BEFORE
THE OHIO POWER SITING BOARD

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

MOTION FOR LEAVE TO FILE *INSTANTER*
COLOR VERSIONS OF THE PREFILED TESTIMONY OF
MARK THAYER AND MICHAEL SPEERSCHNEIDER

Champaign Wind LLC, the Applicant, respectfully moves for leave to file *instanter* (1) the attached Testimony of Mark Thayer, which duplicates the original prefiled testimony that was timely filed on October 29, 2012, with the exception that this version is in color; and (2) the attached Exhibit 5 to Michael Speerschneider's prefiled testimony, which replaces the black and white version of Exhibit 5 attached to Michael Speerschneider's testimony with a version in color. Mark Thayer's testimony currently on the docket contains graphs and tables (on pages 8 through 16) that should be in color. Likewise, Mr. Speerschneider's testimony contains an attachment (Exhibit 5) with pictures from a wind turbine training exercise that will be more legible if in color.

Normally, color copies would be provided at the hearing to replace any illegible black and white copies. Given the Administrative Law Judge's recent directive, and in an abundance of caution, Champaign Wind is filing this motion for leave to file *instanter* color copies of the prefiled testimony of Messrs. Thayer and Speerschneider to replace the existing black and white copies. The use of color copies will not prejudice any party and will ensure all pictures, graphs, and tables are legible. Accordingly, Champaign Wind requests that leave be granted *instanter,*

and that the attached color versions of the Testimony of Mark Thayer and Exhibit 5 to Michael Speerschneider's Testimony be accepted for filing. A Memorandum in Support of this Motion is attached.

Respectfully submitted,

M. Howard Petricoff (0008287), Trial Attorney
Michael J. Settineri (0073369)
Miranda R. Leppla (0086351)
Stephen M. Howard (0022421)
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Attorneys for Champaign Wind LLC

MEMORANDUM IN SUPPORT OF MOTION FOR LEAVE TO FILE *INSTANTER* COLOR VERSIONS OF THE TESTIMONY OF MARK THAYER AND MICHAEL SPEERSCHNEIDER

Champaign Wind LLC, the Applicant, respectfully moves for leave to file *instanter* the attached Testimony of Mark Thayer and Exhibit 5 to Michael Speerschneider's Testimony. In support of this Motion, Champaign Wind LLC states as follows:

1. On October 29, 2012, Champaign Wind LLC filed the Direct Testimony of Mark Thayer and the Direct Testimony of Michael Speerschneider in this matter.

2. The testimony for both Mark Thayer and Michael Speerschneider, filed on October 29, 2012, contains black and white graphs, tables and photographs that are difficult to read because they are printed in black and white.

3. Mark Thayer's testimony currently on the docket contains graphs and tables throughout the testimony which should be in color.

4. Mr. Speerschneider's testimony contains an attachment, Exhibit 5, with pictures from a wind turbine training exercise that will be more legible if in color.

5. Pursuant to the Administrative Law Judge's recent order, Champaign Wind is filing this motion for leave to file *instanter* color copies of the testimony on the docket to replace the existing black and white copies.

6. The use of color copies will not prejudice any party and will ensure all pictures, graphs and tables in color are legible. It will also save time at the hearing by alleviating the need to introduce new color exhibits during the testimony of Mr. Thayer and Mr. Speerschneider.

7. Accordingly, Champaign Wind LLC requests that leave be granted and that the attached color versions of the Testimony of Mark Thayer and Michael Speerschneider be accepted. No portion of Mark Thayer's testimony is changed through this filing, other than the replacement of black and white graphs and tables with color copies of the same graphs and tables. No part of Michael Speerschneider's testimony is being changed through this filing, other than the replacement of Exhibit 5 with a color copy so that the photographs are more legible.

WHEREFORE, Champaign Wind LLC respectfully requests that the Board grant its Motion for Leave to File *Instanter* the attached Testimony of Mark Thayer and Exhibit 5 of Michael Speerschneider's Testimony.

Respectfully submitted,

M. Howard Petricoff (0008287), Trial Attorney
Michael J. Settineri (0073369)
Miranda R. Leppla (0086351)
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Attorneys for Champaign Wind LLC

CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing document was served upon the following parties of record via e-mail on this 6th day of November, 2012.

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Color Copy of

the Direct Testimony of Mark Thayer

Case No. 12-0160-EL-BGN

BEFORE
THE OHIO POWER SITING BOARD

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

DIRECT TESTIMONY OF MARK THAYER

Q.1. Please state your name and business address?

A.1. My name is Mark Thayer. I am an Emeritus Professor in the Department of Economics at the San Diego State University, San Diego, Ca 92182.

Q.2. On whose behalf are you testifying on today?

A.2. I am testifying on behalf of Champaign Wind LLC, the Applicant in this proceeding.

Q.3. What is the purpose of your testimony?

A.3 The purpose of my testimony is to discuss the relationship between wind farms and surrounding property values

Q.4. Please provide a summary of your qualifications

A.4. I received my Ph.D. in Economics from University of New Mexico in 1979. My field of expertise is environmental, natural resource, and energy economics. I am currently an emeritus professor and the Chairperson in the Department of Economics at San Diego State University. I have thirty years of experience in both university and government service and extensive experience integrating environmental and energy

related matters into decision making at the state and federal level. I have published numerous research articles in professional journals such as the *American Economic Review, Journal of Political Economy, Journal of Environmental Economics and Management, Land Economics, Natural Resources Journal, Journal of Urban Economics, Economic Inquiry, Journal of Sports Economics, and Journal of Human Resources*. I have been a principal investigator on projects funded by entities such as the California Air Resources Board, California Energy Commission, U.S. Environmental Protection Agency, U.S. Geological Survey, the South Coast Air Quality Management District, the National Science Foundation, and numerous private entities. My recent research includes a grant from the California Air Resources Board to examine the impact of air pollution on cardiovascular disease, on-going research projects related to energy efficiency (both program development and evaluation), an evaluation of the economic effects of nickel refining, and the assessment of the impact of wind farms and solar photovoltaic energy on residential property values (see Appendix A for my entire curriculum vitae).

Q.5. Please provide a summary of the recent literature on the impact of wind farms on nearby property values.

A.5. There have been five large empirical studies completed since December 2009 that examined the impact of wind farms on nearby property values: (1) "The Impact of Wind Power Projects on Residential Property Values in the United States: A Multi-Site Hedonic Analysis" (B. Hoen, R. Wiser, P. Cappers, M. Thayer, and G. Sethi), December 2009; (2) "Wind Farm Proximity and Property Values: A Pooled Hedonic Regression Analysis of Property Values in Central Illinois" (J.L. Hinman), May 2010; (3) "The

Effect of Wind Farms on Residential Property Values in Lee County, Illinois" (J. Carter), Spring 2011; (4) "Values in the Wind: A Hedonic Analysis of Wind Power Facilities" (M.D. Heintzelman and C.M. Tuttle), July 2011; and (5) "Impact of the Lempster Wind Power Project on Local Residential Property Values" (M. Magnusson and R. Gittell), January 2012. In practice these studies have become known as: (1) the LBNL study since it was conducted by the Lawrence Berkeley National Laboratory; (2) the Hinman study; (3) the Carter study; (4) the Clarkson study, which is the university that employs the authors; and (5) the Lempster study. These studies all use similar methodologies (hedonic price method) and data and, remarkably, come to the exact same conclusion. Specifically, all studies conclude that, post-operation/construction, there is ***no identifiable effect*** of wind power projects on nearby residential property values. In addition, three of the studies (LBNL, Hinman, and Clarkson) suggest that there may be negative property value effects in the post-announcement, pre-construction phase. This effect has been labeled "anticipation stigma" by Hinman. However, in all studies these anticipation effects are transitory and disappear once the operation of the wind farms commences.

Q.6. Please provide a brief explanation of the empirical methodology used to examine the impact of wind farms on nearby property values.

A.6. The hedonic pricing method is a data intensive process that requires information on a large number of residential property sales (many thousands) and corresponding home characteristics –quantity measures (e.g., square feet of living area, lot size, number of bathrooms, bedrooms, etc.), quality measures (e.g., number of fireplaces, condition of home, presence of pool, air conditioning, scenic vista, etc.), location specific variables

(e.g., local school quality, demographics, socioeconomic status, distance to important activities, environmental quality measures, etc.), and the variables of interest (e.g., view of wind turbines, distance to wind turbines).

The hedonic price method has been used by economists and real estate practitioners for over 40 years and is a "method for estimating the implicit price of the characteristics that differentiate closely related products in a product class." Thus, the hedonic pricing model is designed to place an economic value on specific characteristics of a home (e.g., value of an additional bathroom, a pool, or view of wind turbines). The method uses a large number of observations (many thousands) and controls (holds constant) a large number of possibly confounding variables. Data is generally drawn from a large geographic area in order to obtain enough variation in all characteristics. Data can be from either a restricted period of time (cross-sectional analysis) or an extended period of time (time-series analysis). Finally, the method can be used effectively to appraise homes due to extensive data set – however, constantly updating the data set is expensive and time consuming.

The hedonic price method is *not* an appraisal model, which is designed to determine the estimated selling price of an individual home, uses a small number of observations (comps), controls (holds constant) a small number of variables (square footage, home style, pool), uses data from a very restricted area (e.g., close to the subject home) and from a very restricted time period (e.g., previous six months). An appraisal model cannot be used effectively to evaluate the contributory value of a specific home characteristic due to insufficient observations.

Q.7. As a co-author please provide a summary of the LBNL study.

A.7. The study was completed by the Environmental Energy Technologies Division of the Ernest Orlando Lawrence Berkeley National Laboratory (LBNL) and was funded by the Office of Energy Efficiency and Renewable Energy (Wind and Hydropower Technologies Program), U.S. Department of Energy, Contract No. DE-AC0205CH1123. The Lawrence Berkeley National Laboratory is an independent (i.e., not associated with or beholden to utilities, government agencies, etc.) national lab.

Prior to the LBNL study the literature on the effect of wind farms on nearby property values could be characterized as: (1) over-reliant on surveys of homeowners or real estate professionals, rather than quantifying real impacts based on market data; (2) based on small datasets from a single wind project study area, making it difficult to extrapolate findings; (3) based on simple statistical techniques that allow results to be dramatically influenced by small numbers of sales transactions or survey respondents; (4) lacking reported statistical significance of the results, making it difficult to determine if the results were meaningful; (5) concentrated on Area Stigma while ignoring Scenic Vista and/or Nuisance Stigma; (6) failing to include field visits to homes to determine wind turbine visibility and collect other important information; and (7) generally not subject to peer-review (see Figure 1).

In response, the LBNL study was designed to be data-rich and comprehensive in that it is based on a large number of observations on residential sales transactions occurring both pre- and post-construction surrounding a representative sample of wind farms at multiple locations in the U.S., included visits to each home to determine wind turbine visibility and to collect other important information about the home (e.g., the quality of the scenic vista), used multiple statistical models to explore magnitude and statistical significance of

potential effects, tested for the presence of all three stigmas (area stigma, scenic vista stigma, and nuisance stigma), based on rigorous analysis of the data, and culminated in an LBNL report, and a paper submitted to and accepted at a peer-reviewed academic journal.

As indicated, the LBNL study was designed to examine three potential stigmas associated with wind power projects: (1) area stigma – concern that surrounding areas will appear more developed or industrialized; (2) scenic vista stigma – concern over decrease in quality of scenic vistas from homes; and (3) nuisance stigma – concern that factors (e.g., noise, vibration) that occur in close proximity will have unique impacts.

