BEFORE THE OHIO POWER SITING BOARD

In the Matter of the Application of Champaign Wind LLC for a Certificate to Install Electricity Generating Wind Turbines in Champaign County	**)** **)** **)** **)** **)**	**Case No. 12-0160-EL-BGN**

MEMORANDUM OF INTERVENORS UNION NEIGHBORS UNITED, INC., JULIE JOHNSON, AND ROBERT AND DIANE McCONNELL IN OPPOSITION TO THE MOTIONS OF EDP RENEWABLES NORTH AMERICA LLC, GAMESA WIND US, LLC, INVENERGY LLC, AND CHAMPAIGN WIND LLC TO QUASH THE BOARD'S SUBPOENAS DUCES TECUM

I. The Subpoenas Are Essential For Obtaining The Information Necessary To Craft Certificate Conditions To Protect The Public From Wind Turbine Hazards That Have Already Emerged During The Short Time Wind Turbines Have Been Operating In Ohio.

A. Dangerous Blade Failures Have Been Occurring Regularly In The United States And Worldwide.

On April 24, 2012, two blades on a turbine in the Timber Road II wind project in Ohio shattered, scattering large chunks of metal debris in many directions. *See* Exhibit A-7, A-9. The incident report submitted by EDP Renewables North America, LLC (EDP) to the Ohio Power Siting Board (OPSB or Board) reveals that each of these blades was 49 meters long (160 feet, or more than half of the length of a football field). Exh. A-7. The first blade disintegrated after it broke due to a manufacturing defect and struck the turbine tower while rotating. Exh. A-2, A-3, A-42. After a safety device shut off the turbine in response to the blade throw, the technician who was operating the wind project remotely in Portland, Oregon[1] restarted the turbine without arranging for a local employee to first check the turbine. Exh. A-2. The result was predictable -- the absence of the first blade resulted in the overloading of the second blade, which also broke, struck the tower, and shattered. Exh. A-2, A-3, A-4, A-42, A-47. The forceful impact of the

[1] This appears to be inconsistent with the wind companies' promises to create new Ohio jobs.

rapidly rotating blades against the tower launched broken blade parts into the countryside. One landed on the property of a neighboring landowner. Exh. A-2.

EDP's report on the incident to OPSB is incomplete at best. The report discloses the distances that some of the blade pieces traveled from the tower, but not others. A diagram in its report shows the landing spots for only the largest pieces of blade debris that were three kilograms (2.2 pounds) or heavier. Exh. A-9. As anyone struck by shrapnel or bullets can attest, small metal pieces flying at a high velocity can also cause substantial damage to a person. Since a turbine's blade tips can rotate as fast as 180 miles per hour (or faster when they are malfunctioning), even small severed blade pieces can be expected to travel at a high rate of speed. Nevertheless, EDP has not revealed the travel distance for the smaller blade pieces either to the Board or to the public.

Despite EDP's apparent attempt to conceal this important information, its report does admit that the largest blade piece flew 233 meters (764 feet) from the tower base. Exh. A-9. Even this limited information shows that the setbacks proposed for the Champaign Wind project are too small, with its closest setback being only 561 feet from the property lines of neighboring landowners.

When the turbine manufacturer, Vestas, inspected the other turbines at Timber Road II, it found another blade that had been damaged by an independent cause, lightning. Exh. A-3, A-8. Consequently, another blade failure may have been in progress at the same wind project.

Intervenors Union Neighbors United, Inc., Julie Johnson, and Robert and Diane McConnell ("Intervenors") have served a subpoena on EDP to fill in the gaps of missing information on this serious incident. Intervenors also subpoenaed information from EDP and other wind companies about blade defects and blade throws at other wind projects to identify preventative measures that can be included in Champaign Wind's certificate to prevent blade

throw and to assess the adequacy of the setbacks proposed by Champaign Wind for its project. As explained below, Champaign Wind and the entire wind industry have done their best to conceal this important information. Their resistance to these subpoenas is a continuation of that subterfuge.

While Champaign Wind and other wind developers claim that blade failure rarely occurs, past events at operating wind projects show otherwise. Wind turbine accidents reported in the public media include at least 249 incidents of blade breakage from the 1990s to June 30, 2012. Exhibit B-3.[2] Blade pieces have been known to travel as far as a mile. Id. Blade pieces have even gone through the roofs and walls of neighboring buildings. Id.

Approximately eighty of these blade failure incidents are chronicled in a partial list of worldwide turbine accidents and other problems compiled by the Caithness Windfarm Information Forum in Scotland. *See* Exhibit C (attached).[3] Here are just some of the examples of blade failure incidents from this compilation:

Incident #	Incident Description
27	A one-ton piece of blade hurled 1312 or 1640 feet[4]
39	Blade parts landed in a garden
42	Blade pieces landed on a road
49	Blade parts flew over 984 feet across a road
50	Blade parts traveled between 1312 and 1640 feet, some landing in a summer house
71	Blade pieces flew 1640 feet
78	Blade parts blown more than 984 feet

[2] This document can be found at http://www.caithnesswindfarms.co.uk/page4.htm.
[3] Exhibit C can also be accessed at http://www.caithnesswindfarms.co.uk/fullaccidents.pdf.
[4] The metric distances documented in the compilation have been converted to feet in this summary.

Incident #	Incident Description
99	60 residents living within 1640 feet of turbines evacuated from area while blades rotated four times faster than normal speed
114	One blade piece traveled 1968 feet; another one went 656 feet and landed in a swimming pool
128	Blade piece traveled between 328-492 feet, landing on a factory and private home, and piercing a 9-inch thick stone wall, timber floor, and roof of the house
169	Blade pieces covered an area within 1312 feet from the tower
428	Blade parts found 4265 feet (1.3 km) from turbine
472	Farmer on whose land a turbine had been erected three days earlier watched as blades flew over his house. One blade landed in the yard where he had been standing shortly before the incident.
477	Blade pieces "scattered well outside owner's property"
666	A wind industry publication reports that a turbine manufacturer had to replace the blades on 1200 turbines in the United States due to blade weakness and cracking
681	Four turbines on a wind farm threw their blades due to manufacturing defects. One 16-foot long blade smashed through the roof of farmhouse as the family slept inside. The farmer reported that it "was like a bomb hitting the roof of the house."
772	A blade on a small turbine at Perkins High School in Ohio "fell apart," throwing a piece of the blade into the student parking lot
773	An eight-foot long piece of blade crashed through the roof of a neighbor's home
853	Blade ripped off the tower and landed on a hiking path
854	Article reports that Denmark experienced 27 incidents of blades coming loose between 2000 and 2009

Incident #	Incident Description
989	Another blade throw incident at Perkins High School in Ohio
1047	Three blades flew off a turbine on a New Jersey farm, flying 215 feet and narrowly missing a 17-year old child

Id. Many of the reported blade failures have occurred in European countries, which possess more experience with wind turbines than the United States. Nevertheless, blade failures are already occurring in the United States during the relatively short time that wind projects have been operating here. Besides the Timber Road II incident, turbine blades have broken or flown off their towers in Ohio (twice at Perkins High School), Vermont (incident 112), Idaho (incident 427), Minnesota (incident 470), New York (incident 477), twice in Michigan (incident 990), New Jersey (incident 1047), twice in North Dakota (incidents 1052 and 1053), and Illinois (incident 1054). Notably, this compilation of wind accidents in Exhibit C is by no means a complete compilation, as shown by the fact that the Timber Road II blade throw is not included. As discussed below, it is also likely that the wind companies are hiding information about other incidents.

B. The Wind Industry Is Hiding Vital Evidence About Blade Defects And Failures Affecting All Turbine Manufacturers That Is Essential For Formulating Precautionary Conditions In Champaign Wind's Certificate.

While wind turbines manufactured by Vestas have experienced blade failure, Vestas is by no means the only turbine manufacturer whose blades have broken and become airborne. The list of blade incidents in Exhibit C implicates a myriad of blade manufacturers, with the manufacturers of many more broken blades not being identified.

Some of the manufacturers with documented blade failure issues are the very manufacturers whose turbine models are being considered for the Champaign Wind project.

Page 10 of Champaign Wind's application lists models manufactured by General Electric, Gamesa, REpower, Nordex, and Vestas (which has now been withdrawn). Every one of these manufacturers has produced turbines that have thrown their blades. For example, parts of a Gamesa blade traveled 3280 feet after the blade struck a turbine tower. *See* the compilation of turbine accidents in Exhibit D-3, incident 114.[5] In addition, seven Gamesa blades at a new wind project in Pennsylvania had gluing deficiencies, some of which resulted in large sections of blade being thrown. Exh. E-1, "Blade Failure and Load Monitoring," WindPower Monthly, Sept. 2008.[6]

According to WindPower Monthly, a publication for the wind industry, General Electric has had "its share of blade problems as well." Id. For example, blade parts from a General Electric turbine in Canada were cast to the ground after being struck by lightning. Exh. C-38, incident 532. General Electric turbines have lost blades in New York, Montana, Missouri, and Illinois. *See* the compilation of blade throws at Exhibit F-2, F-3.[7] Lightning ignited a REpower turbine in Germany, causing a burning piece of blade to fall off the tower. Exh. D-5, incident 192. A Nordex blade fell off a turbine in Germany after a minor storm. Exh. D-9, incident 276. A loose blade from another Nordex turbine in Germany struck the tower and shattered, scattering blade pieces over 328 feet of a highway. Exh. D-10, incident 296.

WindPower Monthly has written a detailed expose on the wind industry's blade failures based on interviews with experts in the turbine repair field. Exh. E. The publication observed that the "modern wind industry has been living with series blade failure since its birth in the early 1980s and is clearly not over them yet." Exh. E-1. These problems are especially acute in

[5] This document can be most easily accessed by doing a search for "wind turbine accident compilation" on the Google search engine, which will bring up the document on the Industrial Wind Turbine Action web site at windaction.org.
[6] This document can be accessed at http://www.windpowermonthly.com/news/953663/Blade-failure-load-monitoring/.
[7] This document can be accessed at http://beattys.us/mlehoa/WP/Wind/BladeFail.pdf.

the United States, where the rush to build wind projects before the federal tax credits expire has driven turbine manufacturers "to move new blades through design-testing and commercial manufacturing too quickly." Exh. E-2. "Time pressure, in other words, is tending to take precedence over product control and blades are a particular victim." Id. One turbine repair expert explained that his repair company was "seeing this across the whole industry." Id.

A 2011 study by the Sandia National Labs (Sandia) for the U.S. Department of Energy, a prominent supporter of the wind industry, has confirmed the findings of WindPower Monthly. Exh. G.[8] Sandia reported that "[t]he rapid deployment of turbines has forced existing technologies and manufacturing practices to be scaled rather than utilizing . . . costly and complex certification testing protocols." Exh G-6. The report finds that, while the design and manufacturing of blades has improved, they have not kept abreast of the greater challenges posed by the industry-wide employment of larger blades, which have higher incidents of fiber waviness, large scale porosity, large resin rich areas, and resin cure variations. Exh. G-5, G-8. In fact, "[m]any of the blade suppliers are using technologies and techniques that were developed for structures with much lower design loads and criteria." Exh. G-6. Based on a preliminary survey of wind farms, Sandia has estimated that as many as 20% of all turbine blades may experience blade flaw resulting in down time. Exh. G-7, Exh. G-8. Based on Sandia's interviews of wind industry operators and manufacturers, Sandia believes this number is "probably higher." Exh. G-8.

Turbine manufacturers are "reticent to share much detail on the exact defects seen in various blade failures." Exh. E-2. Manufacturing defects such as defective gluing have been blamed for some blade failures. Id. Pitch imbalances and other blade imperfections have caused

[8] This document can be accessed at http://prod.sandia.gov/techlib/access-control.cgi/2011/111094.pdf.

blade vibrations that weaken the blades. Exh. E-3. This problem becomes more common as the blades are designed to be longer. Id.

According to one expert interviewed by WindPower Monthly, just about every turbine manufacturer is experiencing blade defects. Exh. E-2. Sandia's report also demonstrates that this problem is widespread. The compilations of turbine accidents implicate every manufacturer on Champaign Wind's list of preferred turbine models, and most, if not all, of the world's turbine manufacturers. Blade failure is not just a Vestas problem -- it is an industry-wide crisis.

With this track record, it is no wonder that Champaign Wind, EDP, and other wind development interests are alarmed over the prospect of revealing these safety threats to the public. EDP's motion admits as much (at p. 3) when it postulates that the subpoenas are "designed to elicit information to serve as a generic indictment of the wind industry." Notwithstanding EDP's fear that the subpoenas will expose the wind industry's dirty secrets, this information must be obtained and presented to the Board during the hearing so that Champaign Wind's project can be more safely designed. Based on the information currently available, Champaign Wind's project, as designed, will impose unreasonable safety risks on nearby citizens while on their land, in their homes, and on the roads. Moreover, as revealed by the WindPower Monthly expose, the wind industry is concealing most of the facts about blade failures. Consequently, the Intervenors' subpoenas are essential for obtaining this necessary information.

Champaign Wind's application acknowledges the dangers of falling or thrown blades by stating "[w]hile rare, such incidents can be dangerous." Application, p. 82. The application then represents that the applicant is not aware of any human injuries from blade failure. Champaign Wind is correct about the danger of these incidents, but as shown by the statistics described above, these incidents are not rare. And human injuries have been avoided only by the slimmest of margins on too many occasions.

Champaign Wind's application attempts to whitewash this serious problem, representing that the wind industry now prevents blade throw by vigorously testing the turbines and instituting operational safety procedures. Application, p. 83. However, this problem has not been solved; it has become more serious. The compilation of wind turbine accidents in Exhibit C, which records only the publicly reported incidents up to June 30, 2012, records six blade failures in 2011. Exh. C-86, C-92, incidents 1047, 1048, 1052, 1053, 1054, and 1149. The Timber Road II blade throw in Ohio occurred in April 2012. Six out of these seven blade failures happened in the United States. And the public threat revealed by the publicly reported incidents appears only to be the tip of the iceberg. Sandia's report estimated that as many as 20%, or more, of all turbine blades may have serious flaws. Exh. G-7, G-8. As revealed in WindPower Monthly's interviews of wind industry experts, these dangerous conditions have resulted in large part from shortcuts in manufacturing and product testing.

Champaign Wind and the subpoenaed companies undoubtedly will argue that wind turbines are perfectly safe. They may even contest the evidence about turbine threats that is publicly available and cited herein. If they do, this is all the more reason to subpoena the information they have on these problems. If Champaign Wind disputes the publicly available information in this proceeding, then perhaps the wind companies' own records will reveal the actual scope of the problem. These subpoenas are necessary to test Champaign Wind's safety claims. Without forcing the subpoenaed companies to divulge their information about this issue, OPSB and the Intervenors have no way to test Champaign Wind's self-interested claims of safety.

Similarly, even though the compilations of blade throws and other turbine safety issues is available on the internet, the wind industry companies should have considerable non-public information about the causes and effects of these incidents. Presumably, these companies have

investigated any such accidents and have unpublicized information about the accidents that will enlighten the Board about their causes and the methods for minimizing their threats. In fact, the evidence that the companies are unwilling to reveal, as betrayed by the subpoenaed companies' resistance to these subpoenas, should be the most enlightening.

