

NOBLE WETHERSFIELD WINDPARK, LLC

Direct Testimony

230 kV TRANSMISSION LINE

WETHERSFIELD TO ORANGEVILLE

STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

Case 07-T-____ - Application of Noble Wethersfield
Windpark, LLC for a Certificate of
Environmental Compatibility and
Public Need for the Construction
And Operation of the Wethersfield
to Orangeville 230 kV Transmission
Project Pursuant to Article VII of the
Public Service Law

DIRECT TESTIMONY OF

PANEL: CHARLES R. READLING/MICHAEL E. GUSKI

ON BEHALF OF

NOBLE WETHERSFIELD WINDPARK, LLC

Dated: January 19, 2007

CRR/MEG

TESTIMONY OF PANEL:
CHARLES R. READLING/MICHAEL E. GUSKI

1 Q. Please state your name, title and business address.

2 A. **Charles R. Readling, Noble Environmental Power, LLC, 7294 Centerville**
3 **Road, Bliss, New York.**

4 Q. Please summarize your educational and professional background.

5 A. **I am the Director of Development at Noble. I have an associates degree in**
6 **science/engineering, a B.A. in business management from North Carolina**
7 **State University and an MBA from the Fuqua School of Business at Duke**
8 **University. At Noble, I am responsible for the development and operation of**
9 **wind energy electric facilities in western New York State. Prior to joining**
10 **Noble, I had ten years experience in the telecommunications equipment and**
11 **information technology industries.**

12 Q. Does your curriculum vitae fairly and accurately describe your experience?

13 A. **Yes. It is attached to the prefiled testimony.**

14 Q. What was your role in the 230 kV Wethersfield to Orangeville transmission line
15 project?

16 A. **I am the project manager for Noble Wethersfield, LLC's proposed**
17 **Wethersfield to Orangeville 230 kV transmission project, as well as the**
18 **proposed 127.5 MW Noble Wethersfield Windpark. Noble retained Epsilon**
19 **Associates, Inc. to assist in analysis of the proposed project and subsequently**
20 **to assist in the preparation of the materials necessary for a New York State**
21 **Public Service Law Article VII filing for a Certificate of Environmental**
22 **Compatibility and Public Need ("Certificate") with respect to Noble's**

TESTIMONY OF PANEL:
CHARLES R. READLING/MICHAEL E. GUSKI

1 **proposed major utility transmission facility in the towns of Wethersfield and**
2 **Orangeville in Wyoming County, New York. Epsilon in turn retained**
3 **certain subcontracting professionals to assist in connection with specific**
4 **areas of the filing. Noble also retained Careba Power Engineers, LLC, to**
5 **assist with the project.**

6 Q. Please state your name, title and business address.

7 A. **My name is Michael E. Guski, CCM, Principal, Epsilon Associates, Inc., 3**
8 **Clock Tower Place, Maynard, Massachusetts.**

9 Q. Please summarize your educational and professional background.

10 A. **I received a B.S. and M.S. in atmospheric science from the State University**
11 **of New York at Albany. I am a certified consulting meteorologist. I am the**
12 **Project Manager for Epsilon Associates in connection with Noble**
13 **Wethersfield, LLC's ("Noble's") proposed 230 kV Wethersfield to**
14 **Orangeville Transmission Line Article VII application. I have over 30 years**
15 **experience in project impact assessment, permitting and compliance.**

16 Q. Does your curriculum vitae fairly and accurately describe your experience?

17 A. **Yes. It is attached to the prefiled testimony.**

18 Q. What was your role in the 230 kV Wethersfield to Orangeville transmission line
19 project?

20 A. **Epsilon Associates was retained by Noble to undertake the analysis and**
21 **studies needed to inform and support a New York State Public Service Law**
22 **Article VII filing for a Certificate of Environmental Compatibility and**

TESTIMONY OF PANEL:
CHARLES R. READLING/MICHAEL E. GUSKI

1 **Public Need (“Certificate”) with respect to Noble’s proposed major utility**
2 **transmission facility in the towns of Wethersfield and Orangeville in**
3 **Wyoming County, New York.**

4 Q. Mr. Readling, what is the purpose of your testimony?

5 A. **As the Noble project manager, I am responsible for the Article VII**
6 **Application and the materials and exhibits that constitute the Application.**
7 **The Application was prepared under my direction and supervision in**
8 **collaboration with Mr. Guski of Epsilon, and with the assistance of others as**
9 **noted in the testimony and exhibits.**

