacts to existing off-air television coverage, the Applicant will address and resolve each individual problem by offering cable television hookups or direct broadcast satellite reception systems, as well as investigating methods of improving the television reception system.” (Company Ex. 1 at 154.) UNU request for a blanket requirement that Champaign Wind pay the monthly package fees for service ignores that each complaint will be handled on an individual basis. If a satisfactory result cannot be reached, a landowner can utilize the complaint resolution process in the Certificate (Condition 5). What is not required is a blanket condition that would require Champaign Wind to pay for monthly cable or satellite charges, charges which are package dependent and vary in amount.

Lastly, UNU asks the Board for a Certificate condition prohibiting Champaign Wind from entering into what UNU characterizes as “good neighbor agreements” with local residents. (UNU at 103.) UNU claims that “these agreements require the victims to waive all legal rights they have to address future harm of any nature from the wind farms.” (UNU at 103.) UNU also claims that such agreements defeat the Board’s complaint resolution process. The Board should deny UNU’s request. Champaign Wind’s right to enter into agreements with neighboring

landowners in the project area is not subject to Board overview, just as Champaign Wind's leases are not subject to the Board's overview. This request by UNU is just another example of its desire to interfere with Champaign Wind's development of the project.

The Board should reject UNU's proposed condition revisions and proposed condition additions.

III. CONCLUSION

The record supports the Board's issuance of the Certificate. Champaign Wind provided evidence satisfying the criteria set forth in Section 4906.10(A), Revised Code. Accordingly, the Board's decision to grant Champaign Wind's application for a Certificate was appropriate and UNU's application for rehearing should be rejected in its entirety.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing document was served upon the following parties of record via electronic mail on this 8th day of July 2013.

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Summary: Response and Memorandum Contra to the Application for Rehearing by Julia Johnson, Robert McConnell, Diane McConnell and Union Neighbors United electronically filed by Mr. Michael J. Settineri on behalf of Champaign Wind LLC