Champaign Wind's application admits that blade throws are caused by manufacturing defects, poor maintenance, control system malfunction, lightning strikes, and human error in operation. Application, p. 83. As described above, equipment malfunctions are not uniquely attributable to particular turbine models, but are an industry-wide problem. The other three causes of turbine failure -- poor maintenance, lightning strikes, and human error in operation -- are not a function of turbine design but instead are problems that can afflict any turbine model. This further rebuts the subpoenaed companies' argument that blade throws by only the turbine models listed in Champaign Wind's application are relevant. The lessons learned about other turbine models, regardless of the causes of blade failure, will provide valuable information to fashion the conditions of Champaign Wind's certificate.

C. The Board Must Learn More About The Causes And Effects Of Blade Throw So That Champaign Wind's Certificate Is Not Relying Solely On The Certificate Conditions That Failed To Protect The Public At Timber Road II.

The application to OPSB for Timber Road II (then called Paulding Wind II) contains representations about blade shear that are almost identical to the language on that topic in Champaign Wind's application. *See* Exhibit H-5, H-6. One notable exception in language overlay is that Champaign Wind's application, unlike the Timber Road/Paulding Wind application, no longer claims that blade throws are decreasing. Nevertheless, although blade throws at Timber Road and other wind projects have dispelled this myth, Champaign Wind's application promises to employ the same measures to prevent blade throws that were promised and unsuccessfully employed by Timber Road. *Compare* Champaign Wind's application at p. 83

with Paulding Wind's application at p. 92 (Exh. H-6). The Staff Report and Certificate for Paulding Wind II also, wrongly, predicted that these measures would adequately address blade throw at that wind farm. *See* Exhibit I-2, p. 37, Exhibit J-2, p. 18.

Consequently, Champaign Wind's withdrawal of its consideration of the Vestas model as a ploy to avoid the disclosure of information about EDP's blade throw does not moot EDP's subpoena. It is not coincidental that Champaign Wind's law firm, which also represents EDP, took this action on Champaign Wind's behalf only days after UNU filed a motion to subpoena EDP's Timber Road II records on the blades thrown from Vestas' model. Notwithstanding Champaign Wind's and EDP's gamesmanship, the Timber Road blade throw still provides information that is germane to Champaign Wind's certification. Similarly, the subpoenas to other wind companies about their blade throws will also inform the Board's decision on Champaign Wind's application.

Thus, the subpoenaed evidence is expected answer a number of questions. For example, given the distance that blade parts have been flung at Timber Road and other wind projects, how large should the Board set the setbacks in Champaign Wind's certificate? EDP's report to the Board does not answer this question, because it revealed the travel distance for only the largest pieces. And even if the report had addressed flying metal of all sizes, a subpoena of additional information such as additional photographs, correspondence, and reports would be useful to reveal whether EDP's report to OPSB was complete and truthful. Moreover, there is no evidence that the blade throw distance for the Vestas model, or any other model used or manufactured by the other subpoenaed companies, will be any different than the other model candidates in Champaign Wind's application. The metal travel distances for the Timber Road incident, and all other worldwide blade throws, are quite germane to Champaign Wind's application.

The information from Timber Road II and other wind projects is also pertinent to additional questions the Board should consider when considering Champaign Wind's application. For example, should the Board require conditions to minimize the potential for blade throw that are additional or different than the conditions for past wind certificates that have already been proven ineffective? Should the certificate, if issued, require Champaign Wind to produce information demonstrating that the blades have been adequately tested by the manufacturer, and if so, what information is needed? Based on the subpoenaed information, what requirements should the Board adopt to prevent the reckless operator error that occurred at Timber Road? The subpoenas to EDP and the other subpoenaed companies are necessary to obtain the information necessary to answer these questions.

The same relevant questions compel the production of blade throw information from the other subpoenaed companies. As shown above, every one of the manufacturers mentioned in Champaign Wind's candidate turbine list has experienced problems with blade breakage. Indeed, this is an industry-wide epidemic that has attracted the attention of even the pro-wind U.S. Department of Energy (see the Sandia report). As demonstrated above, this problem is not limited to specific manufacturers or specific models. Manufacturing defects are afflicting all manufacturers, especially those who are rushing their blades to the United States. Lightning does not choose to strike the Vestas V100 while sparing all other models. Poor maintenance can occur on any and every wind project. Wind operators can make mistakes when operating any turbine model, not just the Vestas V100. Consequently, the representations by Champaign Wind and the subpoenaed companies that their turbine models are unique and immune from the problems addressed by the subpoenas are inaccurate. Blade throw information, from any turbine model, will be instructive for crafting conditions in Champaign Wind's certificate designed to

reduce blade throw incidents and to identify the setbacks necessary to avoid collisions between flying blades and people, automobiles, and buildings.

Furthermore, the subpoenaed companies' arguments that only information about recently manufactured turbine models is relevant to this proceeding is contrary to the publicly available information about these problems. If anything, today's trend towards larger turbines, the deterioration of manufacturing safety testing, and the rush to sell hastily manufactured turbines has increased the risk of today's turbine models, not decreased it. All of these factors increase the threats from Champaign Wind's proposed turbines.

The foregoing points apply with equal force to the other wind turbine threats and hazards about which the subpoenas seek information, such as noise and shadow flicker. These harmful impacts to the public are not unique to the Vestas V100 or any other turbine model. If any of the subpoenaed companies have useful information about these threats and hazards, the Intervenors have a right to access it and the Board needs to consider it for Champaign Wind's certificate.

The subpoenaed companies vigorously argue about whether the subpoenaed information will be relevant to the hearing in this case. This is to be expected, since these companies have every incentive to hide this information. But this is not time, nor are discovery subpoenas the mechanism, for determining whether the subpoenaed information will be admissible at the hearing. As stated in the Board's rules, "[i]t is not grounds for objection that the information sought would be inadmissible at the hearing, if the information sought appears reasonably calculated to lead to the discovery of admissible evidence." OAC 4906-7-07(A)(2). R.C. 4903.082, which applies to Board proceedings under R.C. 4906.12, provides that the parties to Board proceedings are entitled to full discovery on topics such as those addressed by the subpoenas:

> All parties and intervenors shall be granted ample rights of discovery. The present rules of the public utilities commission should be reviewed regularly by the commission to aid full and reasonable discovery by all parties.

Consistent with this law, the Intervenors request that the Board allow them to conduct the necessary discovery on these topics. Without the subpoenas, the Intervenors have no means to obtain the information being hidden by the subpoenaed companies.

II. The Subpoenaed Companies' Complaints About The Supposed Burden Of Complying With The Subpoenas Are Disguises For Their Actual Intent To Hide Their Turbines' Threats To Public Safety.

The subpoenas seek information on the safety threats and other harms that turbines impose on the public. The representations in the motions to quash about the burdensome volume of records responsive to the subpoenas would lead one to believe that these companies have been concealing considerable information about their products' hazards. Gamesa even contends (at p. 8) that the burden of responding to the subpoena might discourage vendors from bidding on these lucrative wind projects. EDP complains (at p. 8) that Intervenors' request to produce all documents related to every incidence of blade failure or damage at all of its operating wind projects is overly burdensome. If these companies have had so many incidents of blade throw or damage as to generate large volumes of records, then the blade failure problem is alarming.[9]

Conversely, if the incidents of blade throw, noise complaints, shadow flicker, and other problems were limited, the number of records pertinent to these issues would be few. If so, the subpoenaed companies have no reason to complain that the subpoenas are burdensome. If the volume of records is large, then the Board has a responsibility to obtain that information to protect the public.

[9] Intervenors' counsel has informed EDP's counsel that EDP needs to produce information about blade damage only where it was of the type that can cause a broken blade. This eliminates EDP's complaint that Intervenors' are seeking documents about insignificant blade damage.

None of the motions to quash indicate that the subpoenaed companies have made a genuine effort to determine the amount of effort necessary to comply with the subpoenas. Nor has any subpoenaed company made any effort to determine how many responsive records exist. Instead, some of them surmise that they would have to review every file maintained by every company employee to find and produce the requested records. But any large, responsible company with a true desire to protect the public from the hazards of its products and operations has safety employees or compliance officers to track and supervise these issues. Certainly, the wind industry companies do the same. If so, it should be relatively simple to collect the required information from these employees. If not, the Board should be gravely concerned about the wind industry's lack of concern about public safety.

Similarly, unless the wind industry is cavalierly treating blade throws, shadow flicker, noise, and other turbine threats, one would expect a wind company to know where it keeps important information about these threats. Surely, if a wind company's turbine throws a blade or if neighbors complain about nearby turbines, that information will not be kept hidden in a file or email retained by some low-level employee. If the wind industry is taking these problems seriously, the company's headquarters or safety managers will know about them.

To comply with the subpoenas, the subpoenaed companies need not search every file and every email account for all company employees to see if they have any incidental information on the topics in the subpoenas. Intervenors' counsel has made this clear to the attorney for each of the companies that has filed a motion to quash. Upon receiving the motions to quash from EDP, Gamesa, and Invenergy, counsel for the Intervenors has telephoned the attorney for each of those companies in attempts to work out arrangements to reduce any burden, or perceived burden, for complying with the subpoenas. Intervenors' counsel has offered to narrow the scope of the requests where necessary to expedite the document productions, including narrowing their

subject matter and the types of records to be reviewed or produced. These discussions are ongoing.

The Board has promulgated the requirement in OAC 4906-7-07(H)(1) that the parties first attempt to resolve discovery disputes among themselves before invoking the Board's intervention, because that usually is the most efficient and effective means to resolve these issues. The same principle applies to these subpoenas. The ALJs have every right to insist that these procedures be exhausted prior to coming to the Board. If the subpoenaed companies are genuinely interested in working out reasonable procedures for producing the germane evidence in their possession, rather than hiding their information, these discussions should resolve the motions to quash.

III. Champaign Wind Has No Standing To Complain That Intervenors' Subpoenas To Other Companies Supposedly Are Burdensome.

While Champaign Wind takes pains to point out that there are situations in which it may have the right to contest subpoenas to other companies, it also admits (at p. 3, fn. 1) that it has this option only where the subpoenas infringe on Champaign Wind's rights and privileges. Indeed, the motions to quash in other cases cited by Champaign Wind are instances in which the moving parties sought to protect their own proprietary information from the subpoenas. Notwithstanding this limitation, Champaign Wind bases its motion to quash in large part on arguments that the subpoenas are burdensome. But Champaign Wind is not subject to these subpoenas, and it has no standing to assert such an argument on another company's behalf.

IV. The Board's Rule Does Not Require The Subpoenas To Specify Any Deposition Topics, Nor Do Any Of The Subpoenas Require The Subpoenaed Companies' Representatives To Travel To Ohio For Depositions.

EDP argues that its subpoena should be quashed because the subpoena does not identify the topics about which its representative must testify. In support of its position, EDP cites OAC 4906-7-07(E)(5), which provides:

> A party may, in the notice and in a subpoena, name a corporation, partnership, association, government agency, or municipal corporation and designate with reasonable particularity the matters on which examination is requested.

Emphasis added. As specifically stated in the rule, a party may, be is not required to, specify the topics for the deposition. Any other interpretation of this requirement is contrary to the express language of the rule. EDP's attempt to infuse an additional requirement into OAC 4906-7-07(E)(5) is meritless.

Moreover, the subpoena specifies no topics for the deposition because the deponent is not expected to testify on any specific topics. If a deposition actually occurs, the deponent is only expected to produce the documents as exhibits to the deposition. In fact, the subpoena states that the deponent need not even appear for the deposition if the subpoenaed company produces the records at least one day prior to the scheduled deposition:

> You need not appear at the office of Van Kley & Walker, LLC in person if you deliver the requested records by mail or other means to that office by October 17, 2012.

In a conversation with EDP's counsel, Intervenors' counsel has reinforced that point by making sure he was aware of that option. Thus, there is no need to prepare an EDP representative to testify at deposition, nor is it necessary for an EDP employee to travel from Texas to Ohio.

All of the Intervenors' subpoenas, including Gamesa's, contain the same language that is quoted above. Consequently, none of them have any grounds to complain about their representatives being required to travel to Ohio for a deposition, nor do they have any grounds to request cost reimbursement for traveling to Ohio.

V. Notwithstanding EDP's Pretense That Its CEO Did Not Discuss Its Flying Blades With Kim Wissman, EDP's Records Pertaining To That Discussion May Contain Candid Assessments About The Blade Throw That EDP Is Concealing.

Request No. 3 of the subpoena to EDP seeks records related to a telephone conference between Gabriel Alonso and Kim Wissman on May 1, 2012 about the turbine blade failure at the Timber Road II Wind Farm. EDP states (at p. 9) that it "believes [the conversation] did not take place." But Kim Wissman's letter of May 4, 2012, filed on the docket for Timber Road II, represents that she had this conversation with Mr. Alonso on May 1, 2012. Exhibit K. The Intervenors believe Ms. Wissman.

Since Gabriel Alonso is the Chief Executive Officer of EDP, it is likely that he received information about the Timber Road blade failure via a briefing memorandum or some other means. This information could provide valuable insights into what happened at Timber Road, perhaps including information not revealed to Ms. Wissman or OPSB. Gabriel Alonso also may have circulated a communication to other EDP personnel or prepared a memo to the file after this conversation. Such a communication may also provide important insights into the causes and effects of the Timber Road blade throw. Since these records are internal EDP communications, it is likely that they contain assessments of the blade throw problem that were more candid than Mr. Alonso's representations to Ms. Wissman.

EDP contends that the time necessary to review emails and other records makes this request overly broad and oppressive. But the request is limited to records about just one telephone call. How many records can there be? Even including emails, the number of responsive records cannot be large. So the burden of responding is not the actual reason for EDP's reluctance to produce these records. Clearly, EDP has something to hide.

VI. Records Relating To Communications With OPSB About Timber Road II's Blade Failure May Provide Frank Assessments Of The Threat From Turbine Blade Throw.

Request No. 4 to EDP also is limited in scope. EDP complains that this request is burdensome, but there cannot be that many communications between OPSB and EDP on this important issue. It is likely that most, if not all, such communications are about the Timber Road incident, unless EDP has hidden other blade failures from the public.

EDP also tries to shift its responsibility for producing this information to OPSB, arguing that only the Board should have to produce records about these communications. But the documents sought from EDP include more than just the sanitized discussions in letters, emails, and phone discussions between EDP and OPSB. The more valuable, candid discussions about the true nature of the blade throw problem most likely exist in EDP's internal correspondence preparing for or summarizing the communications EDP has had with OPSB. Producing such a limited number of records is not burdensome. Based on EDP's alarm at producing these records, it again appears that the company is hiding important information from OPSB and the public. The Board should not allow EDP to hide this evidence based on such a flimsy excuse.[10]

VII. EDP's Records About Complaints, Noise, And Shadow Flicker At Timber Road II May Indicate Whether The Certificate Conditions Considered For Champaign Wind's Project Would Protect The Public.

EDP complains that Intervenors' requests for information about these topics at Timber Road II are not limited in time. But Timber Road II has been fully operational only since July 19, 2011. Exh. L-3. Yet EDP claims that it has to go through so many records to find complaints about noise, shadow flicker, and other problems that Intervenors' requests for records related to these problems are burdensome. This only begs the question as to whether the Timber Road facility has been operated so poorly that it has already received a large number of complaints

[10] In addition, the Board has not yet produced these records, and has not even communicated with Intervenors' counsel in response to the public records request. Consequently, there is no guarantee that OPSB will produce the records before Intervenors' direct testimony is due.

during the mere year it has been operating, or whether the complaints have been so serious that they have fostered numerous records following up on the complaints.