The LBNL study used data from a representative set of wind power projects. Specifically, home sales transactions (not assessments, listings, or appraisals) were collected from ten study areas surrounding 24 wind farms in nine states (see Figure 2) – a total of 7,459 sales transactions (1,754 pre-announcement, 768 post-Announcement / pre-Construction, and 4,937 post-construction). Figure 3 provides summary data for the study areas, with comparative information for the zip codes surrounding the Tule wind project. Each sales transaction contained all important home characteristics (quantity and quality measures and location specific variables). In addition, each and every home in the data set was visited by the research team to ascertain wind turbine visibility and proximity to wind turbines, and to collect other important information about the home (e.g., the quality of the scenic vista). Each home was given a wind turbine visibility rating (see Figure 4) and was placed on a grid relative to the wind turbines (see Figure 5).

Figure 1
Previous Wind and Property Studies

Document Type Author(s)	Year	Number of Transactions or Respondents	Before or After Wind Facility Construction Commenced	Area Stigma	Scenic Vista Stigma	Nuisance Stigma
Homeowner Survey						
Haughton et al.	2004	501	Before	- *	- *	
Goldman	2006	50	After	**none**		
Firestone et al.	2007	504	Before	- *	- *	
Bond	2008	~300	After		- ?	- ?
Expert Survey						
Grover	2002	13	After	**none**		**none**
Haughton et al.	2004	45	Before	- *	- *	
Khatri	2004	405	Before‡	- ?		- ?
Goldman	2006	50	After	**none**		**none**
Crowley	2007	42	After	**none**	**none**	**none**
Kielisch	2009	57	Before‡			- ?
Transaction Analysis - Simple Statistics						
Jerabek	2001	25	After			**none**
Jerabek	2002	7	After			**none**
Sterzinger et al.	2003	24,000	After	**none**		
Beck	2004	2	After			**none**
Poletti	2005	187	After	**none**		**none**
DeLacy	2005	21	Before†	**none**		
Goldman	2006	4	After	**none**		
Poletti	2007	256	After	**none**		**none**
McCann	2008	2	After			- ?
Kielisch	2009	103	After			- ?
Schneider	2010	2,330	Before	- */ **none**		
Transaction Analysis - Hedonic Model						
Jordal-Jorgensen	1996	?	After			- ?
Hoen	2006	280	After		**none**	
Sims & Dent	2007	919	After			-,*
Sims et al.	2008	199	After		-/+ *	
Hoen, Wiser et al.	2009	7,459	After	**none**	**none**	**none**

" none " indicates the majority of the respondents do not believe properties have been affected (for surveys) or that no effect was detected at 10% significance level (for transaction analysis)

"- ?" *indicates a negative effect without statistical significance provided.*

"- *" *indicates statistically significant negative effect at 10% significance level*

"-/+ *" *indicates positive and negative statistically significant effects at 10% significance level*

† *Sales were collected after facility announcement but before construction*

Figure 2
Collective Sales Data from Ten Study Areas Surrounding 24 Wind Farms in Nine States

7,459 Residential Sales Transactions

1,754 Pre-Announcement, 4,937 Post-Construction, and

768 Post-Announcement-Pre-Construction

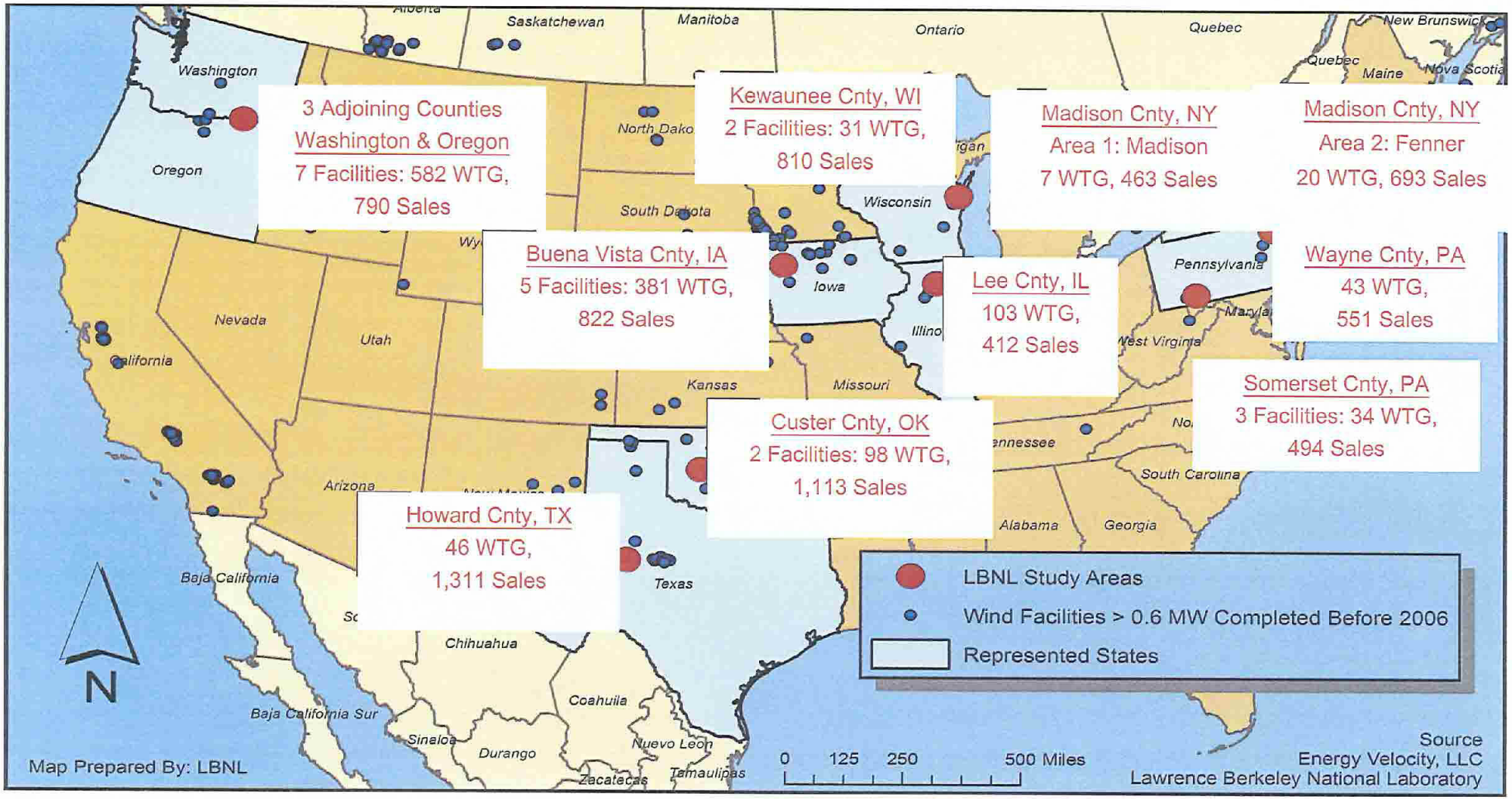


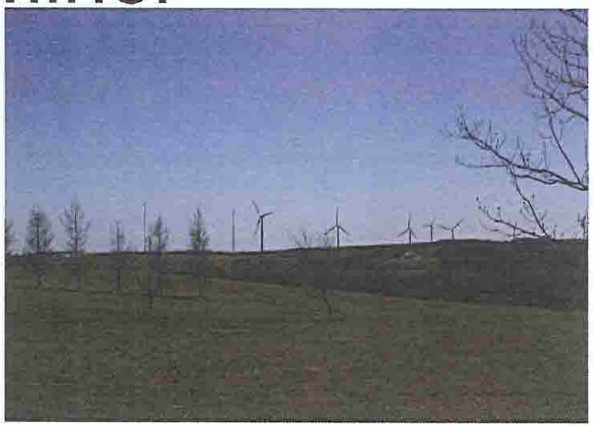
Figure 3
Comparative Data

County	Population	Population/mi2	Median Age	Median Income	Median Home Value
Benton, WA	159,414	94	34.4	$ 51,464	$ 162,700
Walla Walla, WA	57,709	45	34.9	$ 43,597	$ 206,631
Umatilla, OR	73,491	23	34.6	$ 39,361	$ 138,200
Howard, TX	32,295	36	36.4	$ 36,684	$ 60,658
Custer, OK	26,111	26	32.7	$ 35,498	$ 98,949
Buena Vista, IA	19,776	36	36.4	$ 42,296	$ 95,437
Lee, IL	35,450	49	37.9	$ 47,591	$ 136,778
Kewaunee, WI	20,533	60	37.5	$ 50,616	$ 148,344
Door, WI	27,811	58	42.9	$ 44,828	$ 193,540
Somerset, PA	77,861	72	40.2	$ 35,293	$ 94,500
Wayne, PA	51,708	71	40.8	$ 41,279	$ 163,060
Madison, NY	68,829	106	36.1	$ 53,600	$ 109,000
Oneida, NY	232,304	192	38.2	$ 44,636	$ 102,300
Champaign, OH	39,713	93	37.0	$ 47,814	$ 126,194

Figure 4
Four Qualitative Ratings Were Used for Dominance of View of Wind Turbines