10 Q. Mr. Guski, what is the purpose of your testimony?

11 A. **I am responsible, as project manager for Epsilon, for the exhibits and**
12 **materials that constitute the Application. The Application was prepared by**
13 **the Epsilon team, under my supervision and direction, except where noted.**
14 **Epsilon or Noble retained highly qualified subcontractors for certain**
15 **matters. We also worked with Noble’s engineering consulting firm, Careba**
16 **Power Engineering, LLC (“Careba”), in connection with the Application. I**
17 **am the primary witness sponsoring the Application’s exhibits.**

18 Q. Please describe the project.

19 A. **Noble Wethersfield Windpark, LLC (“Wethersfield”), an indirect subsidiary**
20 **of Noble Environmental Power, LLC, is proposing to construct a 230 kilovolt**
21 **(“kV”) transmission line (“Proposed Transmission Line”) and associated**
22 **facilities to connect the proposed Noble Wethersfield Windpark to an**

TESTIMONY OF PANEL:
CHARLES R. READLING/MICHAEL E. GUSKI

1 existing 230 kV transmission line owned and operated by New York State
2 Electric and Gas Corporation (“NYSEG”) in Wyoming County, New York.
3 The proposed Transmission Line will allow the 127.5 MW of electricity
4 generated at the Noble Wethersfield Windpark to be transmitted to the New
5 York State power grid for distribution to electric customers throughout the
6 region. The proposed Transmission Line will be located in the towns of
7 Wethersfield and Orangeville in Wyoming County, New York. The
8 proposed Transmission Line will be approximately 5.5 miles long through
9 land that is primarily agricultural and forested. The proposed Transmission
10 Line will be placed on wooden H-frame single circuit structures, with spans
11 between poles averaging approximately 600 feet. Pole height will be
12 approximately 70 feet in most locations. At the southern end of the line, the
13 Wethersfield Substation will collect the power generated at the Wethersfield
14 Windpark (at 34.5 kV) and step it up to 230 kV. The Substation footprint
15 will be about 200’ by 300’. The Substation will contain a transformer and
16 other equipment, along with a small control house. At the northern terminus
17 of the line, the Orangeville Switchyard will interconnect the Transmission
18 Line to the NYSEG 230 kV “Stolle-Meyer” line. The Switchyard footprint
19 will be approximately 300’ by 400’. There will be 3 large circuit breakers,
20 overhead buswork and other equipment.

TESTIMONY OF PANEL:
CHARLES R. READLING/MICHAEL E. GUSKI

1 **The proposed Transmission Line starts at the southern end at the proposed**
2 **new Substation in the Town of Wethersfield and travels in a northeasterly**
3 **direction for approximately 5.5 miles, where it will terminate at the proposed**
4 **Orangeville Switchyard, where it will connect to the existing NYSEG 230 kV**
5 **Stolle-Meyer Transmission line. The proposed Wethersfield Substation will**
6 **be located approximately 1,600 feet northeast of Devinney Road. The line**
7 **will proceed north and northeast approximately 1.4 miles before crossing**
8 **Wethersfield Road about 1,800 feet west of Wethersfield Springs; then**
9 **approximately 1.8 miles in a northerly direction to cross Quakertown Road**
10 **approximately 300 feet east of Quakertown Cemetery; then north and east**
11 **for approximately 1.5 miles to cross State Route 238 (Hermitage Road) at a**
12 **point 800 feet north of the intersection with Liberty Road; then about .7**
13 **miles to the proposed Orangeville Switchyard to be located about 1,100 feet**
14 **north of Liberty Road along the existing NYSEG line.**

15 Q. Does the applicant intend to prepare an Environmental Management and
16 Construction Plan (“EM&CP”) for the project?

17 A. **Yes. It is our intention, consistent with Commission practice in Article VII**
18 **proceedings, to provide for Commission approval a detailed EM&CP after**
19 **the Article VII Certificate is issued. That document will provide further**
20 **detail and refinement in connection with the proposed construction of the**

TESTIMONY OF PANEL:
CHARLES R. READLING/MICHAEL E. GUSKI

1 **project, and attendant environmental safeguards.**

2 Q. Does this Article VII filing contain general information regarding the application?

3 A. **Yes. Exhibit 1 was prepared under our supervision and direction to provide**
4 **that information.**

5 Q. Does the filing contain a description of the facilities and their location?

6 A. **Yes it does, in Exhibit 2. Exhibit 2 was prepared under our supervision and**
7 **direction.**

8 Q. Did Noble investigate alternatives to the project proposed in the filing?

9 A. **Yes. The analysis of alternatives is presented in Exhibit 3. That exhibit was**
10 **prepared by us and under our supervision and direction. The material**
11 **concerning the Public Information Program was provided by Mr. Readling.**
12 **The alternatives with respect to voltage and structures were prepared by Mr.**
13 **Sampson. Careba assisted in connection with the analysis of undergrounding**
14 **options.**