Moreover, EDP acknowledges that it is required to submit documentation on all complaints to OPSB. To comply with that requirement, EDP has to know where to find the pertinent information about these complaints in its files. Clearly, EDP's complaint about the burden of finding these records is meritless.

EDP again attempts to shift its duty to OPSB, arguing that the Intervenors should be content with obtaining copies of the complaints from the Board. But only EDP has its internal records that candidly document the investigation and evaluation of these complaints. Unless Timber Road II has received numerous complaints, the number of these records cannot be unusually high or burdensome to produce.

EDP's records relating to noise and shadow flicker from Timber Road also cannot be numerous, unless Timber Road's operations have inflicted an unusual amount of noise and shadow flicker on its neighbors. Even if noise or shadow flicker has been a serious problem during the wind project's single year of existence, the number of measurements is not likely to be numerous and EDP is sure to know where to find them in its files.

EDP also argues that the noise from Timber Road II is irrelevant, because the Vestas V100 is no longer being considered for Champaign Wind's project. But Champaign Wind uses Timber Road II as precedent for the noise standard it wants the Board to adopt for Buckeye Wind II, saying that the Board should use the same five decibel above background standard for Buckeye Wind II that it used for Timber Road II. Application, p. 72. The same principle applies to shadow flicker. Champaign Wind urges the Board to implement the same 30 hour per year standard for shadow flicker at Buckeye Wind II that it utilizes for Timber Road II. Application, p. 84; *also see* the Timber Road certificate, Exhibit J-3, p. 33, Condition 41. If the noise or

shadow flicker levels governed by the same standards at Timber Road II have proven to be disruptive to the community, then this is important information that the Board needs to hear during the upcoming hearing so it can avoid the same mistakes in the Champaign Wind certificate.[11] The Intervenors' requests for this information are reasonable and important.

VIII. Invenergy's Records About The Turbine Sites It Sold To Champaign Wind For Use In Buckeye Wind II Are Obviously Germane To The Champaign Wind Certificate.

Champaign Wind obtained most, if not all, of its turbine sites from Invenergy, which previously had planned to construct its own wind turbines on those sites. Obviously, Invenergy's information about these turbine sites is germane to Champaign Wind's project. For example, Invenergy's consultant performed a survey that discovered Indiana Bats in the area, but its consultant's report on this survey inexplicably was not included in Champaign Wind's application. If Invenergy performed a background noise survey in the area, that would also be important information germane to, and not included in, Champaign Wind's application. All but one of the other categories of information requested by Intervenors' subpoena similarly seek evidence pertinent to the very turbine sites that are included in Champaign Wind's application.

The exception is request 14, which seeks information about Invenergy's experiences with flying blades. The importance and relevance of that topic is addressed earlier in this memorandum.

While Invenergy's motion states that it has transferred its records to Champaign Wind, the motion does not specify whether Invenergy kept copies of the records. Intervenors' counsel has asked Invenergy's counsel to check on that issue. The subpoena asks only that Invenergy and its associated companies produce the records that are in their "possession, custody, or control." If Invenergy and its associated companies have no copies of the records, then they

[11] However, the converse is not necessarily true. If noise and shadow flicker have not been problematic at Timber Road II, that may simply be because its noise and shadow flicker outputs have been substantially below the standards or because the afflicted neighbors may believe complaining would be futile.

have no obligation to produce them and have no grounds to quash the subpoena. If Invenergy retained copies of this information, its production of the information would be useful to fill in the gaps from any failure or refusal by Champaign Wind to produce that information.

IX. The Subpoena Was Timely Served On Invenergy.

Invenergy questions whether it has been served with the subpoena. As shown by Intervenors' return of service filed with the Board, Invenergy's statutory agent was served timely on October 1, 2012.

X. If Any Proprietary Information Is Responsive To The Subpoenas To Invenergy And Gamesa, Then That Information Can Be Kept Confidential Pursuant To A Protective Order.

Champaign Wind claims that Document Request Nos. 1 and 4 in the subpoena to Invenergy seek proprietary information. Champaign Wind argues that the proprietary information is irrelevant and should not be produced at all.

Document Request No. 1 asks for the following records:

> All documents relating to the purchase, acquisition, sale, or transfer of leases or options for leases for wind turbines on any land in the Project Area.

This request is germane to the Champaign Wind application in several respects. First, obtaining copies of the leases or lease options signed by the landowners of the turbine sites will show whether they contain any provisions that are contrary to the public interest, such as provisions prohibiting the landowners from revealing safety hazards to OPSB or the public. Second, in the event that any such landowners testify in favor of the wind project at the hearing, the leases and lease options will show whether they were contractually required to provide testimony favorable to Champaign Wind and, if so, expose their lack of credibility. Third, documents related to the leases or options, such as correspondence to the landowners or correspondence between Invenergy and Champaign Wind, may reveal that there are problems with these turbine sites such

as the presence of Indiana Bats or admissions that they are too close to neighboring homes. And fourth, the records would also show whether Champaign Wind obtained leases or options on land that is not being utilized in the application, and which thus may be available as alternate turbine sites if the Board found any of the turbine sites in the application to be unsuitable.

Given the relevance of the information sought by Request No. 1, quashing the production of this information would be inappropriate. If any of it is truly proprietary, then it should be produced to Intervenors' counsel subject to a confidentiality order.

Document Request 4 asks for the following records:

> All memoranda, correspondence, and other documents discussing the pros and/or cons of selling or transferring leases or options for leases for wind turbine sites in the Project Area to anyone else.

This request also is pertinent to the Champaign Wind application. Obviously, Invenergy had some motivation for selling all of these turbine site leases to Champaign Wind, a competitor. That motivation, as discussed in memoranda and other records discussing the pros and cons of selling the leases or options, could be highly relevant to the suitability of these sites. For example, did Invenergy unload the leases or options because it knew that the turbines would kill the Indiana Bats it had found in the project area and thus jeopardize its attempt to site or operate a wind project there? Did Invenergy have information showing that the quantity of wind in the area was not sufficient? Did Invenergy realize that turbines could not be sited here without imposing unacceptable noise and/or shadow flicker on neighboring residents? Did Champaign Wind note the existence of any of these problems as grounds for reducing the price for purchasing the leases and options from Invenergy or the landowners? The records sought by Request 4 may contain information on

these issues, or others, that are important to the Board's consideration of Champaign Wind's application.

Champaign Wind does not describe any information responsive to Request 4 that is proprietary to Champaign Wind. If any proprietary records are requested, then the appropriate measure is to provide the records to Intervenors' counsel subject to a confidentiality order. Champaign Wind has the burden to prove that the requested records contain proprietary information to justify such an order.

Similarly, if the subpoena to Gamesa calls for the production of proprietary information as Gamesa claims (at pp. 7-8), those records can be produced pursuant to a confidentiality order. This will avoid the "chilling effect" on commerce about which Gamesa complains (at p. 8), since its competitors will not have access to its proprietary information.

To determine whether any responsive records contain proprietary information, the Intervenors propose the following means to address this question. First, the counsel for the parties should consult with each other to determine whether they can reduce the number of proprietary records to be produced while still producing the information sought by the subpoena. For example, if only one page of a specifications booklet contained relevant information, it may not be necessary to produce the entire document. Second, there is no reason why Intervenors and the subpoenaed companies cannot work out a suitable protective order applicable to the produced documents that are truly proprietary. Third, if the Board's intervention proves to be necessary despite the foregoing efforts, an ALJ can review the records in the presence of and with input from counsel for Intervenors and the producing company. The input from Intervenors' counsel during this process will be essential

for identifying the relevance of the information being considered, since the ALJs have not yet had the benefit of learning the details about the Intervenors' positions in this case. Intervenors' counsel is willing to sign a confidentiality agreement that will apply to all information learned in this conference, except for information that the ALJ ultimately determines can be made public.

XI. Environmental And Safety Information Collected By Invenergy About The Project Area Prior To Selling Its Turbine Sites To Champaign Wind Will Help The Board Identify And Address The Threats From Champaign Wind's Turbines.

Champaign Wind also contends (at p. 6) that the information collected by Invenergy about potential turbine sites in the vicinity of Champaign Wind's project is not germane to Champaign Wind's project. Some examples of the records being sought will demonstrate why this information is relevant to Champaign Wind's project.

Request No. 6 seeks noise data for the area collected by Invenergy, such as measurements of the amount of background noise already existing in the area that would be available to mask the sound of the turbines. Because Champaign Wind's noise consultant has performed an inaccurate background noise survey, the existence of another background noise study performed by Invenergy would be a useful means to test the accuracy of Champaign Wind's measurements.

Request No. 8 asks for any records generated or collected by Invenergy that evaluate the effects that turbines in the area would have on humans, wildlife, aviation, property values, and/or the environment. Requests 11, 12, and 13 seek wildlife studies that Invenergy performed to assess the effects of turbines in the area on Indiana Bats or birds. During the hearing on Buckeye Wind I, the Board and the

Intervenors learned that an Invenergy consultant found Indiana Bats in the vicinity of the turbine sites that are now included in Champaign Wind's application. Champaign Wind's application should have included Invenergy's report on these bats, but inexplicably did not.

Request Nos. 16 and 17 seek wind data for the area, which is critical to determining whether Champaign Wind's project is sustainable.

All of the requests for Invenergy records are designed to determine whether Invenergy has evidence of environmental or safety impacts that might be useful for assessing the threats from Champaign Wind's turbines. Since Champaign Wind is using the turbine sites that Invenergy studied, Invenergy and Champaign Wind cannot credibly argue that this information is not relevant.

XII. The ALJ Has Already Rejected Champaign Wind's Meritless Attempt To Restrict The Scope Of This Proceeding.

Champaign Wind again attempts (at p. 7) to use collateral estoppel to restrict the Board's assessment of the threats from Champaign Wind's turbines to the public health and safety. The ALJ has already rejected this meritless argument while ruling on the Intervenors' motion to intervene, and rightly so. Intervenors' arguments on this point in their filings on the motion to intervene are hereby incorporated by reference. The ALJ should not tolerate Champaign Wind's attempt to use the same inapplicable doctrine to conceal important safety and environmental evidence.

XIII. Due To Delayed Service By The Sheriff's Office, Intervenors Have Provided Gamesa With More Time To Produce Its Records.

The Marion County sheriff's office received the subpoena from Intervenors on October 2, 2012 but did not serve it until October 8, 2012 due to a shortage of personnel. *See* the time

stamp on the copy of the subpoena filed with Intervenors' return of service. In light of that delay, Intervenors' counsel has offered Gamesa more time to produce the records.

XIV. The Board's Rules Do Not Authorize The Board To Require Intervenors To Pay For Copies Of Subpoenaed Records.

Gamesa asks (at p. 11) the ALJ to order Intervenors to pay Gamesa for copies of its records pursuant to OAC 4906-7-08(F). This rule provides as follows:

> Any persons subpoenaed to appear at a board hearing, other than a party or an officer, agent, or employee of a party, shall receive the same witness fees and mileage expenses provided in civil actions in courts of record.

Accordingly, this rule applies only to witness fees and mileage expenses for witnesses at hearing, not depositions. Moreover, it does not authorize the Board to order a party to pay for document copying costs. For these reasons, Gamesa's request must be denied.

XV. Conclusion: The Board Has An Obligation To Obtain The Information Necessary To Protect The Public From The Hazards Of Wind Turbines, Especially Where The Wind Industry Has Hidden That Evidence.

Undoubtedly, at least one of the subpoenaed companies that are resisting their subpoenas may protest in reply that the wind industry's safety record is not as flawed as it appears to be. However, if the Board allows these companies to keep hiding this important information, the Board will have no way of knowing whether Champaign Wind's certificate, if issued, provides adequate safeguards for the public. The only way to answer this question is to insist on transparency by the wind industry.

This Board is responsible for the safety of the persons living and working near these turbines. This includes the landowners who lease their land for the turbines, non-participating neighbors living near the turbines, adults or children working or recreating on neighbors' land near the turbines, and motorists driving on roads past the turbines. Surely, the Board wants the best available information about the causes of blade throw, preventive measures available to

prevent blade throw, and the distances at which the blades can fly, in order to make these important decisions. Indeed, the Board has a duty to its citizens to base its decisions on the best available information. A sanitized incident report from a turbine company with every motive to conceal the actual danger to the public is a poor substitute for subpoenas that are available to obtain more accurate information.

Both Champaign Wind and EDP contend that the ulterior purpose for UNU's subpoenas is to make the wind industry look bad. *See* Champaign Wind's motion at p. 5 ("the subpoenas are intended to create controversy as to the wind turbine industry") and EDP's motion at p. 3 (the subpoenas are "designed to elicit information to serve as a generic indictment of the wind industry"). These statements are glaring admissions that the wind industry is hiding evidence about its threats to the public. If the wind industry has nothing to hide, it need not fear the public response to the information originating from its records. Moreover, if the wind industry is not hiding substantial volumes of information, it will have few records to produce in response to these subpoenas.

Ironically, while the wind industry may fear the exposure of its dirty secrets, its attempts to conceal these threats to public health and safety by quashing the subpoenas are more likely to attract public and media attention. Whether or not the wind industry has alarming information about its threats to the public, it should come clean with whatever information it has. The Board has a public obligation to make sure that it does.

For the foregoing reasons, Intervenors Union Neighbors United, Inc., Julie Johnson, and Robert and Diane McConnell request that the Administrative Law Judge deny all motions to quash the Board's subpoenas.

Respectfully submitted,

s/ Jack A. Van Kley
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CERTIFICATE OF SERVICE

I hereby certify that, on October 14, 2012, a copy of the foregoing was served by electronic mail on M. Howard Petricoff (mhpetricoff@vorys.com); Michael J. Settineri (mjsettineri@vorys.com); Miranda Leppla (mrleppla@vorys.com); Chad Endsley (cendsley@ofbf.org), Jane Napier (jnapier@champaignprosecutor.com), Stephen Reilly (Stephen.Reilly@puc.state.oh.us), Devin Parram (Devin.Parram@puc.state.oh.us); Kurt P. Helfrich (Kurt.Helfrich@ThompsonHine.com); Philip B. Sineneng (Philip.Sineneng@ThompsonHine.com); Ann B. Zallocco Ann.Zallocco@ThompsonHine.com); G.S. Weithman (diroflaw@ctcn.net); Maureen Brennan (MBrennan@bakerlaw.com); Sally Bloomfield (sbloomfield@bricker.com); Stephen Howard (smhoward@vorys.com); and Gretchen Petrucci (glpetrucci@vorys.com).

s/ Jack A. Van Kley
Jack A. Van Kley

EXHIBIT A

EDP Timber Road Accident Report to the Ohio Power Siting Board

VORYS

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June 1, 2012

Ms. Barcy F. McNeal
Docketing Division
Power Siting Board
180 E. Broad Street
Columbus, OH 43215

Re: Ohio Power Siting Board - Case No. 10-369-EL-BGN

Dear Ms. McNeal:

Attached for filing on the docket is a copy of correspondence from Brian Hayes, Executive Vice President, Asset Operations, EDP Renewables North America LLC submitted via hand-delivery today to Klaus Lambeck, Chief, Facilities, Siting & Environmental Analysis Division, Department of Energy and Environment. Also included for filing are copies of the following documents: Timber Road II Incident Report; Load Reduced Mode Operation for the V100-1.8 MW Wind Turbine Timber Road II Wind Farm, Ohio, Root Cause Report and correspondence dated May 30, 2012 from Vestas Wind Systems A/S to EDP Renewables North America LLC. These documents were submitted to Mr. Lambeck as enclosures with today's correspondence.