Minor

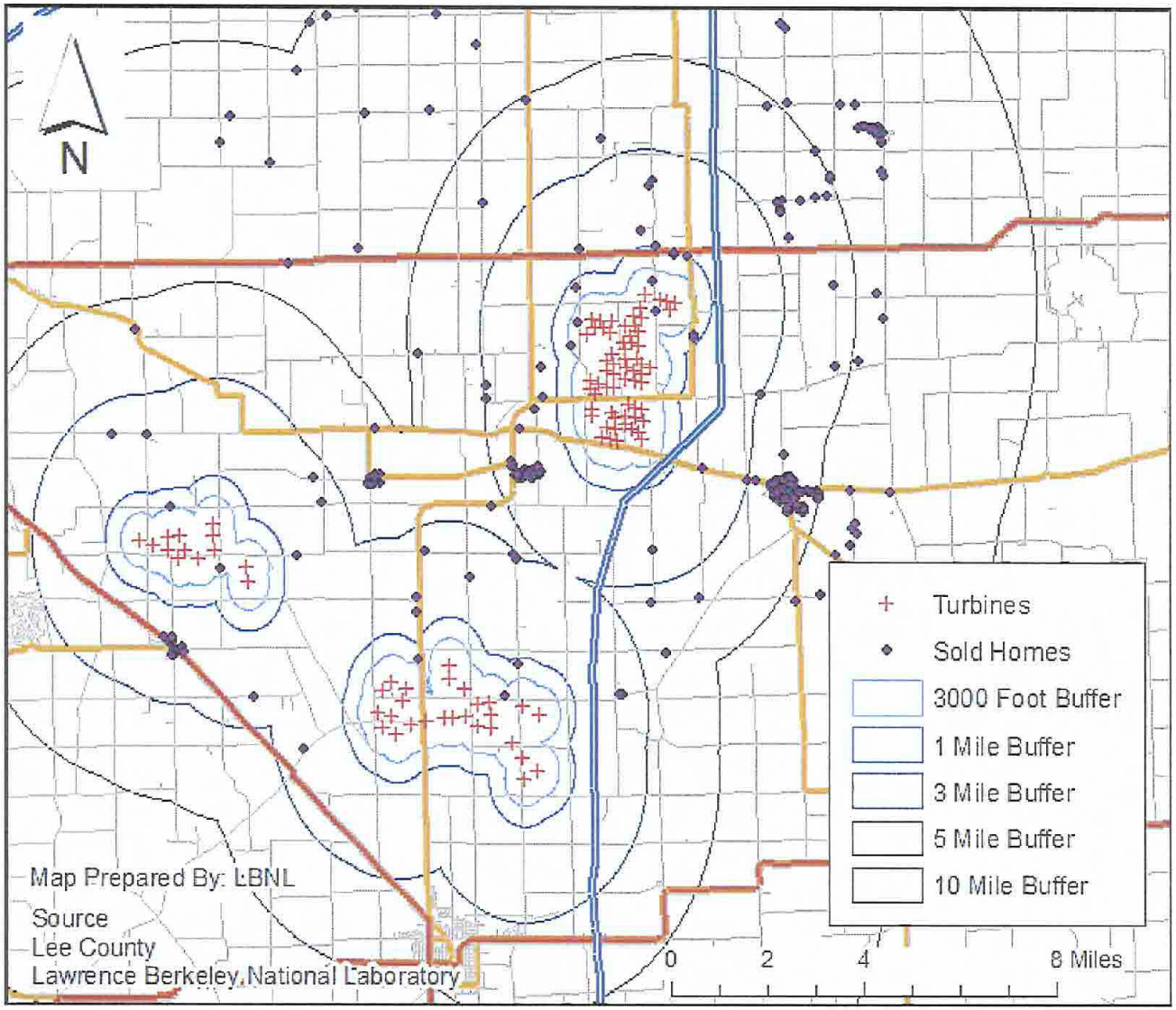
Extreme



Moderate

Substantial

Figure 5
Distance to Nearest Turbine at Time of Sale Was Determined



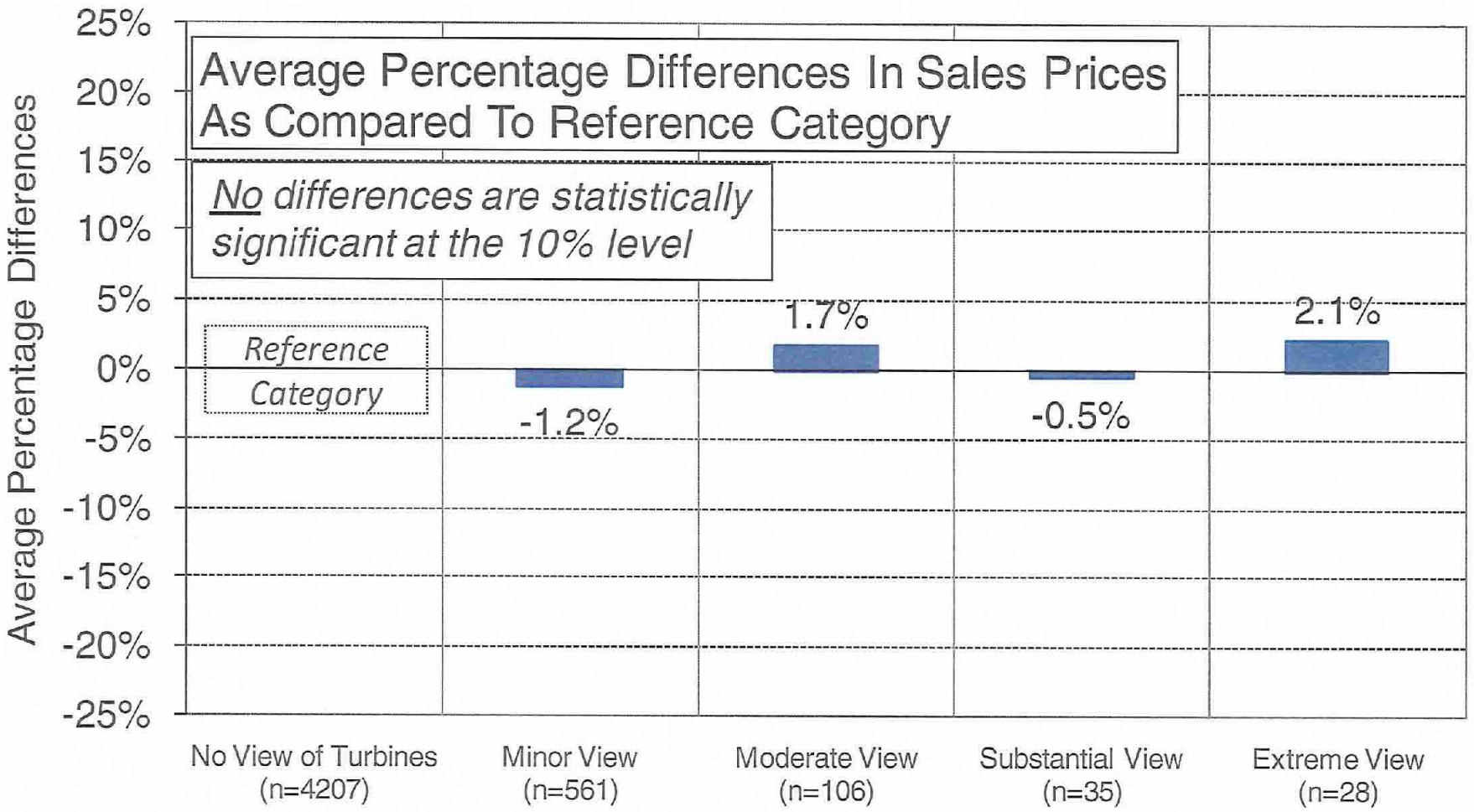
The results of the LBNL study are depicted in Figures 6 – 8. As shown in Figure 6 there is no statistically significant relationship between view of turbines and home sale prices; that is, views of the turbines do not negatively (or positively) affect home sales prices. Likewise, as shown in Figure 7, proximity to wind turbines has no statistically significant impact on home sales prices. Finally, as shown in Figure 8, homes nearest the turbines were depressed before construction and appreciated the most after construction while homes further away were largely unchanged over time. The overall conclusions from the LBNL report can be summarized as follows: the risks of property value impacts are often expected but the LBNL research suggests that property value impacts related to view and distance are not significantly different from zero. Specifically, the LBNL study found: (1) no statistical evidence that sales prices of homes with a view of the turbines were significantly affected even if the view was "dramatic;" (2) no statistical evidence that sales prices of homes near wind facilities were significantly affected by those facilities as compared to other homes in the region; and (3) no statistical evidence that sales prices of homes within a mile of the nearest wind turbine were significantly affected by those facilities as compared to other homes in the region.

In addition, the LBNL research team used alternative statistical models (e.g., repeat sales and sales volume analyses) and offer the following conclusions. First, appreciation rates for homes near the wind farms were not significantly different than appreciation rates for homes located farther from the wind farms. Second, the sales volume of homes near wind farms was not statistically different than the sales volume of home located farther from the wind farms.

The LBNL research team also conducted a variety of sensitivity tests to make sure that the base results were robust and stable and unaffected by influential observations, functional form, sampling, the set of independent variables, etc. The results were found to be unaffected by any of these potential influences. The LBNL report was then subject to two levels of external review. First, the draft report was sent to approximately 50 experts and comments were incorporated into a revised report that eventually became a LBNL monograph. Second, a draft manuscript was submitted to a leading academic journal for evaluation and a decision regarding publication. After an extensive review the paper was accepted and ultimately published in the *Journal of Real Estate Research* (July/September 2011).

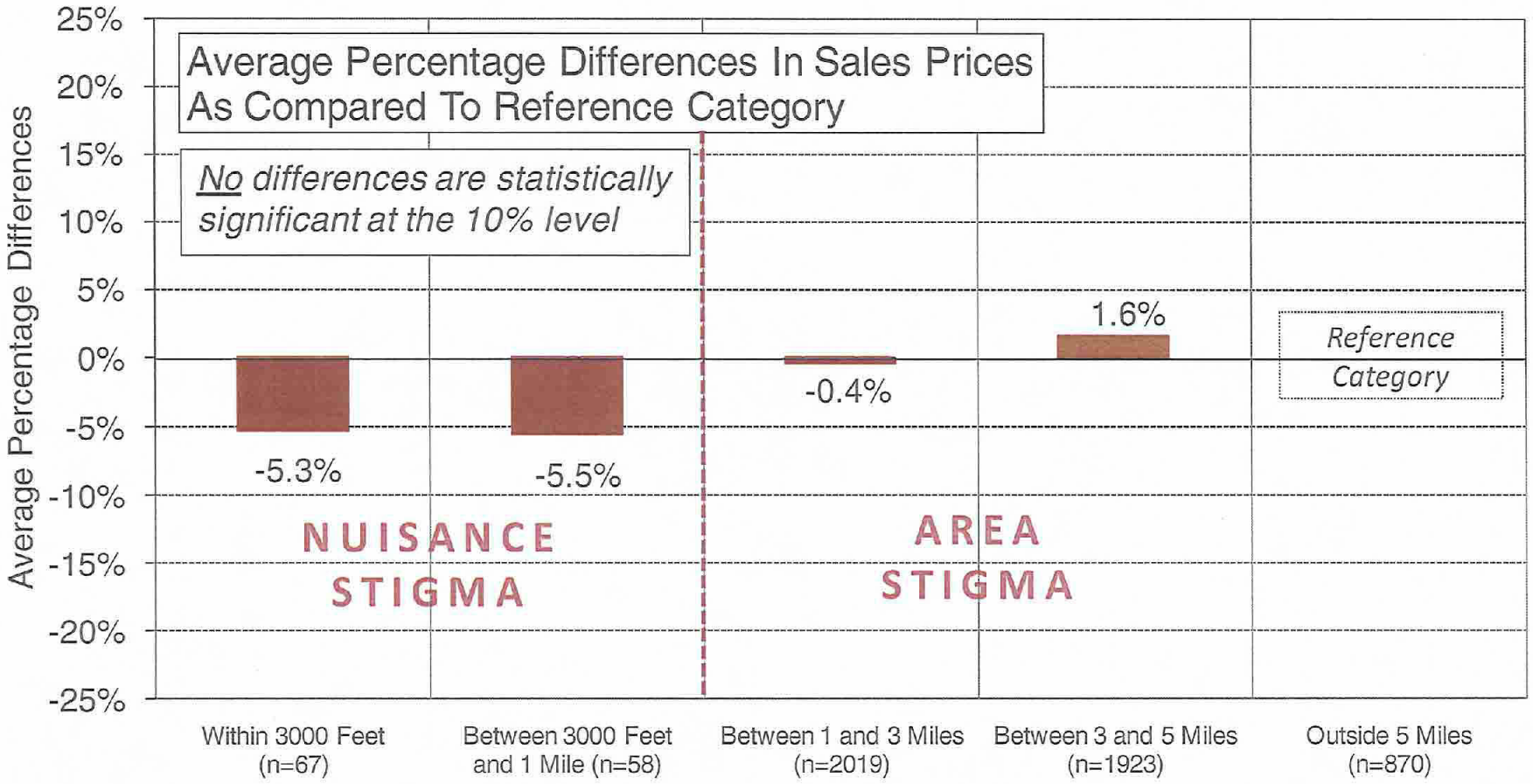
Therefore, based on analysis of 7,459 single family home sales before, during, and after wind farm development in the U.S., the LBNL study concluded that there was **NO IMPACT** from wind farms on the sale prices of these residential properties.