15 Q. What considerations went into the determination of the proposed route?

16 A. **As explained in Exhibit 3, a number of factors were considered in the process**
17 **of route selection, including of course landowner preferences as well as**
18 **engineering and environmental concerns. The ROW avoids scenic areas.**
19 **The route was chosen to minimize visibility from public view. Efforts were**
20 **made to avoid heavily timbered areas and steep slopes. The route avoids**
21 **high points and ridge lines. The route preserves the natural landscape and**
22 **minimizes land use conflicts.**

23 Q. Was the environmental impact of the project studied?

TESTIMONY OF PANEL:
CHARLES R. READLING/MICHAEL E. GUSKI

1 **A. Yes it was. The studies of the environmental impact are set forth in Exhibit**
2 **4. For the most part, the environmental studies were undertaken as a**
3 **collaboration by environmental scientists conversant in the relevant**
4 **disciplines. Exhibit 4 was prepared under Mr. Guski's direction and**
5 **supervision. The construction procedures and schedule were addressed by**
6 **Mr. Haas. The analysis of wetlands and terrestrial resources was done under**
7 **the supervision of Mr. Vieira. Mr. Vieira was also responsible for the**
8 **wildlife analysis. The visual analysis was supervised by Mr. Guariglia of**
9 **Saratoga Associates and Ms. Fletcher of Epsilon. The cultural analysis was**
10 **conducted under the supervision of Dr. Klein of John Milner Associates in**
11 **collaboration with Ms. Dixon of Epsilon. Ms. Cadigan was primarily**
12 **responsible for the supervision of the geological and soils analysis. The air**
13 **and noise quality sections were prepared under Mr. Guski's direction.**

14 **Q. Does the application contain design drawings?**

15 **A. Yes, in Exhibit 5. Those drawings were done under the direction and**
16 **supervision of Careba in collaboration with Mr. Sampson and Mr. Haas.**
17 **Those gentlemen also examined the cost of the facility, and prepared Exhibit**
18 **9 addressing that matter. They provided the detailed description of the**
19 **proposed transmission line and other related facilities set forth in Exhibit E-1**
20 **and Exhibit E-2; and they also provided the engineering justification which is**
21 **set forth in Exhibit E-4.**

TESTIMONY OF PANEL:
CHARLES R. READLING/MICHAEL E. GUSKI

1 Q. Does the filing contain a statement of the economic effect of the proposed
2 facility?

3 A. **Yes it does. Exhibit 6 was prepared under our direction and supervision.**

4 Q. Does the filing contain a list of all local ordinances, laws, or other requirements
5 applicable to the proposed facility?

6 A. **Yes. That material, along with a statement of the justification for a request
7 for the Commission to refuse to apply certain local legal provisions, is set
8 forth in Exhibit 7. That Exhibit was prepared under our supervision and
9 direction, in collaboration with legal counsel where appropriate.**

10 Q. Does the application address other pending filings?

11 A. **Yes. Exhibit 8 was prepared under our supervision and direction. That
12 Exhibit briefly sets forth filings related to the proposed project.**

13 Q. Does the application address the project's anticipated effects on communications?

14 A. **Yes. That matter is addressed in Exhibit E-5. That Exhibit was prepared
15 under the direction and supervision of Mr. Opalanko.**

16 Q. Does the application address the project's effect on transportation?

17 A. **Yes. Exhibit E-6 was prepared under our supervision and direction.**

18 Q. Does the filing contain other information you thought may be helpful?

19 A. **Yes it does in several areas. We have also provided a set of "suggested
20 conditions," that we think would be reasonable conditions to attach to the
21 Commission's Certificate in this proceeding. In recent proceedings the
22 interested parties have arrived at mutually agreeable conditions for the**

TESTIMONY OF PANEL:
CHARLES R. READLING/MICHAEL E. GUSKI

1 **Commission’s Certificate. Our initial suggested draft conditions are drawn**
2 **from recent Commission decisions.**

3

4 Q. What is your conclusion regarding the project based on the studies and analysis
5 conducted?

6 A. **The proposed facility represents the minimum adverse environmental**
7 **impact, given the state of technology, and the nature and economics of the**
8 **alternatives. The facility is needed and is in the public interest. The project**
9 **has the minimum adverse effect on agricultural lands and wetlands. It will**
10 **not have any significant adverse long term effect on land use, visual**
11 **resources, cultural resources, terrestrial resources, wildlife, soils, water**
12 **resources, cultural resources, or other human or natural resources. It should**
13 **not have a significant adverse effect on traffic or transportation. The noise**
14 **impact should be minimal. There should be no impact on communications.**
15 **The EMF impacts should be well below all relevant guidelines. In sum, the**
16 **project as proposed minimizes the potential adverse effect of the project to**
17 **the maximum extent practicable.**