Thank you in advance for your cooperation.

Sincerely,

Michael J. Settineri

MJS/drd
Enclosures
cc: William Wright, Section Chief, Public Utilities Section (w/ encl.)

edp renewables

June 1, 2012

Klaus Lambeck
Chief
Facilities, Siting & Environmental Analysis Division
Department of Energy and Environment
180 East Broad Street
Columbus, Ohio 43215-3793

RE: April 24, 2012 Turbine Failure at Timber Road II Wind Farm ("Timber Road II")

Dear Mr. Lambeck,

This letter continues the communications between your office and the Ohio Power Siting Board ("OPSB") and EDP Renewables North America LLC ("EDPR NA") on behalf of its subsidiary, Paulding Wind Farm II LLC ("Paulding II"), regarding the April 24, 2012 failure of two blades on one Vestas v100 wind turbine at Timber Road II ("Incident"). These failures are the first of this kind on the v100 turbine in North America. This letter details the incident, describes the actions taken since the Incident, provides an update on the status of the Root Cause Analysis ("RCA"), and outlines a plan to return the wind farm to service in a safe, responsible manner.

Incident Overview

On April 24, 2012, at approximately 12:48 p.m. EDT, two 49m blades of the turbine at location 68, a V100-1.8 MW turbine ("Turbine"), broke at Timber Road II near Payne, Ohio. Based on eyewitness account and data analysis, the Incident was initiated when a single blade broke and struck the tower while rotating. The Turbine faulted offline on 'Alarm 156 Chock Sensor' as a result of this impact but was then remotely restarted by a Vestas technician. After it was restarted, the remaining blades rotated a few more revolutions before the second blade struck the tower and scattered debris down to the surrounding area.

At approximately 1:20 p.m. EDT, the Paulding II Site Manager arrived at the Turbine site. He immediately called Vestas personnel to inform them of the Incident, and Vestas placed the Turbine into a paused state. Vestas and Paulding II site personnel secured the Turbine site, including the establishment of a temporary clearance area of 500 meters.

Blade debris was found on the property of landowner below the Turbine as well as the property of a nearby landowner. The Paulding II Site Manager contacted both affected landowners that afternoon and informed them of the Incident.

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Safety of the Facility

Upon notification on April 24th, the Vestas Site Manager immediately initiated the Vestas Incident Management Plan as described in the document previously submitted for your review. Vestas and Paulding II elected to temporarily suspend power generation at Timber Road II to minimize further damage to the wind farm or surrounding properties and to confirm the area's safety. Vestas and Paulding II inspected all of the turbines at the wind farm and conducted a detailed operational review of the Turbine to check for any obvious issues.

Four Vestas engineers (two from Vestas American Wind Technology, Inc.'s Portland, Oregon Headquarters, and two from the Vestas Blades America, Inc. manufacturing facility) arrived on site by Thursday, April 26th, to complete and review visual inspection results. After visual inspection, the remaining, intact blade of the Turbine was determined to have incurred structural damage and require replacement. By Monday, April 30th, the Vestas engineers had visually inspected all other blades at the wind farm using high resolution spotting scopes and digital cameras, reviewed the inspection results, and formally approved 53 of the 54 remaining blade sets to return to service. Vestas found damage to one blade that is unrelated to the incident, and which has since been repaired.

In parallel, Vestas and Paulding II conducted a thorough review of all alarm, operational, and environmental data for the wind farm. This data analysis showed no particularized environmental conditions or turbine performance metrics that distinguished the Turbine from the remainder of the wind farm.

Root Cause Analysis

The RCA has focused on two issues: 1) the cause of the Turbine being remotely restarted after the initial alarm and 2) the cause of the blade failure.

Shortly after the incident, Vestas determined that the initial 'Alarm 156 Chock Sensor', which was triggered by the impact of the first blade failure, was incorrectly categorized in the SCADA system as a remotely resettable fault. In other words, the alarm could be reset by Vestas's remote monitoring center located in Portland, Oregon. As a result of the incident, Vestas has required all technicians to read, sign, and accept a procedure change that this alarm will not be reset remotely, and will require a technician to inspect the turbine prior to restart. In addition, Vestas is in the process of changing the turbine controller software to prohibit remote restart capability for this type of alarm.

Vestas has concluded that the root cause of the failure of the initial blade was due to a wrinkle in the carbon fiber of the spar (the support structure of the blade). This wrinkle caused damage to propagate to the point of failure after the blade experienced high loads for a low number of cycles. Vestas has also concluded the second blade failure was the direct result of an overload caused by failure of the first blade. In other words, had the first blade not failed the second blade would not have failed. A more detailed description of the RCA can be found in the attached document titled "Root Cause Report".

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At this time, Vestas has not been able to confirm whether other blades at Timber Road are affected by the same defect ("Affected Population").

Return to Service under a Mitigation Plan

Given that the root cause is known, Vestas has proposed a mitigation plan that will allow Timber Road to operate at a reduced level during the period until the Affected Population is confirmed and a permanent solution is implemented. This plan is intended to minimize the risk of similar blade failures until Vestas has approved the turbines to return to normal operations. The proposed mitigation plan includes the following actions:

- **Eliminate Remote Reset for Chock Sensor:** The second blade failed and scattered blade material to the ground due to an errant remote reset of Alarm 156 from the Vestas Portland Surveillance Center. As discussed above, Vestas has already instituted a process change that no longer permits the remote reset of the Chock Sensor alarm.

- **Routine Blade Inspections:** Vestas will visually inspect blades with high resolution spotting scopes and cameras on a monthly basis to identify any issues. Should an issue be identified the turbine will be shut down immediately for further investigation.

- **Implement a Loads Reducing Mode (LRM) of Operation:** Until Vestas approves returning the turbines to normal operation, Timber Road will reduce the loads on the blades by 30% during all wind speeds of operation. Reducing the loads on the blades by 30% is intended to minimize the risk of future blade failures caused by the same carbon fiber wrinkle that led to the Incident. LRM is explained in more detail in the attached document titled "Load Reduced Mode Operation for the V100-1.8 MW Wind Turbine".

- **Monitoring of Loads:** The load reductions on the blades will be verified through monitoring turbine power output with respect to measured wind speed at each turbine using 10-minute operational data to ensure that the LRM strategy is implemented and functioning effectively in practice. These measurements will be reviewed on a weekly basis to ensure the LRM is working as expected and the turbines are not loaded beyond their design criteria.

- **Staggered startup procedure, circuit by circuit:** Rather than restart all turbines at one time, Paulding II will re-start approximately 15 turbines each consecutive day to confirm that LRM is engaged and the re-start goes smoothly. If any issues arise, the start-up procedure will stop, and all running turbines will be shut down.

EDPR NA requests that your office and the OPSB conclude that the above mitigation plan is sufficient to allow for the re-start of Timber Road.

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edp renewables

We look forward to continued collaboration with the OPSB as we work to return Timber Road II to full operation in a safe and responsible manner.

Sincerely yours,

EDP Renewables North America, LLC

Brian Hayes
Executive Vice President, Asset Operations

cc: Gabriel Alonso, EDPR NA
Bill Whitlock, EDPR NA
Leslie Freiman, EDPR NA
Erin Bowser, EDPR NA
Christian Venderby, Vestas
Kim Wissman, OPSB

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Confidential

Timber Road II Incident Report

Blade Failures
Timber Road II — Payne, Ohio
April 24, 2012

1417 NW Everett Street, Portland, Oregon 97209
Document # 0030-3671

Vestas®

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Summary

Notice of Event

On April 24, 2012, at approximately 12:48 p.m. EDT, two 49m blades of the turbine at location 68, a V100-1.8 MW turbine ("Turbine"), broke at Timber Road II near Payne, Ohio.

Based on eyewitness account and data analysis, the incident was initiated when a single blade broke and struck the tower while rotating.

The Turbine faulted offline on Alarm 156 Chock Sensor as a result of this impact but was then remotely restarted by a Vestas technician.

After it was restarted, the remaining blades rotated a few more revolutions before the second blade struck the tower and scattered debris down to the surrounding area **(Exhibits 1 - 2)**.

At approximately 1:20 p.m. EDT, the Paulding II Site Manager arrived at the Turbine site. He immediately called Vestas personnel to inform them of the incident, and Vestas placed the Turbine into a paused state at approximately 1:24 p.m. EDT.

Immediate Safety Measures

- Vestas site personnel secured the site, including establishing a temporary clearance area of 500 meters. No injuries occurred.
- Following this incident, Vestas issued Safety Bulletin SB065 **(Exhibit 3)** requiring no remote resets are permitted for Alarm 156 Chock Sensor until a turbine inspection is performed. The Timber Road II site received and acknowledged the new requirement.
- Work is underway to release a new turbine software to permanently change the system capability for remote reset of Alarm 156 Chock Sensor. The operation and maintenance documentation will be updated accordingly. The timeline for implementation will be within the next few months. A firm timeline is being developed for the completion of this work.

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Activation of Incident Management Plan

- Upon notification from EDPR site personnel who discovered the blade damage, the Vestas Timber Road Site Manager initiated the Vestas-American Wind Technology (VAWT) Incident Management Plan **(Exhibit 4)**. The Incident Response Team was assembled to review the incident and discuss immediate actions.

- Vestas' Sustainability/HSE completed a Preliminary Incident Report **(Exhibit 5; *see also* Exhibit 6)** notifying Technology R&D at Vestas' global headquarters in Denmark of the incident.

- The Site Manager, in conjunction with Vestas Sustainability/HSE, completed the Preliminary Incident Report and assembled the Investigation Team. A Sustainability Field Support Professional was dispatched to assist in the investigation and help manage site safety. The Sustainability Field Support Professional is working with the investigation team to determine root cause and corrective actions.

- On the same day of the incident, at Vestas' recommendation, EDPR agreed to temporarily suspend power generation at the wind power plant.

Technical Personnel Dispatched to Site

- Vestas technical engineers immediately left en route to the site to inspect the damaged turbine as well as implement visual blade inspections for all remaining turbines at the wind power plant.

- Vestas engineers reviewed all Component Inspection Reports and assessed whether there was visual evidence of structural compromise. They found no visual evidence that any other blades at the plant were structurally compromised with the exception of one blade, which had been identified to have lightning damage.

- The gearbox and nacelle inspection resulted in no indication of failure association.

- All blade debris evidence was secured and shipped to Vestas laboratories for further processing and review.

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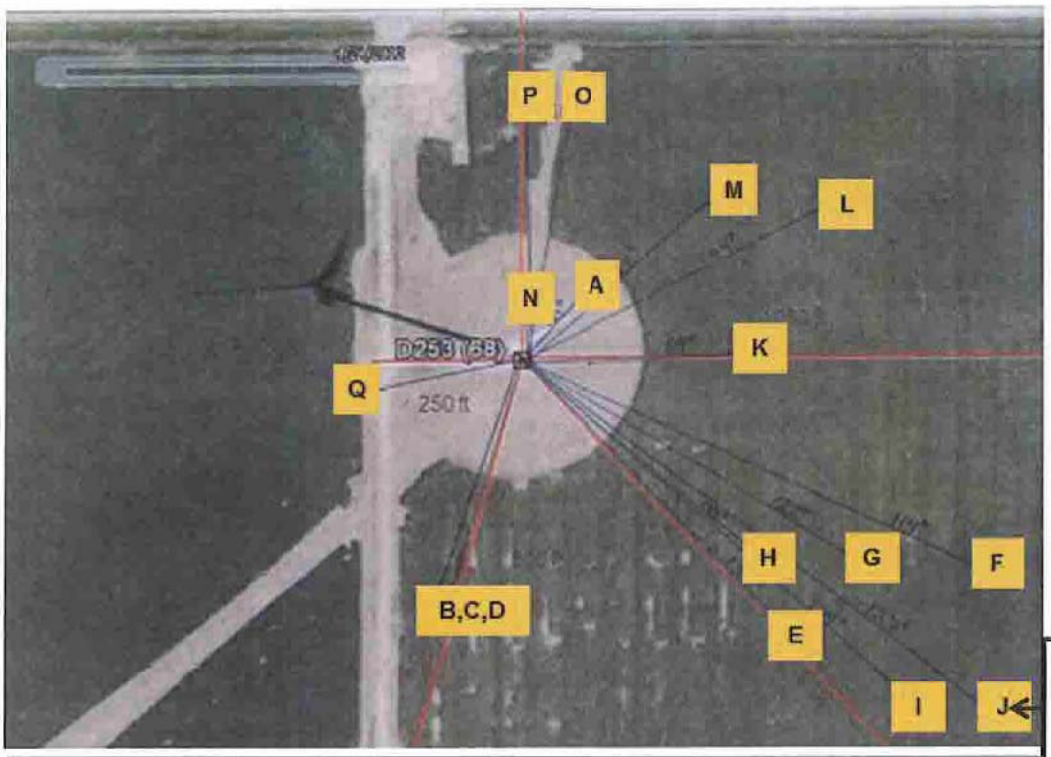
Exhibit 1

Blade Damage Summary— Turbine Serial Number 134099



Note: Debris map not to scale. The general orientation and relationship of debris pieces greater than 3 kg is shown above. Section "J "(the largest piece of debris more than ~3kg in weight) was recovered 233m from the tower base.

This information supersedes any previous versions of this document.

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Exhibit 2

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Exhibit 3

CONFIDENTIAL

Vestas

Alarm 156 – Shock Sensor Triggered for All 1.8, 2.0 & 3.0 MW Platforms

IMPORTANT

SAFETY Bulletin

Related Documents: 0014-3811

SB #065

Date: 04/26/12

Ops: Review by: D. Panting **Technical Review by: D. McAllister** **Approved by R.V. Regnier**

VBA: Reviewed by: D Ortega **Legal Review by: A. Campbell**

Safety Issue:

Potential damage to blades due to resetting turbine Alarm 156 before determining cause of alarm.

Contributing factors:

- Controller logic allows Alarm 156 'Chock sensor trigged' to be reset remotely.

Corrective Actions:

- Follow the remote reset guidelines as specified in the FAQ. Specifically, do not remote reset alarm 156.
- Perform blade inspection in accordance with DMS #0014-3811 'Condition Monitoring of Vestas Blades' prior to resetting alarm 156.
- Change controller logic to not allow a remote resets of alarm 156.

Response Required: YES **Service Order Generated for work: NO** **Date: N/A**

Site Manager Approval:

Joseph Schmidt	Completed	Normal	5/11/2012	100.00%	Approved by Joseph Schmidt	

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Exhibit 4

RESTRICTED

Vestas®

Policy:
Incident Management Plan

AME-POL.11.31.00
Revision: 07
Date: 2011-20-Jun

1. Policy

The Incident Management Plan presented in this document outlines the procedure for responding to any event which may endanger employee/customer/public health or safety; create significant economic or legal threat; or adversely affect Vestas' operations or credibility. All Vestas management and site personnel should be familiar with their responsibilities outlined in this plan. This plan and its provisions are in addition to those safety plans already in place at each of the company's sites. They are designed to complement each other, and together serve as the basis for the comprehensive incident response of the company.