Figure 6
Base Hedonic Model Results
A Lack of Statistical Evidence that Views of Turbines Affect Sales Prices



The reference category consists of transactions for homes without a view of the turbines, and that occured after construction began on the wind facility

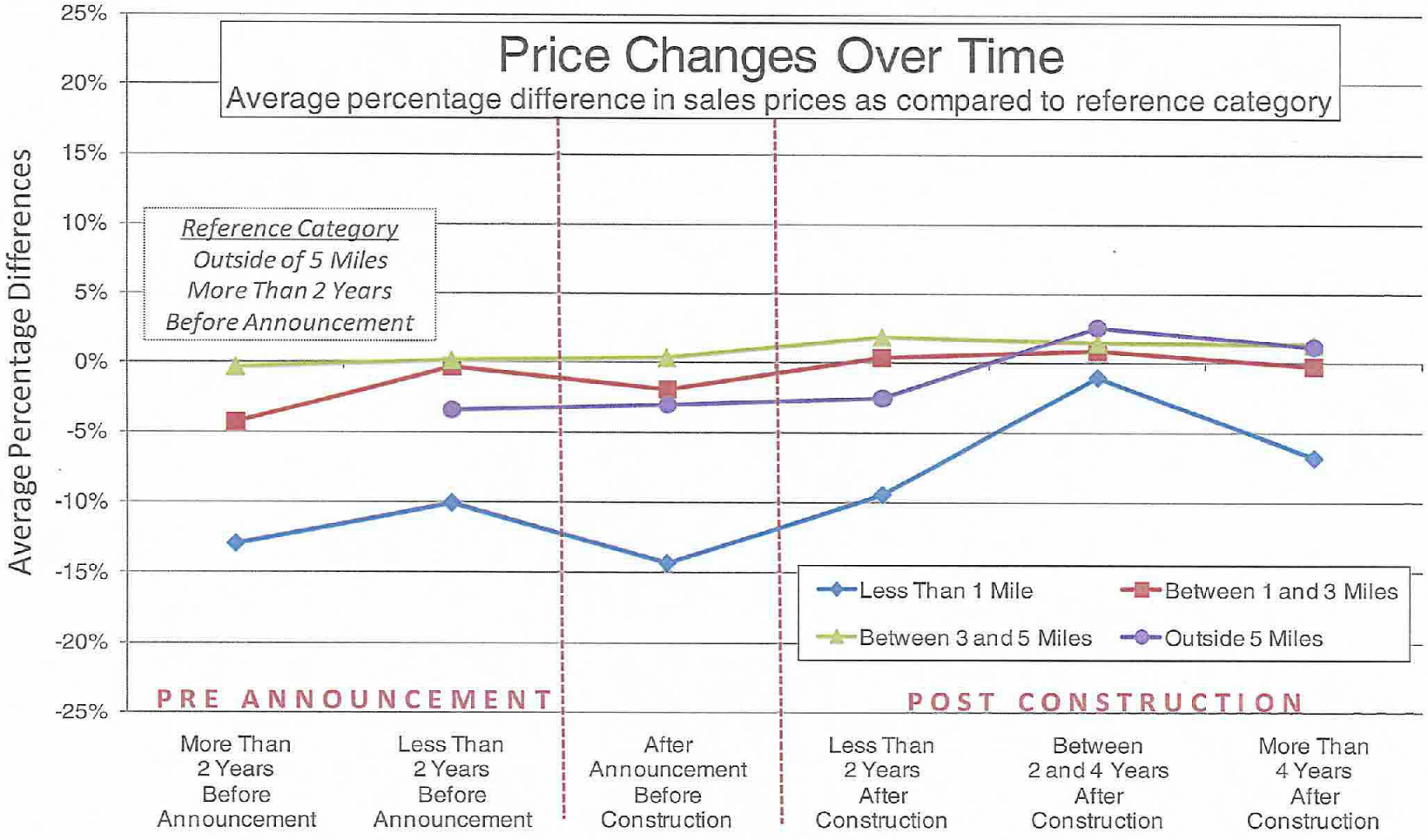
Figure 7
Base Hedonic Model Results
A Lack of Statistical Evidence that the Distance to the Nearest Turbine Affects Sales Prices



The reference category consists of transactions for homes situated more than five miles from the nearest turbine, and that occured after construction began on the wind facility

Figure 8

Temporal Aspects Model Result Homes Nearest the Turbines Were Depressed in Value Before Construction and Appreciated the Most After Construction While Homes Further Away Were Largely Unchanged Over



The reference category consists of transactions of homes situated more than five miles from where the nearest turbine would eventually be located and that occurred more than two years before announcement of the facility

Q.8. Please respond to criticisms leveled through internet.

A.8. The LBNL study was extensively peer reviewed and resulted in both a LBNL monograph and an article in a peer-reviewed academic journal. In addition, there have been several reviewers who have offered criticisms through the internet. In response, the LBNL team did post a formal response to these internet criticisms (see Appendix B).

Q.9. Please briefly summarize the literature subsequent to the publication of the LBNL study.

A.9. In the period from December 2009, the date of the publication of the LBNL monograph, through January 2012 there have been four hedonic property value studies of the impact of wind farms on nearby residential housing values. Hinman (May 2010) examined 3,851 residential property transactions from January 2001 – December 2009 from McLean and Ford Counties, Illinois. This study strongly rejected the hypothesis that wind farm development negatively affected home values post construction. Hinman did find evidence of "anticipation stigma" in the post-announcement, pre-construction phase but this effect disappeared once the wind farms were operational.

The Carter study (Spring 2011) examined 1,298 real estate transactions that occurred in Lee County, Illinois (also one of the LBNL study areas) over the period 1998 – 2010. The analysis indicated that residential property prices in Lee County were not negatively affected by proximity to wind turbines.

The Clarkson study used data on 11,331 property transactions over nine years in Northern New York and found that wind facilities significantly reduce property values in two of the three counties studied. At first blush this result seems inconsistent with the findings of

LBNL, Hinman, and Carter. However, closer examination of Table 1 in the Clarkson study reveals that the authors have little or no property transactions from the post-construction phase. The study examines the period 2000-2009. The startup for the wind farm in Franklin County was 2009 (or after) so in Franklin County the study could have no data from the post-operation period. Similarly, in Clinton county the startup was 2008 or 2009 so again there is little (if any) data possible post-operation. Only in Lewis County is there any possibility of having data post-operation since startup was in 2006. But the authors find "no impact" (actually a positive result) in Lewis County. In fact, the authors suggest that wind farm effects could be short-term in the discussion section. So, to conclude, in counties in which there were no data post-operation the Clarkson authors find an impact – entirely consistent with the findings of "anticipation stigma" in the Hinman study. In the one county (Lewis) in which there was potential post-operation data the Clarkson authors do not find an impact, entirely consistent with the studies by LBNL, Hinman, Carter, and Magnusson and Gittell (the Lempster study), which is the entire hedonic literature on the effect of wind farms on residential property values.

The final study was conducted around the Lempster wind farm in New Hamshire and examined 2,593 property transactions. This January 2012 study found no conclusive evidence of statistically significant impacts of wind turbines on residential property values consistent with area stigma, view stigma, or nuisance stigma. Anticipation stigma was not addressed.

Q.10. Have you reviewed the Application in this proceeding and the October 10, 2012 Staff Report of Investigation.

A.10. Yes.

Q.11. Do you have an opinion as to whether property values will be affected by this Project?

A.11. Yes, based on the LBNL study, which analyzed 7,459 single family home sales before, during, and after wind farm development in the U.S. and the literature subsequent to the LBNL study, my opinion is that there will be **NO IMPACT** from wind farms on the sale prices of residential properties.

Q.12. Does this conclude your direct testimony?

A.12. Yes.

APPENDIX A

MARK THAYER
CURRICULUM VITAE

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mthayer@mail.sdsu.edu

January 2012

EDUCATION

Ph.D., Economics, University of New Mexico, Albuquerque, 1979

Title of Dissertation: "Contingent Valuation Techniques for Environmental Impacts: A Case Study of Geothermal Energy"

TEACHING POSITIONS AND RANKS HELD

Institution	Rank	Dates
San Diego State University	Emeritus Professor	2010-Present
San Diego State University	Department Chair	2009-Present
San Diego State University	Department Chair	1997-2007
San Diego State University	Professor	1985-2010
University of Nevada, Las Vegas	Professor	1991-1993
University of Nevada, Las Vegas	Department Chair	1991-1992
San Diego State University	Department Chair	1989-1991
San Diego State University	Associate Professor	1981-1985
University of Missouri-Rolla	Assistant Professor	1979-1980

OTHER PERTINENT PROFESSIONAL EXPERIENCE

Member, San Diego County Board of Supervisors Science Advisory Board, March 2006 – Present.
Chair, California Board for Energy Efficiency, August 1998 – April 2000.
Member, California Board for Energy Efficiency, April 1997 – April 2000.
Research Associate, Regional Economic Research, 1982 – 1997.
Senior Economist, U.S. Environmental Protection Agency, January 1986 – August 1987.
Visiting Staff Member, Los Alamos Scientific Laboratory, September 1979 – 1983.
Research Associate, University of Wyoming, 1980 – 1984.
Research Associate, University of New Mexico, October 1978 – August 1979.
Research Associate, University of Southern California, September 1977 – August 1978.
Research Assistant, University of New Mexico, September 1974 – September 1977.

PROFESSIONAL GROWTH

Articles in Refereed Journals

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"*The Economic Value of Respiratory and Cardiovascular Hospitalizations*," (with L. Chestnut and S. Van Den Eeden), Report to the California Air Resources Board, May 2003.

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"Space-Time Dependence Relationships in Intra-Metropolitan Air Pollution" (with J. Murdoch and L. Anselin).

"Residential Photovoltaic Energy Systems in California: The Effect on Home Sales Prices," (with B. Hoen, R, Wiser, and P. Cappers), revise and re-submit status at *Contemporary Economic Policy*.

Awards, Grants, Honors

Principal Investigator, Analysis of Alternatives to Increased Electric Generation Capacity in the Union Electric Service Area, Missouri Department of Natural Resources, 1980 ($8,000).

Principal Investigator, Economic Analysis of Wood Biomass Energy Conversion, University of Missouri Weldon Springs Fund, 1980-81 ($8,600).

Principal Investigator, Development of Methods to Estimate the Benefits of Visibility Improvement, California Air Resources Board, September 1982 ($54,783).

Principal Investigator, An Economic Evaluation of Hazard Alerts: A Case Study of the Mammoth Lakes Region, California, United States Geological Survey, 1984 ($47,333).

IPA of the Year, U.S. Environmental Protection Agency, 1987.

Meritorious Performance and Professional Promise Award, San Diego State University, 1988.

Co-Principal Investigator, The Loma Prieta Earthquake: An Event Study of Changes in Risk Perceptions and the Housing Market, National Science Foundation, 1990 ($93,413).

Co-Principal Investigator, Evaluation of the Environmental Impacts of Alternative Energy Resources, California Energy Commission, 1989-1992 ($425,000).

Principal Investigator, An Evaluation of the Establishment of Environmental Cost Values, Minnesota Department of Public Service, 1994-95 ($28,140).

Principal Investigator, The Provision of Water via Water Markets in the San Diego/Tijuana Region, SCERP, 1994-95 ($24,000).

Principal Investigator, An Analysis of Potential Rebound from Environmental Stigmas, The Law and Economics Consulting Group, 1996 ($5,000).

Principal Investigator, Improving Air Quality Benefit Estimates from Hedonic Models, United States Environmental protection Agency/National Science Foundation, 1997-1999 ($124, 931).

Principal Investigator, Improving Visibility Benefit Estimates from Hedonic Models, South Coast Air Quality Management District, 1997-1998 ($18,000).

Principal Investigator, Space-Time Dependence Relationships in Intra-Metropolitan Air Pollution, United States Geological Survey, 2000-2002 ($50,000).

Principal Investigator, The Economic Value of Hospitalizations Associated with Particulate and Ozone Air Pollution, California Air Resources Board, 2000-2001 ($284,080).

Principal Investigator, "The Sensitivity of Concentration-Response Functions to the Explicit Modeling of Space-Time Dependence" (with J. Murdoch and L. Anselin), grant funded by the National Science Foundation ($141,000).

Principal Investigator, "Spatial Dependence in a Model of Hospital Admissions" (with J. Murdoch and L. Anselin), grant funded by the Environmental Protection Agency ($30,000).

Principal Investigator, "Economic Value of Reducing Cardiovascular Disease Associated with Air Pollution," grant funded by the California Air Resources Board, 2008-2010, ($392,600).

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"Experimental Methods for Valuing Aesthetics and Health Effects in the South Coast Air Basin: An Overview" (with D. Brookshire et al.), presented at the Air Pollution Control Association Annual Meetings, Cincinnati, Ohio, June 1979.