The goal of this Incident Management Plan is to effectively establish the system and structure for making effective decisions in the event of a serious incident so the Incident Response Team can focus on the content of the situation.

Implementation of the Incident Management Plan will involve the formulation of a Core Incident Response Team that will interface with and coordinate activities with the On-Site Incident Response Teams as needed. This Incident Management plan focuses only on serious incidents as defined below.

2. Scope

Vestas American Wind Technology, Inc. – All locations
Vestas Canadian Wind Technology, Inc. – All locations

3. References

AME-POL.07.13.00 – Investigation Policy

AME-POL.07.25.00 – Legal Hold Policy

AME HSE – Incident Management

Addendum – Crisis Communication Guidelines for US and Canada

4. Responsibility

The ultimate responsibility for resolution of incidents in the best interest of Vestas rests with the President. The primary mechanism for fulfilling that responsibility is establishment and execution of the Vestas Incident Management Plan.

The primary coordination of this plan is the responsibility of the Sustainability Department.

Incident management is a continual process and will be viewed as an on-going high priority for Vestas management and employees. These guidelines will be reviewed on a regular basis and updated as needed. Questions regarding this plan can be directed to: VP, Sustainability.

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5. Serious Incident Definition

A situation is potentially a serious incident if any of the following statements are true:

- The health or safety of any person is, or may be, seriously affected
- There is a significant likelihood that legal consequences will result
- There is a significant likelihood that Vestas' ability to operate will be at risk
- There is a significant likelihood that liability may be assigned equaling or exceeding $100,000
- There is a significant likelihood that Vestas' credibility or reputation (image) will be at risk
- There is a significant likelihood that negative media coverage could occur that will damage Vestas' public image or brand
- There is an incident at a customer or supplier/vendor location that could impede Vestas' ability to continue to conduct business or operate

6. Identifying Potential Serious Incident

6.1 Activation criteria – the following criteria can be used to determine when to activate the Incident Management Plan. These criteria are examples and are not intended to be all inclusive.

People	Fatality, serious injury, kidnapping, terrorism (including bomb threats), etc. Serious injury could include: life threatening, paralysis, head injury such as skull fracture, lack of consciousness, serious burn
Environment	Damage to soil, air, water or protected species involving emergency services and/or agency involvement due to chemical spill, large oil leak, etc.
Process	Extended production stoppage (extending more than 1 day) due to: strikes, fire, serious malfunction, sourcing issue, power outage, IT disruption, etc.
Asset	Partial or total site disruption (extending more than 1 day) due to: fire, tornado, earthquake etc. Wind turbine fire or run-away condition that cannot be immediately addressed on site.
Other	Emergency services (e.g., police, fire department, hazardous material units) that results from a serious incident. Potential legal issues (strikes, child labor, corruption, unannounced regulatory audits, and other legal compliance issues) or pending lawsuit. Negative publicity from the media or the authorities.

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6.2 Tier 1 Incident Severity Reference Chart

The chart below can be used as a quick reference to the activation criteria for the Incident Management Plan.

6.2 Tier 1 Incident Severity Reference Chart

	IMPACT ON PARTICIPATION	INJURY	ILLNESS	SOCIAL/PSYCHOLOGICAL DAMAGE	Tier Level
1	SERIOUS INJURY >14 DAY ABSENCE	Hospital stay <12 hours, dislocation, frostbite, major burn, surgery, concussion, breathing difficulty, moderate hypo/hyperthermia	Medical treatment required, <12 hours hospital stay, serious asthma, serious infection, anaphylactic reaction	Very distressed, leaves activity and requires on-site counseling, unwilling to participate in activity ever again	1
	MAJOR ABSENCE DUE TO INJURY OR DISEASE	Hospital stay >12 hours, e.g., arterial bleeding, severe hypo/hyperthermia, loss of consciousness, spinal or head injury	Hospital stay >12 hours, e.g., infection or illness causing loss of consciousness, serious/major medical emergency, heart attack	Therapy/counseling required by professional, potentially long term	
	LOSS OF LIFE				

7. Incident Response Team

7.1 The Incident Response Team is compromised of the Core Incident Response Team and the On-Site Core Incident Response Team. It is supported by IT, as required.

7.2 Core Incident Response Team:

- VP, Sustainability (Incident Coordinator)
- President
- Chief Operating Officer
- VP, Communications
- Sr. VP, CFO
- Sr. VP, People & Culture
- VP & General Counsel
- VP, Construction
- VP, Service

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- Director/Senior Specialists, Insurance and Risk Management (Incident Secretary)
- Others as determined necessary

7.3 Support Members:

- IT Support

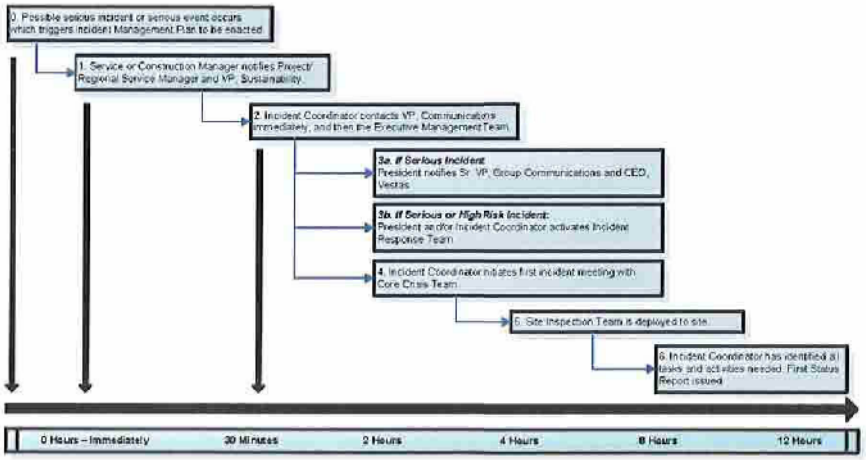
7.4 On-Site Core Incident Response Team:

- Regional Service / Construction Managers
- Site / Construction Managers
- Commissioning Supervisors / Lead Technicians

8. Serious Incident Notification Procedure

This section outlines the internal and external communications that are necessary to respond effectively to a serious incident. The flow chart diagrams the chain of command among company personnel. It is important to note that each situation will be different, and therefore, out of necessity, this network must be flexible.

8.1 Initial Flowchart for Incident Management Plan



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9. Duties and Responsibilities

9.1 Core Incident Response Team

- As Core Incident Response Team members are not equipped to be available 24x7, back-ups will be contacted if a Core Incident Response Team member cannot be reached.
- Is available 24 hours a day during the management of a serious incident to support the management and response (once the member has been contacted, they will support the active incident response as needed)
- Implements Incident Management Plan
- Is directed by Incident Coordinator
- Sets up virtual or off-site "Incident Response Center" if necessary (See Section 12 below)
- Interfaces with On-Site Core Incident Response Team
- Interfaces with government agencies, media, service providers, employees, customers and other interested relevant parties
- May add additional personnel as determined necessary

9.1.1 **President**

Alternate: Sr. VP, COO

- Decides, with the advice of Incident Team Coordinator and VP, General Counsel, if the Incident Response Team should be activated.
- Provides strategic direction to Core Incident Response Team through the Incident Coordinator
- Approves major strategic decisions made by the Core Incident Response Team
- Communicates with presidents of Customers
- Keeps Board of Directors informed during incident
- Serves as Company spokesperson, when appropriate

9.1.2 **Vice President, Sustainability** (Incident Coordinator)

Alternate: Sr. VP, P&C/ Advisor: VP, Business Academy

- Assesses situation – authorizes team to assemble as necessary
- Communicates with President – provides updates
- Leads Incident Response Team
- Manages Incident Response Team meetings
- Reviews incident management documents
- Ensures all Incident Response Team members, resources, offices, and sites are kept informed and/or provide support as needed
- Follows steps outlined in Incident Management plan

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- Regularly recaps situation, information known to moment
- Available at all times

9.1.3 **Director/Senior Specialist, Insurance and Risk Management** (Secretary)

Alternate: Legal Senior Specialist

- Maintains list of team members including contact information
- Maintains a log of all major developments, activities and decisions during the incident (Incident Log)
- Contact and involve Vestas' insurance company, when appropriate
- Conduct a post-incident/crisis review to identify lessons learned and opportunities for improvement
- Coordinate with Incident Coordinator on changes/revisions to the Incident Management Plan

9.1.4 **Chief Operating Officer**

Alternate: Chief of Staff, Operations

- Customer and Supplier communication, as needed
- Travels to incident location (alternate VP Construction of VP Service)

9.1.5 **Sr. Vice President, CFO**

Alternate: Director, Reporting & Compliance

- Provides analysis of financial impact of the incident
- Communicates findings to CEO and Board of Directors
- Coordinates with VP, General Counsel
- Provides financial background information for media coordinator
- Prepares accurate records of actions taken during incident management
- Reviews incident management procedures followed
- Monitors response actions for compliance with company's environmental protection policy

9.1.6 **Vice President, General Counsel**

Alternate: Legal Senior Specialist

- Provides advice and counsel on pertinent legal issues for Core Incident Response Team, CEO and Board f Directors
- Assess legal ramifications of the incident
- Determine if outside counsel will be engaged
- Determine if Legal Investigation Policy should go in to affect (AME-POL.07.13.00) to preserve confidentiality and protect such investigations from disclosure by the attorney-client privilege and/or work product doctrine

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- Determine if Legal Hold Policy should go into effect (AME-POL.07.25.00) to ensure relevant company records (paper and electronic) are preserved in the event of disputes, litigation, reasonably anticipated litigation or requests by third parties or governmental agencies

9.1.7 **Vice President, Communications**

Alternate: Specialist, Communications

Alternate: Government relations Senior Manager

Advisor: Sr. VP, Government Relations (if necessary)

- Coordinates media inquiries
- Manages media relations
- Monitors media activities
- Set-up media center, if appropriate
- Advises Incident Coordinator on appropriate spokesperson
- Prepares company spokesperson
- Drafts media information, including preliminary statement and Q&As.
- Releases statements to the media
- Manages PR consultant, if used
- Liaison with local, state, and federal governmental representatives (non-regulatory)
- Handles public inquiries
- Coordinates internal communications
- Compiles summary of events relating to incident
- Develops position statements for peer companies, industry organizations and other interest groups

9.1.8 **Senior Vice President, People & Culture**

Alternate: Director, Business Partners

- Contacts employees and families, as appropriate
- Coordinates employee information distribution with Communication
- Manages personnel files and records, as necessary, with shared services.
- Handles employee concerns and questions
- Coordinates benefit services
- Coordinates Employee Assistance Providers (EAP) with shared services

9.2 **On-Site Incident Management Team:**

- Are available 24 hours a day during incident to manage response
- Follows Incident Management Plan and the direction of the Team Coordinator and On-Site Manager

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- Interfaces with local media, government agencies, emergency service providers and other interested relevant parties, only as directed by Incident Coordinator
- Each On-Site Incident Team Member will be responsible for maintaining and updating an Incident Log throughout the duration of the incident

9.2.1 **On-Site Manager** (Construction Manager, Service Manager)

Alternate: Assistant Site Manager

- Determines Incident Severity Ranking
- Initial incident contact
- Confers initial assessment with Incident Team Coordinator
- On-Site incident manager
- Coordinates emergency personnel, law enforcement, insurance, regulatory agencies
- Coordinates security
- Updates Incident Coordinator
- Reviews and updates Incident Management Plan
- Ensures completion and submittal of all reports or other communications required by applicable laws and regulations
- Communicates with customer

10. Core Incident Response Team – Incident Contact Initial Actions

10.1 Receiving Phone Calls

10.1.1 Document the time of call

10.1.2 Verify the name, title and location of caller

10.1.3 Get phone/fax numbers

10.1.4 Get all details, separate fact from speculation

10.1.5 Ask what is being done to address the incident now

10.1.6 Verify with the caller all information has been recorded correctly

10.1.7 Advise on action, if it is immediately required

10.1.8 Agree on when you or someone else will call back

10.1.9 Establish how/where both parties are accessible

10.1.10 Record all pertinent information and provide to Director, Sr Spec., Insurance and Risk Management (Secretary) for inclusion in Incident Log

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10.1.11 Contact Project Manager or Regional Service Manager and VP Sustainability (Incident Coordinator) to report details

10.1.12 Update Incident Coordinator as situation continues

10.2 For Site-Related Incidents:

10.2.1 Ask about injuries, missing people, deaths

10.2.2 Find out what emergency services and/or government agencies have been or will be notified.

10.2.3 Ask what is being done to address the incident now

10.2.4 Determine what support/help is needed now

10.2.5 Record all pertinent information in Incident Log

10.2.6 Contact Project Manager or Regional Service Manager and VP Sustainability (Incident Coordinator) to report details

10.3 Initial Actions for VP, Sustainability, Incident Coordinator:

10.3.1 Receive initial briefing from Regional Service Manager, Construction Manager, or initial contact employee

10.3.2 Brief President and determine if event requires activation of Incident Response Team

10.3.3 Contact VP, General Counsel to inform of current situation

10.3.4 Contact VP, Communications if required

10.3.5 Meet with and chair meeting of Core Incident Response Team

10.3.6 Lead the Core Incident Response Team to:

- Review verified information known at the moment
- Review rumors (if any) about the incident
- Determine the likely implications of the situation
- Agree on what initial actions should be taken, by whom, when and how, what internal and external resources are needed
- Decide and advise the Service or Construction Manager on either:
  - What action to take, or
  - At what point should approval be obtained for any further actions(s)
- Determine if incident needs on-site management from Core Incident Response Team
- Determine, if possible, who else knows (including the media)
- Determine what communications, and to whom, should be undertaken, when and how

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- Define how members of the Core Incident Response Team can be involved via telephone, e-mail or fax to be kept informed and for their input
- Set time and place of next briefing session

10.4 Initial Actions for VP, Communications:

10.4.1 Contact Incident Response Team for initial briefing

10.4.2 Contact Group Communication manager for initial briefing

10.4.3 Handle initial media and public inquiries

10.4.4 Communicate with Incident Response Team Members and begin preparing a summary of events related to the incident

10.4.5 Consult with public relations firm, if necessary, to develop strategy for preparation of information release and response

10.4.6 Prepare drafts of (if not prepared prior to incident):
- Position statement detailing the company response to the incident
- Q&As
- Press Release, if appropriate

10.4.7 Distribute the draft position statement, Q&A, and press release to:
- Core Incident Response Team
- On-Site Core Incident Response Team

10.4.8 Finalize company position statement, Q&A, and Press Release

10.4.9 Finalize release strategy and release press documents to appropriate employees and media

10.4.10 Prepare company spokesperson(s)

10.4.11 Develop strategy for liaison with local, state and federal governments (non-regulatory)

10.4.12 Prepare detailed information summaries for communication

10.4.13 Report all media, government and public contacts to Incident Coordinator

10.5 On-Site Service or Construction Manager

10.5.1 Secure safety of all employees
- In all cases, employee safety is the first priority
- Evacuate employees from affected area as necessary
- Call for appropriate incident support (fire, police, medical)

10.5.2 Coordinate on-site emergency operations

10.5.3 Maintain regular communication with Incident Coordinator

10.5.4 Develop strategy to respond to event and prevent further harm or deterioration

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10.5.5 Gain control of the situation
- Isolate hazard

10.5.6 Care for the injured
- Administer first aid by certified personnel
- Do not move injured unless in imminent danger
- In the event of fatal injury, do not move body

10.5.7 Communication
- Notify immediate supervisor
- Do not discuss with outside sources

10.5.8 Consult with VP, General Counsel and then conduct initial investigation
- Secure affected area
- Photograph and document all information as soon as practical
- Identify and interview employees involved

10.5.9 Address employee morale
- Inform employees about incident
- Restore situation to normal before work is resumed

11. Communications – General Stakeholders

11.1 All Vestas-American Wind Technology, Inc. and Vestas-Canadian Wind Technology, Inc. Employees – Key Messages

A significant incident involving [insert specifics] occurred at [insert specifics] [Determine level of detail regarding incident that needs to be shared with employees and insert here]. At the direction of the President, the Incident Management Plan has been activated. We are undertaking all of the necessary steps to determine the cause of the incident and to work closely with our customer, appropriate regulatory agencies and [others if needed] on this matter. The following Vestas team members have been dispatched to the incident location: [insert specifics here]. We will provide regular updates regarding this matter as the situation warrants.