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"Hedonic Prices for Visibility in California's South Coast Air Basin" (with J, Murdoch), presented at Jackson, Wyoming, September 1986.

"Variable Air Pollution and Acute Health Effects" (with J. Murdoch and B. Weirick), presented at Western Economic Association Meetings, Vancouver, British Columbia, 1987.

"A Methodology for Integrating Air Quality Impacts into Energy Resource Planning" (with F. Sebold), presented at the (1) Advanced Workshop in Regulation and Public Utility Economics, San Diego, CA. 1990; (2) Demand Side Management and the Global Environment, Washington DC, 1991.

"Valuing the Externalities Associated with Electric Generation" (with F. Sebold, J. Murdoch, T. Tanton, T. Mayer), presented at the Western Economic Association, San Francisco, July 1992.

"A Methodology for Valuing Externalities" (with F. Sebold and J. Murdoch), presented at the Western Economic Association, San Francisco, July 1992.

"A Methodology for Determining the Value of the Air Quality Impacts of Electricity Generation," Public Utility Research and Training Institute Seminar, Laramie, Wyoming, June 1993. Also presented at New Mexico State University Conference, Santa Fe, New Mexico, April 1993.

"Water Provision and Markets in the San Diego/Tijuana Region," presented at the SCERP Technical Conference, San Diego, CA, March 1995.

"Hedonic Price Functions and Spatial Dependence: Implications for the Demand for Urban Air Quality," presented at the Spatial Econometric Society Annual Meeting, November 1998.

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"Capitalization and the Voucher," (with E. Brunner and J. Sonstelie), National Tax Association Meetings, October 1999.

"Capitalization and the Voucher," (with E. Brunner and J. Sonstelie), Southern Economic Association Meetings, November 1999.

"The Benefits of Visibility Improvement: New Evidence from the Los Angeles Metropolitan Area," (with K. Beron and J. Murdoch), CESIR Seminar Series, Stanford University, April 2000.

"Who Benefits from Environmental Policy? An Assessment Based on Housing Values in Southern California, 1977-2000," Association of Public Policy and Management Conference, November 2002.

"Tools for the Exploration of Space-Time Patterns in Concentration-Response Models," ASSA Conference, January 2003.

"The Economic Value of Respiratory and Cardiovascular Hospitalizations," California Air Resources Board Chairman's Air Pollution Seminar Series, May 2003.

"Results from a Nationwide Study of Property Values near Windfarms: What Next?" The American Wind Energy Association (AWEA) Windpower 2010 Conference and Exhibition, May 23-26, 2010, Dallas, Texas. Session: Wind Power Development - Permitting and Policy.

"A Multi-site Hedonic Analysis of Residential Property Value Impacts Surrounding Wind Power Projects in the US." The American Real Estate Society Annual Meeting, April 14 – 17, 2010, Naples FL. Session 5: Negative Amenity.

"Do Photovoltaic Energy Systems Effect Residential Selling Prices? Results from a California Statewide Investigation." Solar Power International, October 17 – 20, 2011. Dallas, Texas. Session: Financing Residential Systems.

Other Professional Growth

Project Consultant, U.S. Environmental Protection Agency, 1975-88.
Project Consultant, California Air Resources Board, 1983-84.
Project Consultant, Regional Economic Research, 1982-2002.
Project Consultant, Santa Fe Research Corporation, 1982-Present.
Project Consultant, Environmental Law Institute, 1987-88.
Project Consultant, U.S. Geological Survey, 1982-87.
Project Consultant, National Science Foundation, 1990-91.
Prepared and offered testimony for a case involving the Heber Geothermal Plant, Public Utilities Commission, 1983.
Prepared and offered testimony for case involving production and sale of counterfeit goods for Federal Defenders, Federal Court, September 1990.
Prepared and offered testimony on the issue of including environmental values in energy resource planning, California Energy Commission, 1991-94.
Prepared and offered testimony on the issue of including environmental values in energy resource planning, Minnesota Public Utilities Commission, 1995.
Prepared and offered expert testimony in cases concerning value of injury and/or premature death, 1990-Present.
Prepared and offered expert testimony in cases concerning survey and hedonic analysis of property value impacts associated with proximity to known hazards, both natural and man-made, 1993-95, 2009.
Associate Editor, *Journal of Environmental Economics and Management*, 1990-91.

Reviewer for *Journal of Environmental Economics and Management*, *Land Economics*, *Water Resources Research*, *Contemporary Policy Issues*, *American Economic Review*, United States Geological Survey, United States Environmental Protection Agency (Socioeconomics Review Panel and the Office of Policy, Planning, and Evaluation), United States Environmental Protection Agency/National Science Foundation, *Journal of Developing Areas*.

APPENDIX B

Response to Industrial Wind Action Group Critiques

Ryan Wiser, Ben Hoen, Peter Cappers, Mark Thayer, Gautam Sethi

December 2, 2009

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Introduction

On November 20, 2009, the Industrial Wind Action Group (IWAG) posted an editorial that, in part, lists a number of concerns about Berkeley Lab's efforts to investigate the presence of residential property value impacts associated with U.S. wind power facilities.[1] That editorial follows from more-extensive review comments provided on September 11, 2009 by the Industrial Wind Action Group.[2] The more extensive comments were provided during the external review of the draft Berkeley Lab report, and were one of roughly 20 sets of external review comments received by stakeholders and experts at that time. All of these comments were considered during revisions to the draft report, culminating in the final analysis and report issued on December 2, 2009.

Though the final Berkeley Lab study largely speaks for itself, this memorandum offers a brief response to the specific comments enumerated in the September 11th review letter by the IWAG, some of which were also mentioned in the November 20th letter.[3] Before responding to the specific comments offered in either critique, however, one important observation should be made: the Berkeley Lab report does not offer definitive proof that wind projects, under all circumstances, will never impact residential property values. Therefore, as the IWAG correctly claims, the results of this work should not be summarized as such. Rather, the Berkeley Lab work, as discussed extensively in the final report, finds no persuasive evidence of any consistent, measurable, and statistically significant effect given the sample of home sales transactions evaluated. As noted on several occasions in the report, although the analysis cannot dismiss the possibility that individual homes or small numbers of homes have been or could be negatively impacted, the extensive research finds that, if these impacts do exist, they are either too small and/or too infrequent to result in any widespread, statistically observable impact within the sample of nearly 7,500 home sales transactions evaluated.

IWAG Comment: Regression analysis is not in accordance with the International Association of Assessing Officers' (IAAO) established methods

The IWAG claims that the methods employed by the Berkeley Lab study are not in accordance with the established methods of the International Association of Assessing Officers (IAAO), potentially rendering the results of the study meaningless.

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[1] "False conclusions based on flawed real estate studies," http://www.windaction.org/faqs/24176.

[2] "Hedonic analysis of the impact of wind power projects on residential property values in the United States," http://www.windaction.org/documents/24178.

[3] 3 The editorial posted on November 20th makes a number of additional claims, suggesting that the authors of the study
were predisposed to a preferred outcome, had no interest in conducting a legitimate study, and had no interest in releasing a final report. These claims are baseless, and are therefore not addressed here.

Response: The methods of the IAAO are irrelevant for estimating a hedonic pricing model of the nature used in the Berkeley Lab report.
As noted in the final report, neither hedonic pricing models nor the Berkeley Lab research is designed to assess or appraise properties (i.e., to establish an estimate of the market value of a home at a specified point in time, which is the context in which the IAAO standards are applicable). Rather, hedonic models are designed to estimate the marginal contribution of individual house or community characteristics to sales prices, which requires hedonic models to rely upon large data sets with a sizable number of explanatory variables. On the other hand, appraisal models (e.g., automated valuation models) in general are based on small, localized data sets (i.e., "comps") and a limited number of explanatory variables that pertain to nearby properties. Hedonic models can also be used as appraisal models due to their use of significantly more information (e.g., diverse spatial, temporal, and characteristic information) and rigorous methodology. Automated valuation models cannot, however, be reliably used to measure marginal effects because they do not employ sufficient information to do so, and, more importantly, they do not rigorously hold controlling characteristics constant, which would bias any resulting estimates of marginal effects.

As discussed in Section 2.1 of the final report, the hedonic pricing method is well established and widely used in the economics and real estate literature for evaluating the marginal impacts of environmental amenities and disamenities on housing prices. Standards relevant for estimating a hedonic function have been developed through an extensive literature that began with the seminal works of Rosen (1974) and Freeman (1979). The Berkeley Lab report clearly documents the history and use of the hedonic pricing model, its appropriateness for exploring the possible impact of wind projects on property values, and how the multiple statistical models employed in the Berkeley Lab research relate to the broader economics and
real estate literature.

IWAG Comment: Study neglects to explain the risks of employing Hedonic analysis
The IWAG claims that the study neglects to explain the risks of employing hedonic analysis, that causal conclusions drawn about a dataset when utilizing hedonic analysis are often unsupportable, and that the literature is highly critical or even dismissive of the hedonic method. Further, the IWAG notes that, "a major limitation of observational data is that they often do not provide adequate information about cause-and-effect relationships" (i.e., correlation does not necessarily imply causation).

Response: The final report offers a review of the hedonic literature, and provides a number of citations to which a reader can go for a more extensive review of the history and use of this method. As discussed in the report, though all methods have limitations, the hedonic pricing method is well established. The literature is neither "highly critical" nor "dismissive" of the method; if anything, the opposite is true.[4] Moreover, as discussed in the Berkeley Lab report, there is an extensive literature that has steadily improved the method, and the method is regularly used by both economics and real estate experts to evaluate the marginal impacts of

[4] For example, see Jackson (2003; 2005) for a discussion of the various methods available for estimating the impact of
environmental disamenities and their strengths and weaknesses.

environmental amenities and disamenities on housing prices. The hedonic method is the most appropriate approach to evaluate the question at hand: whether wind energy facilities have any demonstrable and widespread effect on home prices.

Moreover, the study employs not one, but eight different hedonic models, as well as both repeat sales and sales volume models, all of which provide tests for the robustness of the results. The consistency of the results of these various analyses provides confidence in the final results discussed in the report and, in combination with the extensive data collection effort, produces the most comprehensive and data-rich analysis to date in the U.S. or abroad on the possible impacts of wind projects on property values.

The IWAG is correct that hedonic analysis focuses on correlations, and that correlation does not necessarily imply causation. At the same time, the Berkeley Lab analysis finds no correlation between wind facilities and home sales prices. Because of this finding, and because of the care taken by Berkeley Lab in the measurement of the variables of interest, the difference between correlation and causation is moot: with no correlation there can be no causation.

IWAG Comment: Background review of other studies was not thorough
The IWAG notes that much of the previous work that has investigated the potential impact of wind projects on property values has limitations, rendering the results of some of this literature misleading or invalid.

Response: The Berkeley Lab report authors agree that there are a number of limitations to the previous work, a point made clearly in Section 2.2 of the final report. Specifically, a large number of the previous studies investigating property value effects surrounding wind facilities have not been peer reviewed, and suffer from a variety of substantive limitations (e.g., lack of reliance on market data, small sample sizes, overly simplistic statistical techniques, and unreported statistical significance). As discussed extensively in the report, the methods applied by Berkeley Lab were specifically intended to overcome many of the limitations of this previous literature. As a result, the Berkeley Lab research is the most reliable, comprehensive, and data-rich analysis to date on the possible impacts of wind projects on property values.

IWAG Comment: No clear evidence the data used was checked for accuracy
The IWAG argues that there is no evidence that the data used in the model were checked for accuracy, and that non-valid sales transactions (i.e., "dirty sales") might have been included in the final data set.

Response: As noted in the final report in Section 3.2.1, only "valid" sales are included in the dataset; as discussed, the validity of those transactions is determined as follows:

> *"Validity was determined by each individual county data provider. A sale that is considered "valid" for county purposes would normally meet the minimum requirements of being arm's length; being a transfer of all rights and warrants associated with the real estate; containing an insignificant amount of personal property so as not to affect the price; demonstrating that neither party in the sale acting under duress or coercion; not*

being the result of a liquidation of assets or any other auction, a mortgage foreclosure, a tax sale, or a quit claim; and being appropriate for use in calculating the sales price to assessed value ratios that are reported to the state. Due to the formal requirements associated with this calculation, "validity" is often defined by a state's Department of Revenue..."

Though the study therefore relies, to some degree, on individual county-level data providers to help ensure the validity of the resulting sales data, it is highly unlikely that the many kinds of sales of concern to the IWAG are included in the final data set. Moreover, to provide greater certainty to that finding, the authors also excluded transactions that had certain characteristics that might place them in doubt (e.g., transactions that occurred within six months of a previous sale of the same home, and transactions that produced a statistical residual greater than six standard deviations from the mean of all residuals)[5]. In addition, tests were conducted to evaluate whether certain additional transactions that might be classified as outliers and/or influencers (i.e., dirty sales) might be inappropriately influencing the results. A thorough inspection of this group of outliers and/or influencers was conducted to help ensure that the dataset met the requirements for a hedonic model and that the results are not inappropriately influenced by suspect data. These procedures are documented clearly in the final report in Appendix G.

IWAG Comment: No information in the study confirms whether the model was tested or calibrated using actual sales data

The IWAG claims that, according to IAAO, when a model is specified an iterative process of calibrating the model using data sets is necessary to test and fine tune the model's coefficients. The IWAG also notes that thousands of possible models can be applied in a given situation, and argues that the authors should explain what process was followed in the Berkeley Lab analysis.

Response: As stated above, the IAAO standards are not relevant for the hedonic pricing models used in the Berkeley Lab research: the research is not designed to appraise properties.

The research does, however, follow typical research protocols for estimating and interpreting a hedonic price function. As noted clearly and repeatedly in the body of the report and in the appendices, a variety of hedonic models were tested, from which the final models were selected. The process of selecting the final eight hedonic models is discussed throughout the document, and the results of alternative model specifications are discussed in a number of footnotes and in the appendices. The performance of the final models are reported (e.g., adjusted R2 and other statistics), and are consistent with hedonic analyses conducted by others. Moreover, the results are benchmarked to the broader hedonic literature as discussed in the following passage from Section 4.3:

[5] The rationale for these restrictions is provided in the full Berkeley Lab report. As noted in Section 3.2.1, these excluded transactions total 39, 32 of which occurred following construction, two were for homes that had a view of the turbines (both minor), and one was for a home located inside of one mile. Although the sale that involved a home located inside of one mile was removed, a number of other homes from the same neighborhood, also inside of one mile, were included in the final dataset.

"To benchmark the results against those of other practitioners the research by Sirmans et al. (2005a; 2005b) was consulted. They conducted a meta-analysis of 64 hedonic studies carried out in multiple locations in the U.S. during multiple time periods, and investigated the coefficients of ten commonly used characteristics, seven of which were included in the model. The similarities between their mean coefficients (i.e., the average across all 64 studies) and those estimated in the present Base Model are striking."

The report then compares each coefficient in the base hedonic model to those in Sirmans et al. and finds, in conclusion,

"As a group, the Base Model estimates differ from Sirmans et al. estimates in all cases by no more than a third of the Sirmans et al. mean estimate's standard deviation. This, taken with the relatively high adjusted R2 of the...model [0.77], demonstrates the appropriateness of the model's specification."

IWAG Comment: The data set is not homogeneous; data is drawn from across the country
The IWAG claims that lack of homogeneity in the final data set is fundamentally problematic, and argues that a basic assumption of a regression analysis is that the data are reasonably homogenous (i.e., that the homes included in the dataset are reasonably similar in characteristics, amenities, etc.). The IWAG also argues that applying the same weight to property characteristics (e.g., fireplaces) across the entire nine-state region is inappropriate. Finally, the IWAG claims that the model does not allow one to understand how the age of the home impacts sales prices or, for that matter, square footage, number of baths, etc.

Response: Overall, the IWAG concerns encompass three different themes: (1) the data are pooled from different study areas across the country, (2) individual home characteristics have a significant amount of variation (e.g., price of homes and the age of homes), and (3) the estimated coefficients are not allowed to vary across study areas but rather are estimated across the entire dataset. Each concern is addressed in turn.

- Data are pooled from different study areas across the country: As discussed in detail in the Appendix F, models specific to individual study areas were extensively tested and evaluated. These models, however, were found to be less parsimonious than the final models and exhibited divergent and spurious coefficients, as well as large standard errors, for the variables of interest, presumably because of the small number of home sales in each of the individual study areas near the wind turbines. As a result of this extensive analysis, a pooled model is used. The details of this process and the rationale for selecting a pooled model are clearly documented in the final report.

- Individual variables have a significant amount of variation: Though the IWAG argues that homogeneity in the dataset is a prerequisite for a regression analysis, the very purpose of a hedonic model is to control for heterogeneity in the data to evaluate the marginal impact of varying house characteristics. In general, then, variation in housing characteristics within the data set is valuable as long as the variation in the independent variables explains the variation in the dependent variable, and there are no omitted variable biases. The relatively high adjusted R2 (~ 0.77) found in the Berkeley Lab study

- which is a cross-sectional property value analysis - substantiates the appropriateness of the data and model used. Further, as discussed in the report and above, coefficient estimates for a variety of property characteristics are consistent with those of other practitioners using similar methods. Finally, as discussed above and in Appendix G in the report, extensive testing regarding the impact of outliers and influential observations is conducted, ensuring that individual questionable sales transactions are not unduly influencing the results of the study.

- The estimated coefficients are not allowed to vary across study areas: As addressed in the first bullet above (and in Appendix F in the report), alternative hedonic models were tested in which all variables were interacted with dummy variables for the individual study areas; in these models, the value of a fireplace in one study area, for example, is allowed to differ from the value in other study areas. Appendix F clearly reports how the final models were selected from multiple alternative specifications. Importantly, the focus variables, namely the effect of proximity and views of wind facilities, are robust to the inclusion/exclusion of these interactions. As such, including these interactions in the model does not impact the results of the Berkeley Lab analysis.

With respect to understanding how the age of the home impacts sales prices or, for that matter, square footage, number of baths, etc., this information is clearly provided in the regression results presented in Section 4.2 (for the base model) and in Appendix H (for the other models).

IWAG Comment: The data set omits property characteristics
The IWAG claims that a variety of important property characteristics were omitted from the analysis, noting specifically the omission of the number of bedrooms.

Response: The protocols for estimating a hedonic price function, as discussed in Appendix G, are clear: including too many independent variables that measure the same basic thing (e.g., square footage of living area and total rooms) can produce harmful collinearity in a regression model. The accepted method for hedonic analysis is therefore not to include all possible independent variables, but to instead specify a relatively parsimonious model that contains key variables that represent the various aspects of a home (e.g., size as measured by square footage; quality as measured by condition and the number of specialty items such as fireplaces, bathrooms, etc.; neighborhood influences such as school quality, etc.) and then to test whether the inclusion/exclusion of specific independent variables significantly impacts the coefficients of the focus variables. This was the protocol used in this study, as discussed in Appendix F and G, and is entirely consistent with the broader hedonic literature. The results for the focus variables are found to be robust to the inclusion/exclusion of various potential sets of independent variables (including the number of bedrooms).[6]

IWAG Comment: Model is not peer-reviewed; data withheld from independent reviewers

[6] This comment also suggests that an adjusted R2 value of 0.77 is "not good enough" according to IAAO implying that the characteristics were inappropriately chosen. But, as addressed earlier in this memo, the standards/methods of the IAAO are irrelevant to the research task, and the relatively high adjusted R2 (~ 0.77) found in the Berkeley Lab analysis - as compared to other cross-sectional analyses - substantiates the appropriateness of the variables used.

The IWAG claims that the Berkeley Lab report was not "peer reviewed" because the authors "refused to release the data set to reviewers."

Response: Berkeley Lab conducted a thorough external review of the draft report, responded to follow-up inquiries upon request, and provided a full set of results with the draft report, all of which are customary for this type of report. The comments received during that process from roughly 20 external reviewers made up of experts and stakeholders were considered in the preparation of the final report. Moreover, the authors plan to submit a shortened version of the report for consideration in a peer-reviewed academic journal. At that time, the authors hope to be able to release the dataset used in the analysis so that others can further verify the results. A number of confidentiality arrangements were required to obtain the data used in this report from the individual study areas, however, and those arrangements will need to be revisited and potentially re-negotiated before the final data set can be made available.

Conclusion

Although the IWAG's concerns are extensive, the majority of those concerns are not consistent with the extensive literature on the hedonic pricing method and its use in investigating the possible impact of amenities and disamenities on property values. Moreover, as discussed above, the authors believe that any relevant concerns expressed by the IWAG are already adequately addressed in the final report. The hedonic pricing model, as used in this study, is the appropriate method to address the question of whether views of and proximity to wind facilities affect residential sales prices. Further, many of the limitations of the previous literature (e.g., small sample size, unreported statistical significance) are directly addressed by the Berkeley Lab analysis. The efforts made to benchmark the results to other literature and to test the robustness of the report's findings further substantiate the approach and results of the research. Therefore, although all analysis has limitations and additional research is warranted, the authors maintain that the Berkeley Lab work is the most reliable, comprehensive, and data-rich research effort to date in the U.S. or abroad on the possible impacts of wind projects on property values.

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Sirmans, G. S., Macpherson, D. A. and Zietz, E. N. (2005b) The Composition of Hedonic Pricing Models. *Journal of Real Estate Literature.* 13(1): 3-42.

CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing document was served upon the following parties of record via e-mail on this 19th day of October, 2012.