- Communication Method: Email
- Communication Owner: VP, Communications

11.2 Vestas Group – Key Messages

Vestas Americas experienced a significant incident involving [insert specifics] occurred at [insert specifics] [Determine level of detail regarding incident that needs to be shared with Group and insert here]. At the direction of the President, the Incident Management Plan has been activated. We are undertaking all of the necessary steps to determine the cause of the incident and to work closely with our customer, appropriate regulatory agencies and [others if needed] on this matter. The following Vestas team members have been dispatched to the incident location: [insert specifics here].

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We will be in close contact with appropriate Group staff, including [list here] with regular updates regarding this situation.

At this point, Group can help us with this situation by providing [list specifics here, if known].

- Communication Method: Serious Incident Report or email
- Communication Owner: VP, Sustainability

11.3 Customer (Incident Site) – Key Messages

Vestas has activated its Incident Management Plan to respond quickly and appropriately regarding an incident at [insert specifics here]. We will have staff on the ground at the site [list expected time of arrival]. In the meantime, our focus is on securing the safety of employees and equipment at the site. We are working closely with local first responders. Here is what we know so far [communicate details regarding injuries, equipment status, etc.].

Our Incident Response Team includes staff trained to work with the appropriate regulatory agencies and the media, should the need arise.

As soon as the incident team arrives and has the opportunity to further assess the situation, we would like to meet with appropriate members of your team to coordinate next steps regarding this incident.

- Communication Method: Phone call to key customer point of contact; email if not reached by phone.
- Communication Owner: VP, Construction for Project-related events; VP, Service for Service-related events.

11.4 All Other Customers – Key Messages

Vestas experienced an incident involving [insert specifics here] at [insert location here]. We have activated a response team to the site to determine the facts around the incident and to work with our customer there to take appropriate steps. Our commitment to our customers is to communicate with you any information regarding this incident that is relevant to your operations.

- Communication Method: Phone call or e-mail, depending on the customer particulars
- Communication Owner: VP Communications will contact appropriate owners depending upon the situation OSHA / Governmental / Regulatory Agencies – Key Messages

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11.5 **OSHA / Governmental / Regulatory Agencies – Key Messages**

Vestas is reaching out to you to notify [insert agency here] of an incident involving [insert specifics] which occurred at [insert specifics] [Determine level of detail regarding incident that needs to be shared with regulatory agency and insert here]. At the direction of the President of Vestas-American Wind Technology, Inc. or Vestas-Canadian Wind Technology, Inc., our corporate incident response plan has been activated. We are undertaking all of the necessary steps to determine the cause of the incident and to work closely with our customer, all appropriate regulatory agencies and [others if needed] on this matter. A response team has been dispatched to the incident location and will arrive there [insert specifics here]. We will provide regular updates regarding this matter as the situation develops.

- Communication Method: Phone call and/or e-mail
- Communication Owner: Sr. VP, Government Relations, VP, People & Culture and/or VP, Sustainability depending upon the agency involved

12. Incident Management Center

12.1 Physical Location – if a serious incident occurs during normal working hours (local time at headquarters) a conference room location will be communicated via phone/text to Core Incident Response Team members.

- Live Meeting will be used to conference in Core Incident Response Team members not in Portland, with call-in information sent via email.

12.2 Virtual Location – as serious incidents occur at all times, it is highly likely that the Core Incident Response Team will be called to meet in a virtual setting outside of normal business hours.

- Live Meeting will be used to conference Core Incident Response Team members when incidents occur outside of normal business hours, with call-in information sent via email or text.

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15. Post Incident Activities

15.1 After the incident has concluded and follow-up investigations have occurred, the Incident Response Team should convene to:

- Ensure root cause has been identified and corrective actions identified with owners assigned to drive corrective action closure.
- Assist in identifying/obtaining additional resources required to implement corrective actions.
- Update Incident Management Plan to incorporate lesson's learned from the incident follow-up.

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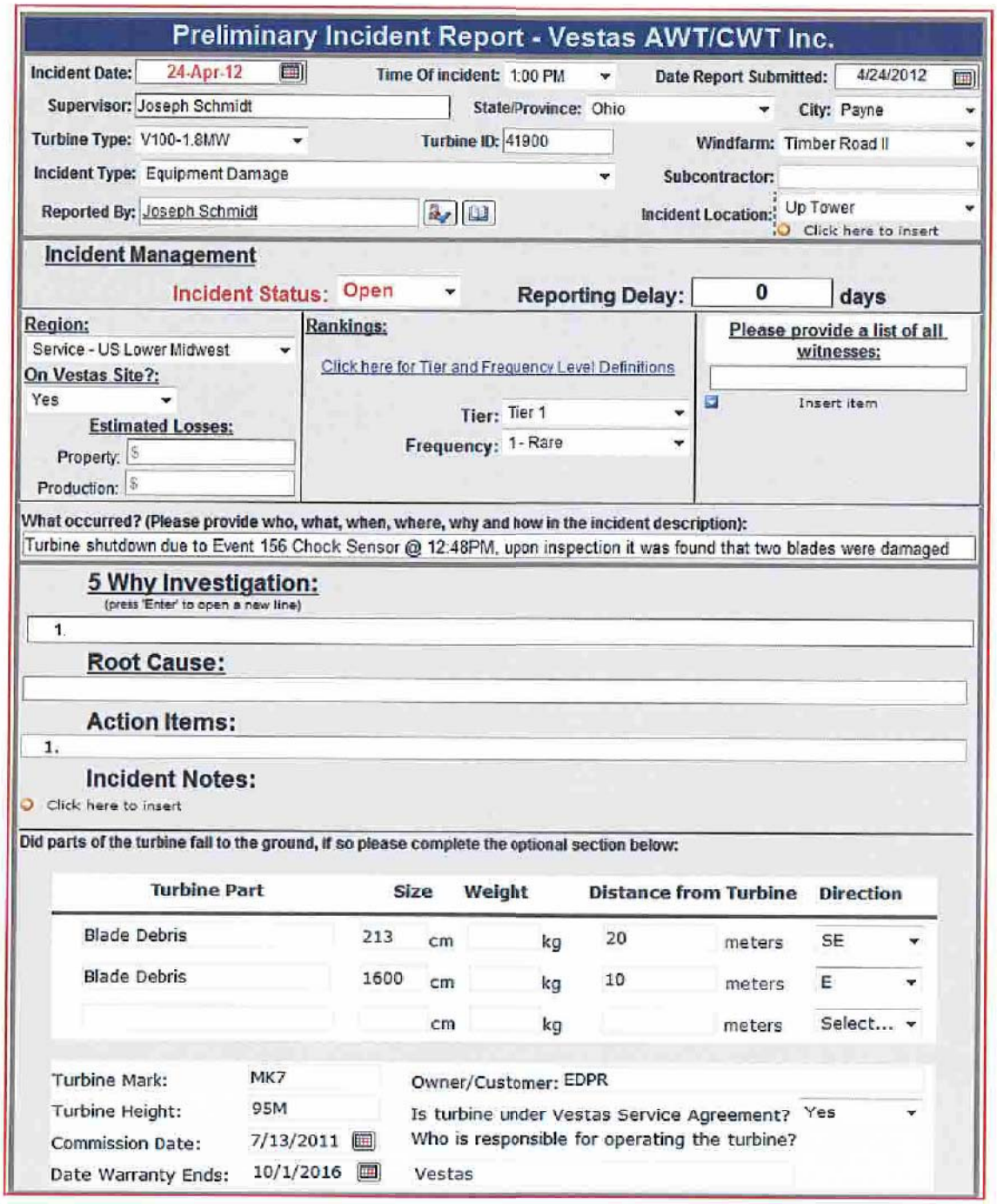
Exhibit 5



Preliminary Incident Report - Vestas AWT/CWT Inc.

Incident Date: 24-Apr-12 | Time Of Incident: 1:00 PM | Date Report Submitted: 4/24/2012

Supervisor: Joseph Schmidt | State/Province: Ohio | City: Payne

Turbine Type: V100-1.8MW | Turbine ID: 41900 | Windfarm: Timber Road II

Incident Type: Equipment Damage | Subcontractor:

Reported By: Joseph Schmidt | Incident Location: Up Tower

Click here to insert

Incident Management

Incident Status: Open | Reporting Delay: 0 days

Region: Service - US Lower Midwest

On Vestas Site?: Yes

Estimated Losses:

Property: $

Production: $

Rankings:

Click here for Tier and Frequency Level Definitions

Tier: Tier 1

Frequency: 1 - Rare

Please provide a list of all witnesses:

Insert item

What occurred? (Please provide who, what, when, where, why and how in the incident description):

Turbine shutdown due to Event 156 Chock Sensor @ 12:48PM, upon inspection it was found that two blades were damaged

5 Why Investigation:

(press 'Enter' to open a new line)

1.

Root Cause:

Action Items:

1.

Incident Notes:

Click here to insert

Did parts of the turbine fall to the ground, if so please complete the optional section below:

Turbine Part	Size		Weight		Distance from Turbine		Direction
Blade Debris	213	cm		kg	20	meters	SE
Blade Debris	1600	cm		kg	10	meters	E
		cm		kg		meters	Select...

Turbine Mark: MK7

Turbine Height: 95M

Commission Date: 7/13/2011

Date Warranty Ends: 10/1/2016

Owner/Customer: EDPR

Is turbine under Vestas Service Agreement? Yes

Who is responsible for operating the turbine?

Vestas

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Exhibit 6

Sustainability Summary
On April 24, 2012 The Timber Road site manager initiated the VAWT Incident Management Plan (AME POL. 11.31 DMS# 0009-0259) due to a Serious Incident at WTG 41900. The Incident Response Team consisting of the VAWT: Sustainability/HSE Specialist, President, Chief Operating Officer, VP & General Counsel, Chief Specialist, Warranty Management, Communications Specialist, Senior Specialist Insurance and Risk Management and the Key Account Specialist were assembled to review the incident and discuss immediate actions.

Sustainability issued a Serious Incident Report to notify Technology R&D in Denmark.
Site Manager in conjunction with Sustainability/HSE completed the Preliminary Incident Report per the Incident Management Program DMS# 0015-4463 and assembled the Investigation Team. A Sustainability Field Support Professional was dispatched to assist in the investigation and help manage site safety. The incident has been categorized as a Tier 1 and the Tap Root investigation methodology initiated.

Sustainability Field Support Professional is working with the investigation team to determine root cause and corrective actions.

Richard V. Regnier
Specialist, Sustainability
Technical Support

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Confidential

Vestas

Load Reduced Mode Operation for the V100-1.8 MW Wind Turbine Timber Road II Wind Farm, Ohio

Contents

1. Introduction

Purpose

The purpose of this document is to provide information on the Load Reduced Mode of operation for the V100-1.8 MW turbine. The Load Reduced Mode is an alternative to the normal operation strategy for the V100. The Load Reduced Mode operation is designed to reduce the loading on the blades of the V100 by using an alternative control strategy.

Reading Guidelines

Special words/terms and abbreviations are explained in section 4, Word/Abbreviation List.

Summary

The Load Reduced Mode is designed to reduce loads on the V100 blades. For operational wind speeds, the operational extreme load levels are reduced, on the average, by more than 30% compared to the design load level.

Through full scale fatigue testing, it has been documented that reducing the extreme load levels to 70% inhibits damage from propagating in blades that have been previously damaged. This means that by using the Load Reduced Mode, the risk of blades breaking is dramatically reduced, as any damage in the blade remains at its current level.

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2. Overall Test Description

To understand better why a blade used for the V100 turbine with manufacturing defects (wrinkles) might break at approximately radius 27, a distance of 27 meters from the centre of the rotor, a series of test has been performed. Preliminary analysis shows that the failure occurs, in the spar of the blade, and the failure occurs due to low cycle fatigue.

Our current understanding is that the damage has occurred after a high initiating load has been applied to the blade. The damage originates from a local deformity in the spar. The damage in the blade increases when additional high loads are applied. The damage in the blade continues until the blade fails in compression on the leeward side of the spar. After the failure of the leeward side, the blade buckles and the windward side of the spar breaks.

A series of test have been performed to determine the level of the initiating load and the level of the subsequence loading which causes the damage to grow.

Testing

Full scale fatigue testing was carried out at the Vestas test facility on the Isle of Wight.

The blade is fixed in a test jig where an exciter pushes the blade up and down in order to simulate operational loading. One fatigue cycle is the full motion of the exciter from the lowest position to the highest position and back again. The amplitude of the movement from the lowest to the highest position determines the size of the loading on the blade. The more the blade is pushed into extreme positions, the higher the loading.

The test method used complies with the relevant IEC TS 61400-23 standards and was performed at elevated loads. A series of sensors (strain gauges and acoustic emission sensors) were mounted on the blade to detect potential damage. During the test period, the blade was also scanned with ultrasound to detect and confirm any damage in the blade. For more information on the acoustic sensors used, please see that section later on in this report.

All of the blades tested in this report were produced at the Vestas blade factory in Lem, Denmark.

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First Test

Vestas conducted the first test on a new blade straight from the blade factory with no operational time, Blade A. A local deformity identical to those observed in the failed blades has been built in to the blade. The purpose of the test was to understand how a new blade with a local defect in the carbon layers responded to increasing load magnitude.