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Color Copy of Exhibit 5

to the Direct Testimony of Michael Speerschneider

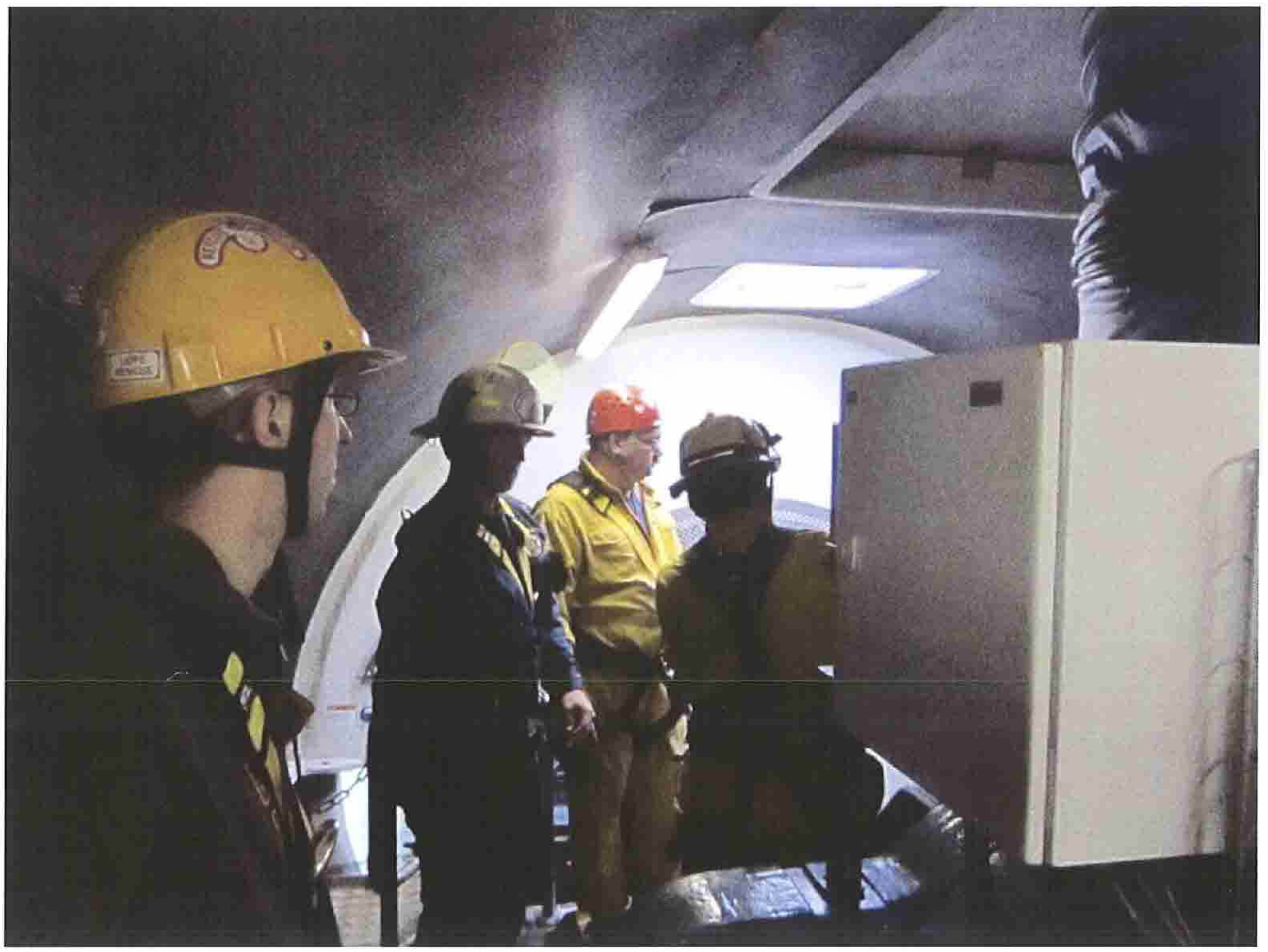
Case No. 12-0160-EL-BGN

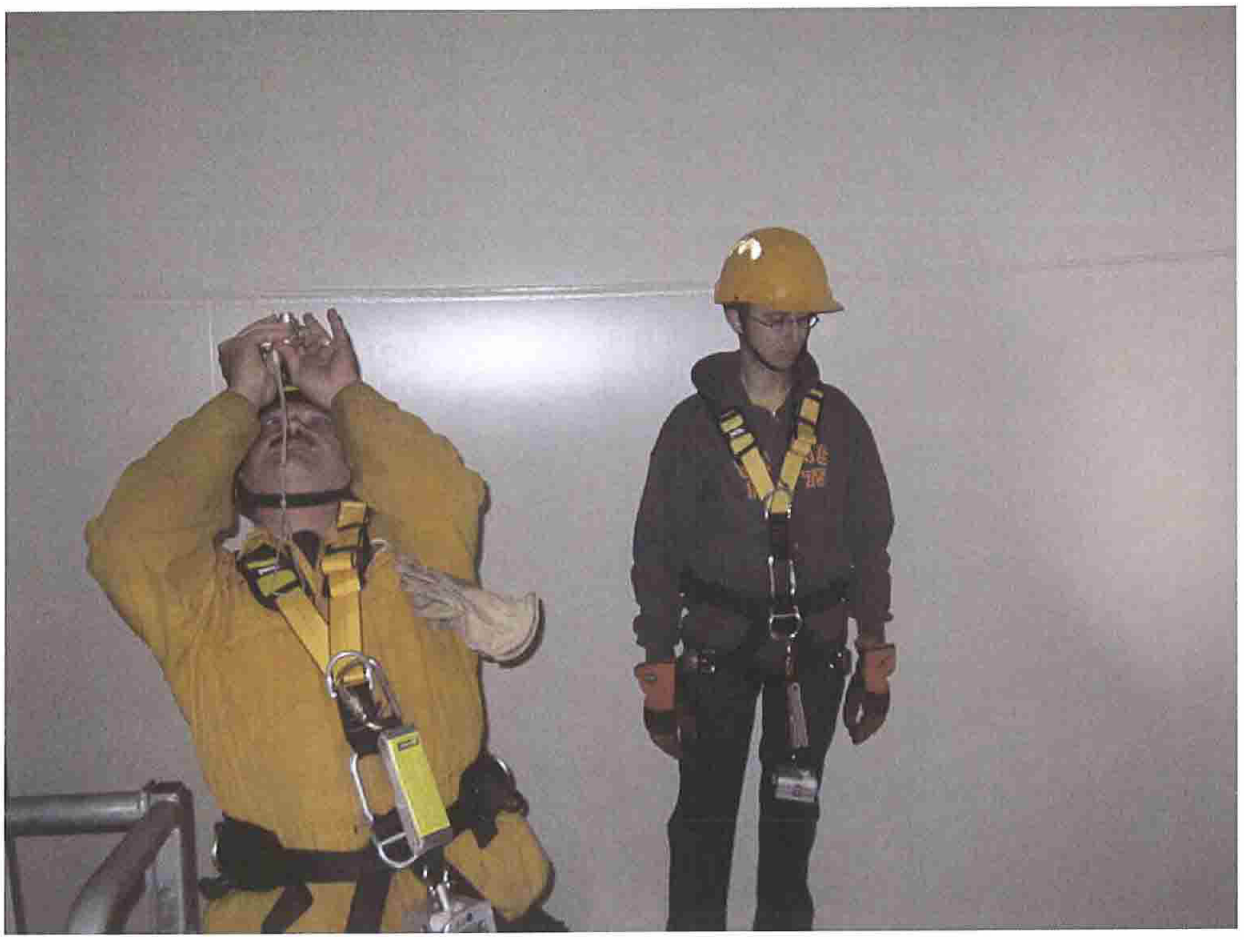
EXHIBIT
tabbies
Company Ex.5

Tower Rescue Drill Summary 09-29-12

Up tower Personnel:	Down tower Personnel:
John Nichols (Everpower) Lucas Soren (REpower) Buster the Dummy (victim) 4-HAR team Members	Steve Sick (Everpower) Kevin Wigell (Everpower) Rob Patrick (Howard Fire) 27 Members of the local emergency services organizations

Everpower met with the Bath High Angle Rescue team on September 15th to go over a tower familiarization and perform a site tour. There were 33 participants from 7 different local service agencies attend this first meeting. We then took the Bath HAR team uptower for a tour of the tower and nacelle to help with their training.



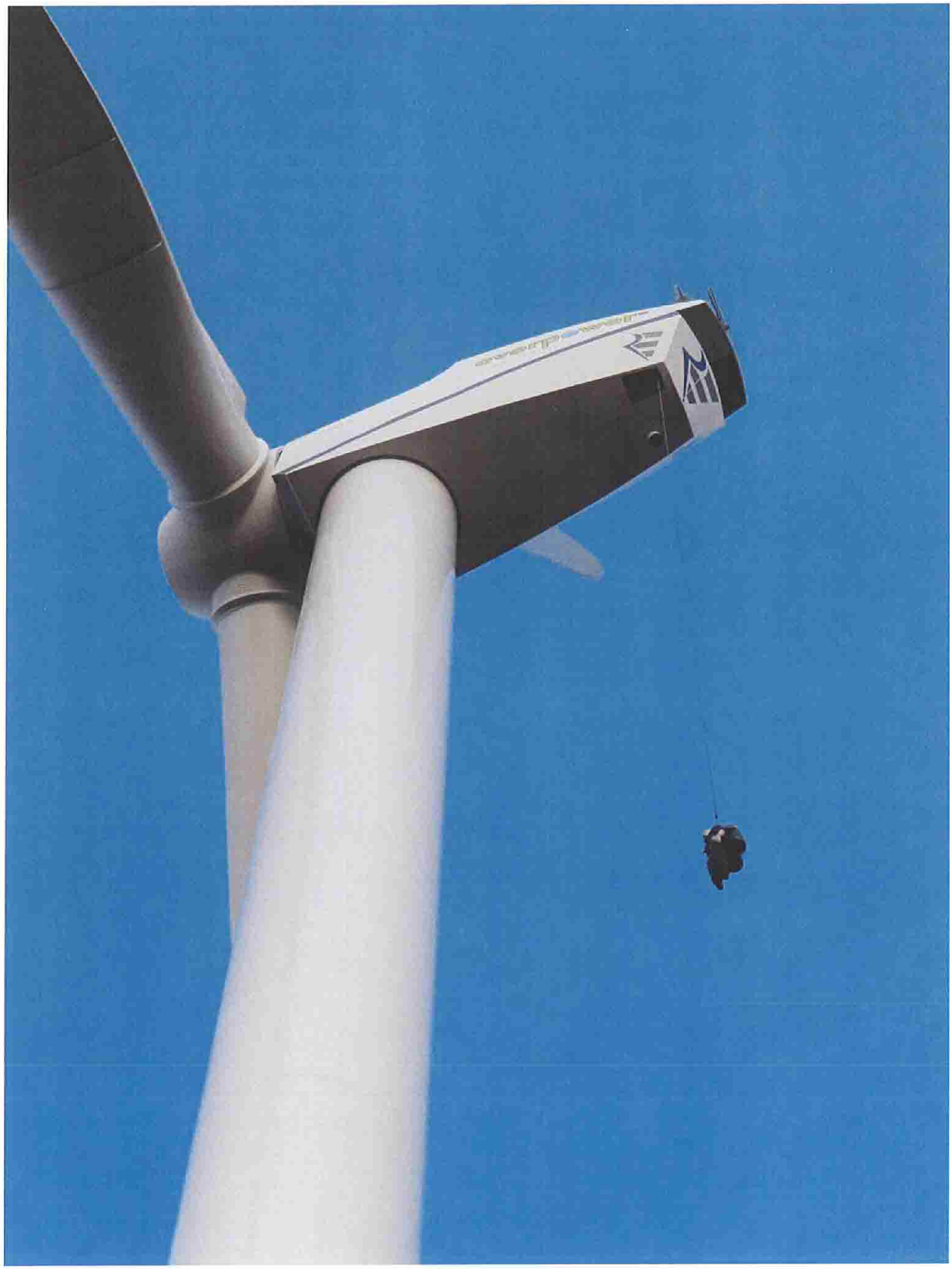


Everpower went over the basic safety procedures of the wind turbine with the HAR team members and discussed tie off points to be used during the drill. The HAR team members took photographs of the nacelle to review a rigging procedure with their team.