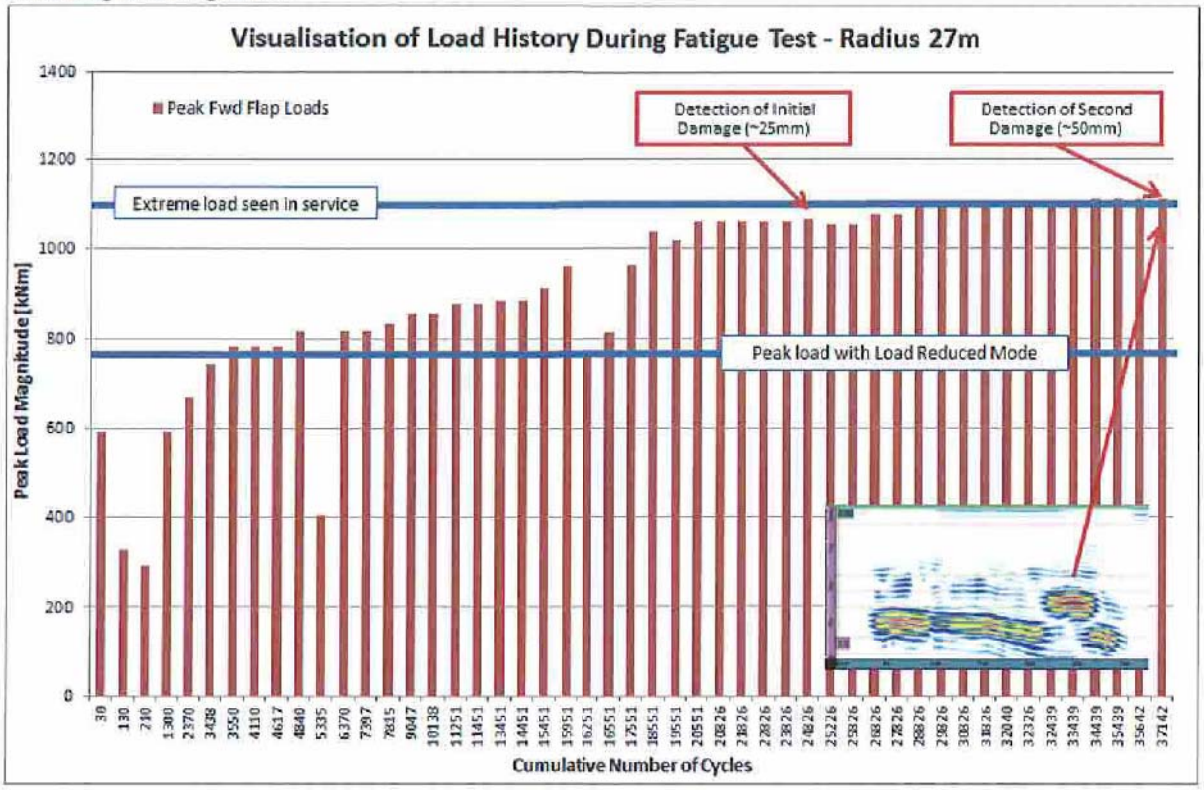

Figure 1 – Blade A, taken from blade production with no operation. Damage was introduced through increasing cyclic loading. An ultrasound scan, the inserted picture on bottom of the diagram, confirmed the damage in the blade.

Figure 1 shows the number of cycles the blade was tested at specific peak load magnitudes. The magnitude of the loading on the blade was increased over time. Damage was first detected when loading was over 95% of the extreme loading. The graph in figure 1 also shows the corresponding levels that would be experienced if load reduced mode had been applied.

Blade A was removed from the rig after 37,000 cycles and dissected. Using the required safety factors that are used for these tests and the standard method of calculating lifetime, 37000 cycles corresponds to 10 years. The blade was not broken at this stage and the test was stopped due to the detection of damage in the spar. The blade was dissected by cutting the spar along its length, into 5 mm wide strips, thereby enabling a cross-sectional view of the spar along its length. The size of the damage (if any) could then be confirmed by comparing each cross-section. The size of the damage would also be correlated to the indications from the non-destructive ultrasound tests.

The results of this fatigue test show that there is no damage initiated below 95% of the extreme load in new blade. This means that blades which have not exposed to loading over 95% of the extreme load, most likely do not have any damage.

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Second Test

The second test was performed on Blade B, which had been operated in the field for a period of several months. It was anticipated that this blade also had a local defect in the carbon layer. One of the purposes of this test was to bring the blade to a point where damage could be detected and then understand the behavior of the damage in the blade. This test has provided the loading threshold for when damage in the blade is stable and when the damage grows.

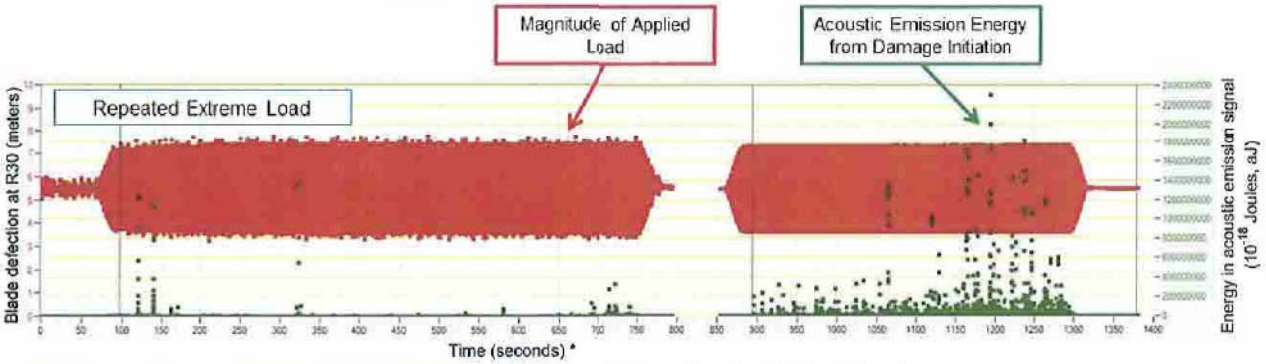

Figure 2 – Blade B was repeatedly loaded at extreme loads until damage occurred.

The blade was repeatedly loaded at extreme loads until damage occurred. The damage was detected and monitored by acoustic emission. The damage was also confirmed by ultrasound testing.

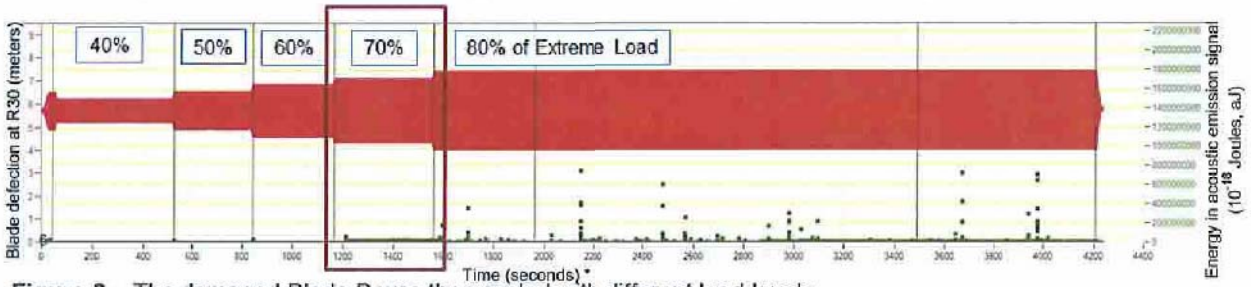

Figure 3 – The damaged Blade B was then cycled with different load levels

Blade loading was then progressively increased from the 40% to the 80% load level. Comparison of the green dots, representing the acoustic emission energy, indicates when the damage was stable and when it propagated. At 70% of the extreme load, no significant additional damage can be seen. At the 80% level, the damage increases.

Please note that the propagation of damage in the blade depends on the magnitude of the load and not on the number of cycles/duration of time. The load magnitude needs to be over a threshold level before the damage can grow.

*4000 seconds is approximately 2640 cycles

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3. Analysis and Conclusion

Load Reduction

Load and Power Modes are an advanced form of wind sector management where, instead of shutting the turbine down in the harsh wind sector, run it in a defensive load mode or vice versa run a more aggressive power mode in a benign sector.

The load reduction mode for the V100 was based upon a power mode developed for the V90. Some of the basic characteristics of the Load Reduced Mode are:

- Full Tilt Yaw Control (TYC) is always on.
- Time constants on filters changed to reduce pitch and power dynamics in partial load.
- The Opti-pitch curve has been modified so the pitch angle is always greater than 0 degrees.

The TYC decreases loading on the blades by altering the pitch angle depending on the blade position with respect to the tower.

The Load Reduced Mode entails a series of changes to the turbine operation. These operational changes result in the following load changes:

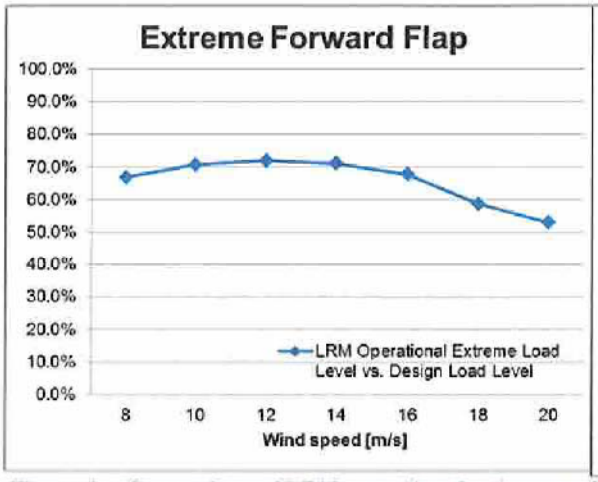

Figure 4 – Comparison of LRM operational extreme load level vs. design load level

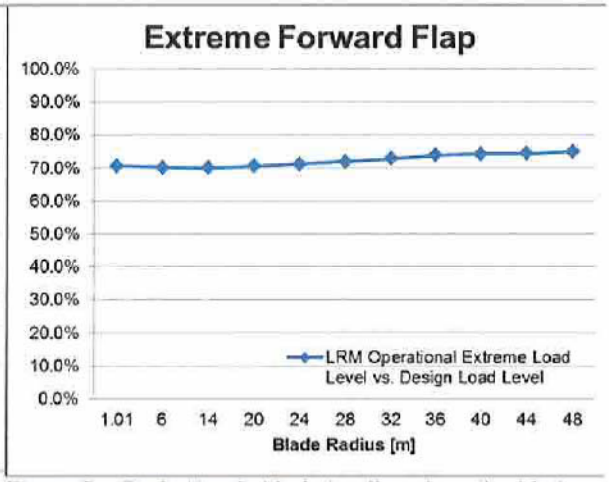

Figure 5 – Reduction in blade loading along the blade

The reduction in extreme forward flap loads compared to the wind speed is shown in figure 4. This diagram shows that the loading on the blades is reduced for all wind speeds. Similarly, the reduction in extreme forward flap loads compared to the position of the blade is shown in figure 5.

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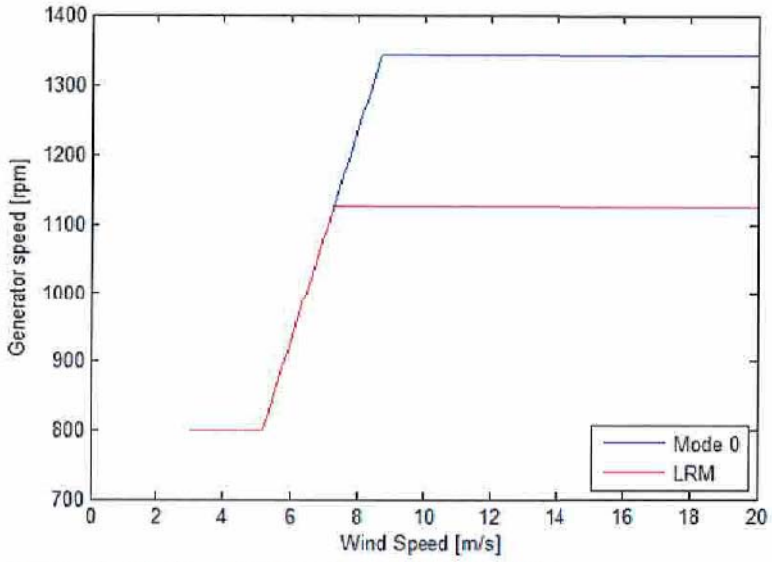

Figure 6 – Comparison of generator speed for design and LRM operation

The effect of the LRM can be seen through the characteristic change in the Generator speed for wind speeds above 10 m/s.

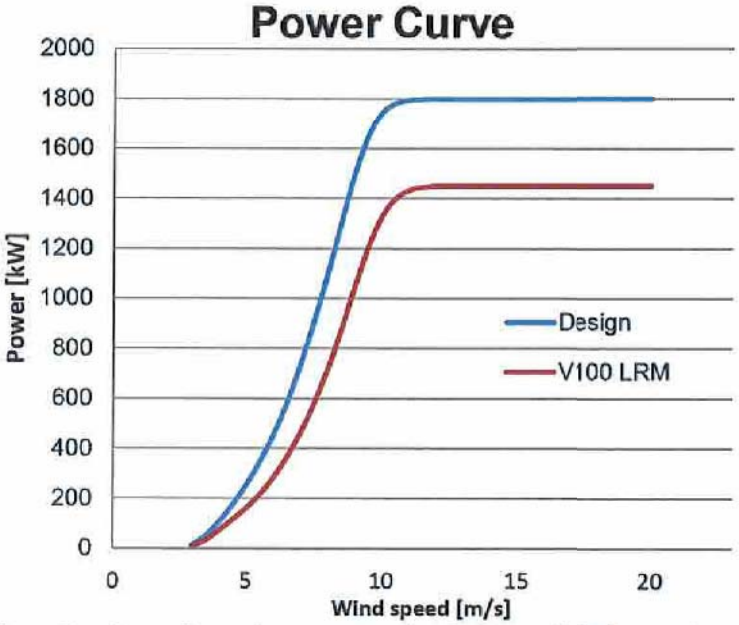

Figure 7 – Comparison of power curve for design and LRM operation

Since the LRM has an altered operational strategy, this also has an effect on the power curve as seen in Figure 7. When operating at full speed, the LRM has a reduced power output compared to the design operation.

The LRM was tested on a 60 Hz V100 turbine in Pueblo, Colorado, for a period of two months. At this point in time, the LRM has not been implemented at any V100 sites or V100 customers.

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Recommendation

In conclusion, the failure observed in the V100 blade is caused by "low cycle fatigue." Low cycle fatigue is characterized by a fatigue failure driven by high amplitude loads with and a small number of cycles. This means that the failure was initiated and progressed by a few (low number of) cycles with high load amplitude — not by the many (high number) load cycles with small amplitude as found in design loads. This has been verified by an external expert in fractography for carbon composites where low cycle fatigue is concluded to be the failure mechanism. This means that that there is a threshold for when the damage is initiated and another threshold for when the damage grows.

Low cycle fatigue is characterized by stresses close to (or at) the yield limit. This means that for high load amplitudes (and/or high maximum magnitudes of loading) global plasticity will be the dominating cause

The threshold has been determined by loading blades from the known V100 population in a test with several test levels. The blades were monitored by several detection systems, including acoustic emission which precisely can determine if damage is progressing. These tests clearly indicate that the damage does not progress during the approximately 250 cycles it was tested. This followed loading to a 100% level to simulate realistic circumstances. Testing at 100% loading has given us a good understanding of acoustic emissions with significant damage detectable with for example ultrasonic scanning. These emissions are greatly reduced at 80% and not present at 70%. Therefore loading at more than 70% is shown to be the threshold for damage to grow. Approximately 250 cycles is understood to be sufficient to show that the damage is not progressing to a critical level.

We have performed testing on our blade stand to understand the mechanism of wrinkles in the carbon fibres as this is what has been determined to have caused the initial blade to break at Timber Road II.

The test results indicate that the likelihood of blade spar failure caused by wrinkles can be decreased by reducing test loads to 70%.

Therefore, the application of an LRM operations mode will enable the Timber Road II wind farm to operate at a higher safety margin with a significantly reduced risk of potential blade spar failures.

The LRM will remain in effect as a precautionary measure until Vestas has implemented an alternative corrective action or has identified the at-risk and not-at-risk blade population in order to return the project back to full capacity, thereby disabling LRM control.

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4. Appendices

Word/Abbreviation List

Word/ Abbreviation:	Explanation:
LRM	Load Reduced Mode
R30	A position on the blade, 30 meters from the centre of the rotor
TYC	Tilt Yaw Control

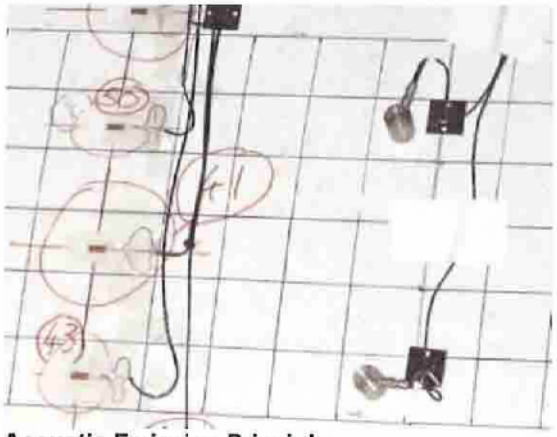
Software Requirements

The full functioning of the LRM is designed for and tested on software version 2011.04.258. Therefore turbines running a different software version will need to alter a few key parameters in order to implement the full robustness in the load reduction solution.

For example, for software version 2011.03.203, the following changes are required:

Parameter name	From	To	Comment
Px_Dev_MaxError	1.5	1	Restricting Pitch Deviation Ref. (alarm 190,81,82)
Px_OTC_LoadLead Alpha	1	0.33	Update to ensure correct performance of update OTC_TableGenSpdToPitchPow..
Px_OTC_LoadLead Td	0.33	0.25	Update to ensure correct performance of update OTC_TableGenSpdToPitchPow..
Px_OTC_RotorPow SlopeLimit	40000	4000	Update to ensure correct performance of update OTC_TableGenSpdToPitchPow..
Px_OTC_ThrustLim MaxSlope	100	20	Update to ensure correct performance of update OTC_TableGenSpdToPitchPow..

Description of Acoustic Emission Sensors



Acoustic Emission Principle:
From the NDT Resource Center at Iowa State University1:
Acoustic Emission (AE) refers to the generation of transient elastic waves produced by a sudden redistribution of stress in a material. AE is typically detected using piezoelectric crystals microphones operating over the 30 kHz to 1 MHz frequency range. For materials with high attenuation (e.g. plastic composites), lower frequencies may be used to better distinguish AE signals

Sensor Specification:

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The microphones used are Physical Acoustics Corporation, PK61 Acoustic Emission sensors operating over 40 – 70kHz with a resonant frequency at 55kHz.

Sensors Application:
The sensors were located over a region of interest on the blade with separations not greater than 2m. This ensured that any AE could be detected by at least two sensors simultaneously. A typical sensor installation is shown below on the outer surface of a test blade together with a close up of a sensor used. The testing also incorporated feedback from co-located strain gauges.

[1] http://www.ndt-ed.org/EducationResources/CommunityCollege/Other%20Methods/AE/AE_Index.htm
[2] http://www.pacndt.com/downloads/Sensors/PK/PK6I%20sensor%2064-08.pdf

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Root Cause Report

Timber Road II, US
Blade damage
V100-1.8 MW

Date of Incident:
2012-04-24
Document No.:
0030-3692 V01

Date of Report:
2012-06-01

Confidential information disclosed
to EDPR under the terms and conditions
of the Confidentiality Agreement
dated18 January 2011 in which the
parties have agreed to confidentiality

Contents

1 Preface

Two blades on same turbine have failed at Timber Road II.

The aim of this report is to establish a structural root cause for the failure. The report is in short format with a focus only on core results and summary of the blade findings.

The failed parts from the two blades are investigated and observations are presented.

Finally, a root cause is concluded.

2 Overall summary

The cross sections from the two blades have been investigated.

First, it has been investigated if the materials meet the requirements in terms of strength, position, thickness, and resin Tg. Tg is the glass transition temperature which indicates if the resin is sufficiently hardened.

It is concluded that the material in both blades meets these fundamental requirements.

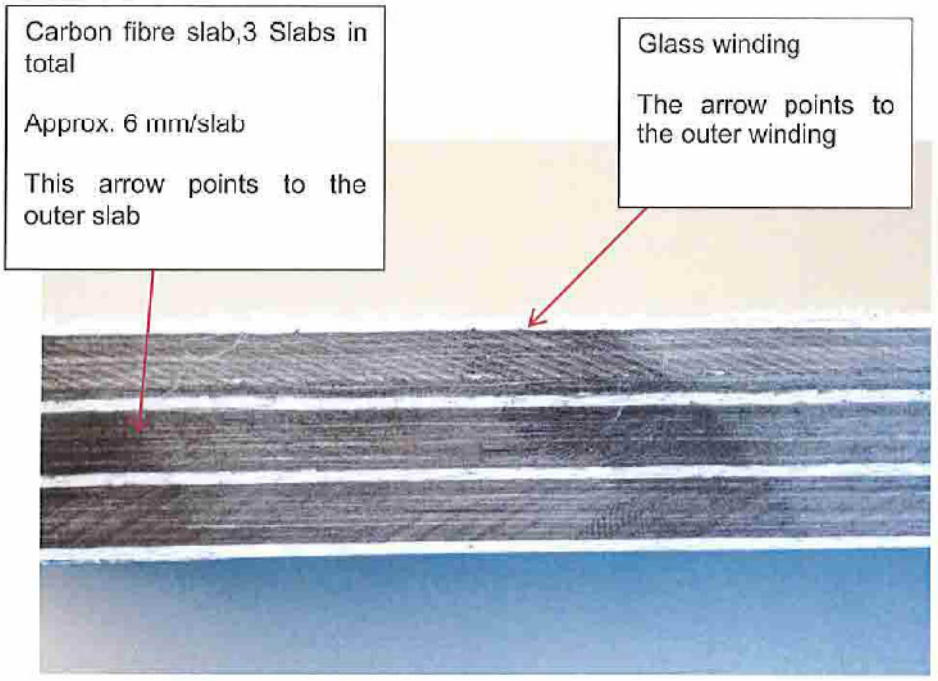
Hereafter, the carbon fibre has been investigated for misalignment and imperfections.

For blade #134099 (blade A), it is concluded that the failure is caused by a visible misalignment of the carbon fibres.

For blade #134090 (blade B), no misalignment of the fibres can be observed. The overall structural properties of this blade cannot be found to be compromised. It is concluded that this blade failed due to overload caused by the first blade failure.

3 Blade structure and terminology

For the sake of clarity in reading this report, a brief presentation of the spar structure and the belonging terminology are presented here.



4 Fundamental requirements

The fundamental properties of the material in the failed blades have been investigated to determine if they meet specifications.

The following properties have been investigated:

- Carbon tensile strength
- Carbon E- modulus, tension
- Carbon thickness and angle orientation
- Carbon composite air inclusions
- Glass/carbon interface, air inclusion
- Glass winding, thickness, positions and fibre angles,
- Resin cure state, Tg or glass transition temperature

The conclusion from these investigations is that all properties meet the expected levels and therefore cannot be the initiator or contributor to the cause of failure

5 Carbon fibre misalignment investigation

Both the tip end and the root end of the two failed blades have been investigated for fibre misalignments.

The tip ends of the blades have been severely damaged by the impact with the ground. However, it is still possible to inspect the debris, as carbon composites do not deform plastically. This means if there are fibre misalignments, they are not caused by the impact with the ground.

The two blades each have a tip end and a root end, each with a fracture where they once were connected. All four ends have been sliced into "skies" and inspected along the carbon fibre to check for fibre straightness.

Examples of the skies are shown below for the failed blade number A.

5.1 Results of the investigations

Image 1 – Tip section of blade A WW side. Outer slab topmost. Red circle indicates wrinkle, see Image 2 for more details

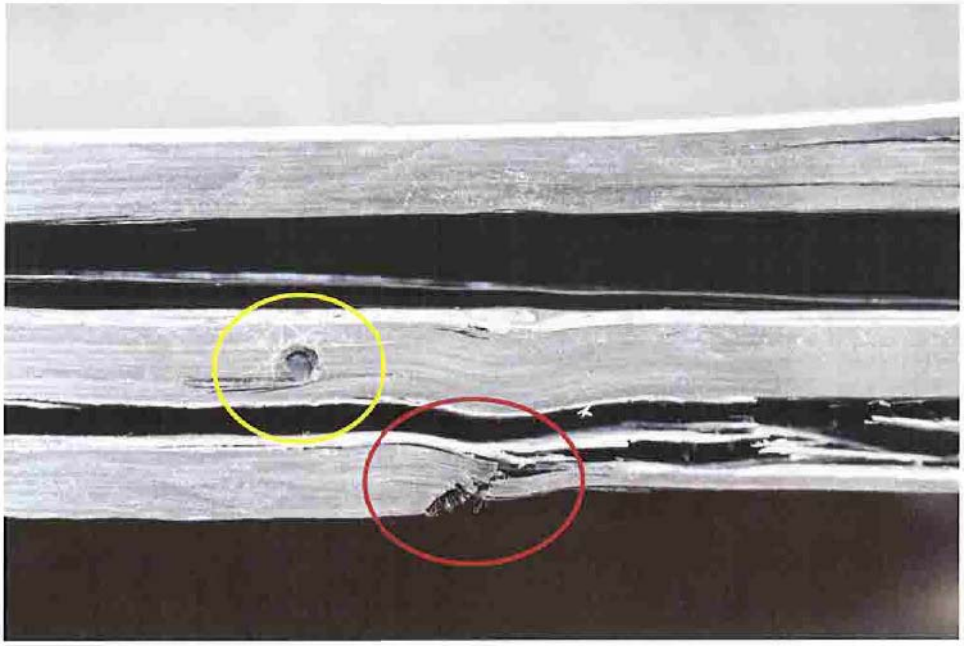


Image 2 – Close-up of red circled area in Image 1. Outer slab is bottommost in the picture. The area marked with a yellow circle is samples taken for cure analysis of the resin

Image 3 – Root section of blade A WW side. Red circle shows wrinkle

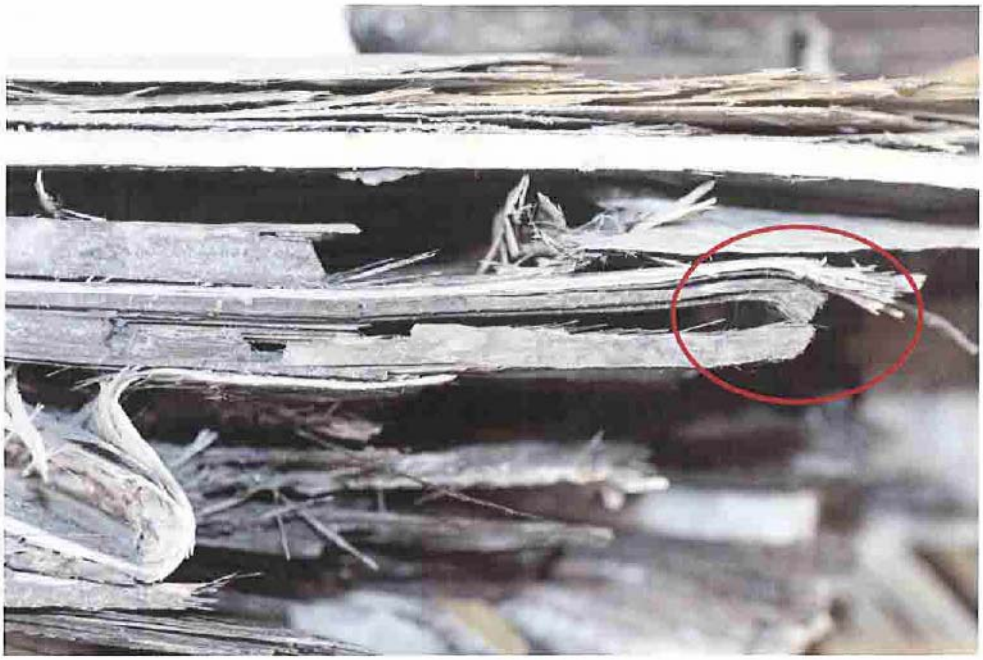


Image 4 – Close-up of red circled area in pic 3. Red circle shows a clear wrinkle

The skies from blade B R30 – shows no sign of misaligned carbon fibres.

It can be observed in blade A that there are significant carbon fibre distortions, mainly affecting the outer and the middle slab.

6 Uncertainties in the evaluation

It has been established that the fundamental composite properties, except fibre straightness are meeting the expected levels in blade A.

It has also been found that there are significant carbon fibre distortions in blade A.

A full blade test with the same fault has been tested to understand the mechanism of failure. The conclusion from this test is that misaligned carbon fibres are reducing the blade's ability to sustain low cycle fatigue, characterized by high loads for a low number (relative to the total number of load cycles) of cycles. The damage is propagating only on these high cycles and is not caused by a single extreme load

It is considered to be beyond doubt that the fibre misalignments are the initiator and the root cause for the blade A failure.

7 Conclusion

The failed cross section from the two blades have been investigated and analysed for composite properties and especially for carbon fibre misalignment.

It is found that the failure of blade A is caused by misaligned carbon fibres.

For blade B, neither the fundamental composite properties nor especially the carbon fibre straightness are compromised to a degree where it could have caused the blade to fail. It is therefore concluded that the blade must have failed due to an overload related to the failure of the first blade.

Vestas

to

EDP Renewables North America LLC
Attn. Executive Vice President Brian Hayes
Asset Operations

30 May 2012

Blade Failure at Timber Road II Wind Farm

Dear Mr Hayes,

In addition to your letter to Facilities, Siting & Environmental Analysis Division Ohio, we would like to provide you with information on the using Load Reduced Mode (LRM) as a precaution until Vestas recommends that the turbines can be return to normal operations.

We have performed testing on our blade stand to understand the mechanism of wrinkles in the carbon fibres as this is what has been determined to have caused the initial blade to break at Timber Road II.

The test results indicate that the likelihood of blade spar failure caused by wrinkles can be decreased by reducing test loads to 70%.

Therefore, the application of an LRM operations mode will enable the Timber Road II wind farm to operate at a higher safety margin with a significantly reduced risk of potential blade spar failures.

The LRM will remain in effect as a precautionary measure until Vestas has implemented an alternative corrective action or has identified the at-risk and not-at-risk blade population in order to return the project back to full capacity, thereby disabling LRM control.

Yours sincerely
Vestas Wind Systems A/S

Anders Vedel

Chief Technical Officer
Executive Vice President
Turbines R&D

Vestas Wind Systems A/S

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Company Reg. No.: 10 40 37 82
Company Reg. Name: Vestas Wind Systems A/S

Summary: Correspondence Submitting Correspondence from EDP Renewables North America LLC electronically filed by Mr. Michael J. Settineri on behalf of EDP Renewables North America LLC

Summary: Memorandum in Opposition to Motions of EDP, Invenergy, Gamesa, and Champaign Wind to Quash Subpoenas electronically filed by Mr. Jack A Van Kley on behalf of Union Neighbors United and Johnson, Julia Ms. and McConnell, Robert Mr. and McConnell, Diane Ms.