September 29th

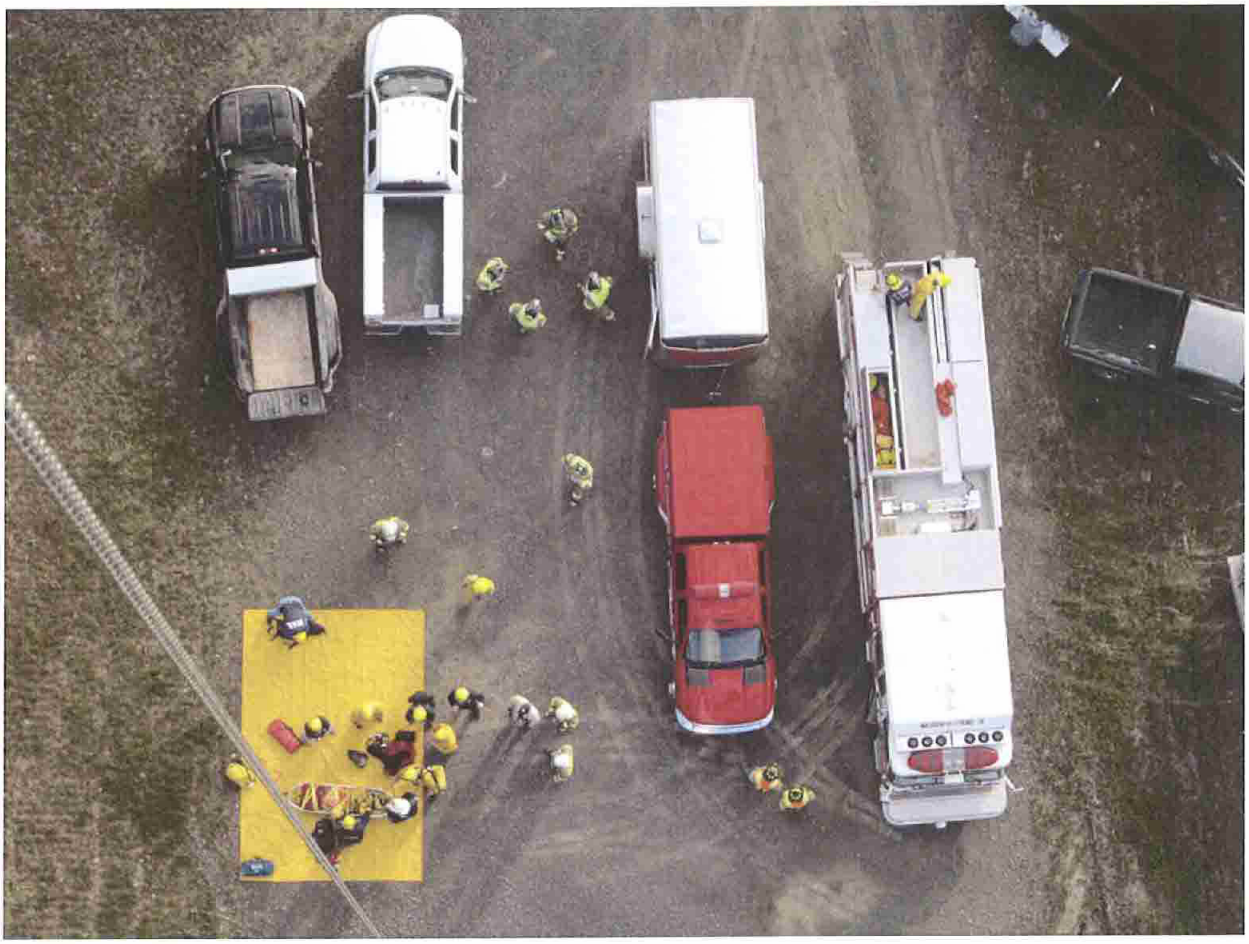
Everpower met with REpower Personnel at WTG 22 at 0700. JN and LS went up the tower, they then utilized the uptower crane to place the rescue dummy (victim) in the nacelle. SS and KW stayed on the ground to escort the HAR team members to the top of the WTG with the service lift.

At 08:19 John Nichols made the 911 call stating that he was an employee at the Howard Wind Farm and we have an employee with a back injury at the top of WTG 22. The 911 operator took some information from John and they got off the phone. Emergency vehicles arrived onsite at 08:34.



The initial on scene personnel set up a command center at the tower base and also set up a landing area for the LifeNet rescue chopper.

The rescue equipment was set up by the Bath HAR team. Our up tower personnel began lowering the chain hoist down to the ground personnel. The equipment was loaded onto the chain hoist and raised to the nacelle.

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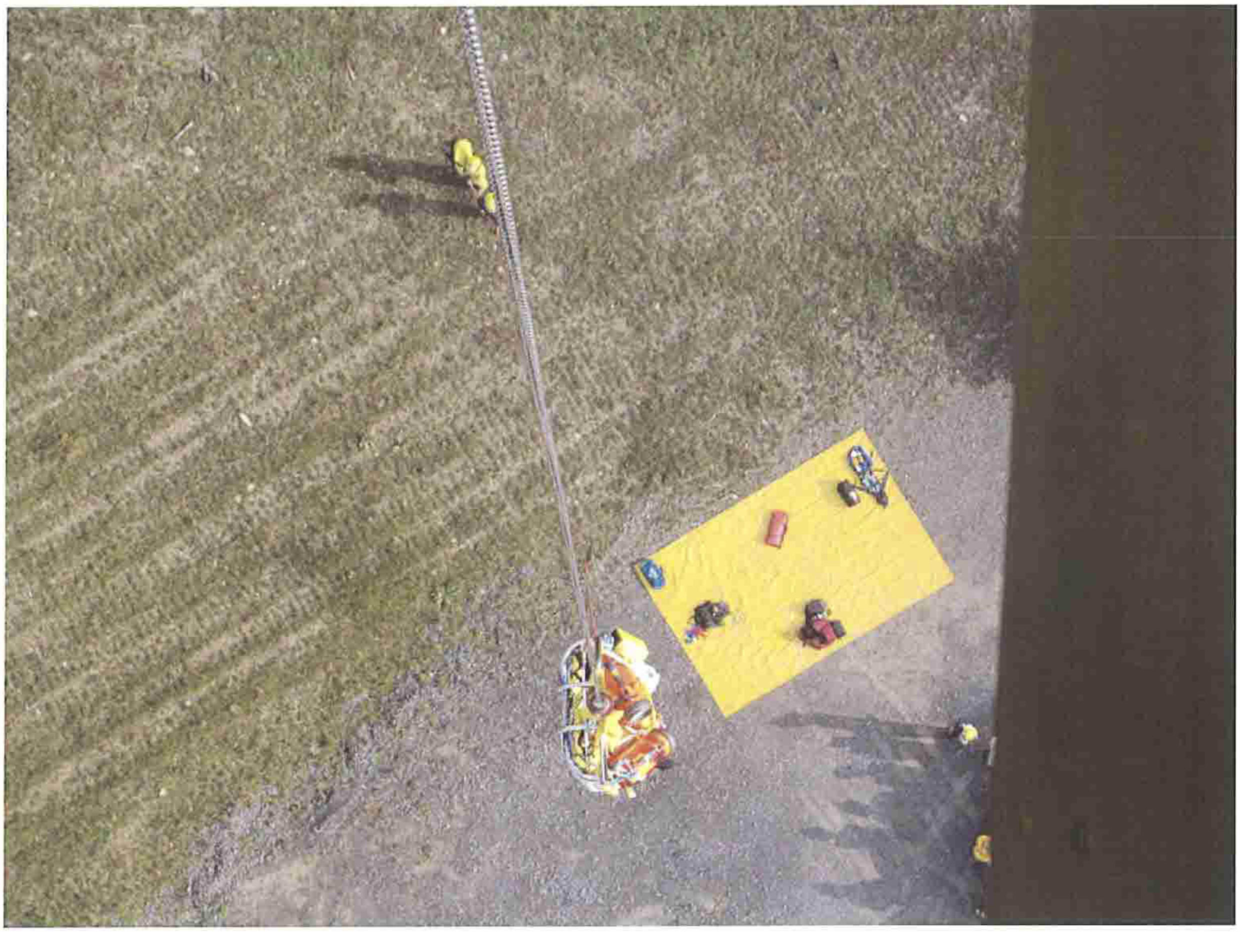

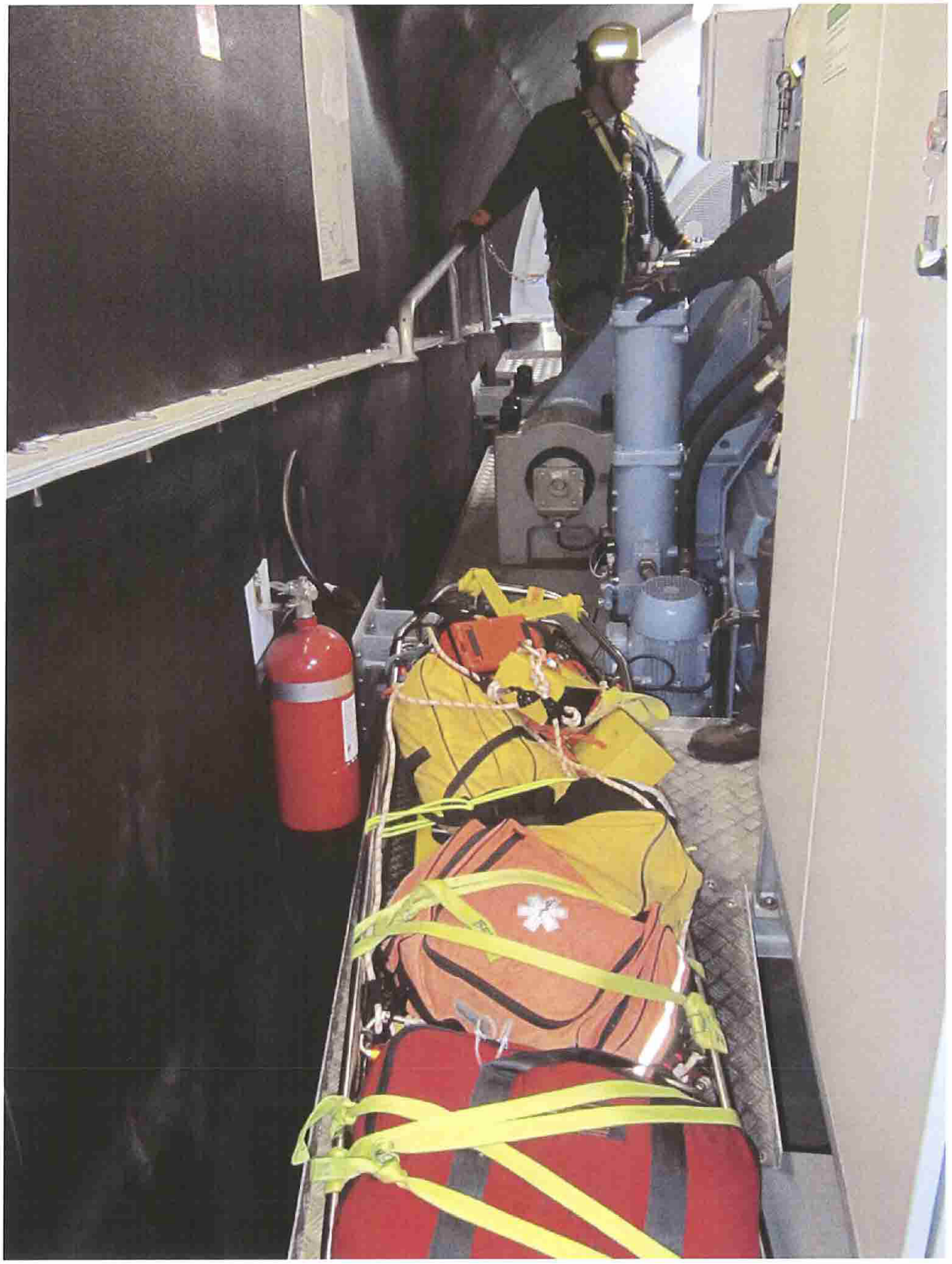

Over the next two hours the rigging was set up and the dummy was secured to the stretcher.

The stretcher was lowered from the back of the Nacelle and lowered with the HAR team's equipment. Time at this point was 11:01 hours, (2 hours and 42 minutes after initial call).

The dummy was removed from the stretcher and the rigging was lowered back down with the chain hoist.

Organizations represented:
Everpower (Howard Wind LLC)
REpower
Howard Fire Dept
Bath High Angle Rescue team
Bath VA Fire Dept.
Canisteo Fire Dept.
LifeNet 7-7
Steuben County 911

An October critique meeting is planned to review the rescue drill and cover any issues or concerns that became apparent during the drill.

Summary: Motion for Leave to File Instanter Color Versions of the Testimony of Mark Thayer and Michael Speerschneider electronically filed by Mrs. Gretchen L. Petrucci on behalf of Champaign Wind LLC