18 Q. Does this complete your prefiled testimony at this time?

19 A. Yes.

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Project Pursuant to Article VII of the
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DIRECT TESTIMONY OF

PETER A. VALBERG

ON BEHALF OF

NOBLE WETHERSFIELD WINDPARK, LLC

Dated: January 19, 2007

PAV

TESTIMONY OF PETER A. VALBERG

1 Q. Please state your name, title and business address.

2 A. **Peter A. Valberg, Ph.D., Gradient Corporation, 20 University Road,**
3 **Cambridge, Massachusetts.**

4 Q. Please summarize your educational and professional background.

5 A. **I am a Principal at Gradient Corporation. I specialize in the areas of**
6 **inhalation toxicology, biological modeling of human exposure to**
7 **environmental agents, and human health risk assessment. Some of the**
8 **specific agents I have studied extensively include air pollutants, groundwater**
9 **contaminants, radio wave frequencies (“RF”), and electric and magnetic**
10 **fields (“EMF”). I hold an A.B. degree, *summa cum laude*, in Physics and**
11 **Mathematics from Taylor University, both M.A. and Ph.D. degrees in**
12 **Physics from Harvard University, and an M.S. degree in Human Physiology**
13 **from the Harvard University School of Public Health (“HSPH”). For 25**
14 **years, I served as a faculty member in the Department of Environmental**
15 **Health at HSPH, where I researched and taught toxicology, cell biology,**
16 **environmental health, and public health. One of the research grants I**
17 **directed at HSPH was funded by the National Cancer Institute, and was on**
18 **the topic of “Magnetic Field Effects on Macrophages” (where ‘macrophages’**
19 **are a type of lung cell that cleans the lung of particles deposited there from**
20 **dust present in the air we breathe). I have served on advisory panels for the**
21 **National Institutes of Health (“NIH”), the Health Effects Institute, and the**
22 **Environmental Protection Agency (“EPA”). I am a member of the**

TESTIMONY OF PETER A. VALBERG

1 **International Society for Environmental Epidemiology, the Health Physics**
2 **Society, the Bioelectromagnetics Society, and the Committee on Man and**
3 **Radiation (“COMAR”). I am on the Board of Directors of the**
4 **Bioelectromagnetics Society. Through the Harvard University, Center for**
5 **Risk Analysis, I served as a member of the “Harvard Advisory Committee on**
6 **EMF and Human Health” as well as a member of the “Peer Review Board on**
7 **Cellular Technology and Human Health.” I assisted the Health Effects**
8 **Institute in determining the feasibility of launching an EMF research**
9 **program, and I have published a summary document on “EMF**
10 **Mechanisms” in the journal *Radiation Research*. At the request of the**
11 **International Congress on Radiation Research (“ICRR”), I organized and**
12 **chaired a symposium on “Physical aspects of EMF/RF effects on Biological**
13 **Systems,” at the 11th Annual ICRR meeting in Dublin, Ireland (1999).**
14 **Recently, I helped organize a conference in the Boston area on “Childhood**
15 **Leukemia: Electric and Magnetic Fields as Possible Risk Factors.” A**
16 **summary of this workshop was published (2003) in the journal**
17 ***Environmental Health Perspectives*.**

18 Q. Does your curriculum vitae fairly and accurately describe your experience?

19 A. **Yes. It is attached to the prefiled testimony.**

20 Q. What was your role in the 230 kV Wethersfield to Orangeville transmission line
21 project?

22 A. **I was asked by Noble Environmental Power, LLC, to analyze the**

TESTIMONY OF PETER A. VALBERG

1 **potential health impacts of electric and magnetic fields (EMF) predicted for**
2 **the proposed Wethersfield to Orangeville 230 kV Transmission Line.**

3 Q. What is the purpose of your testimony?

4 A. **Gradient, under my direction and supervision, prepared a report evaluating**
5 **the EMF impact of the proposed line. The topic is addressed in Section 5.6 of**
6 **Exhibit 5. The report itself is included in the filing as Exhibit ___ (PAV-1).**

7 Q. Please summarize your testimony.

8 A. **Section 2 provides an overview of what is known about EMF and their**
9 **possible effects on human health. Section 3 summarizes expert opinion and**
10 **applicable regulatory guidance as it applies to potential EMF health impacts.**
11 **Section 4 assesses the potential health effects of the EMF calculated for the**
12 **project. Section 5 summarizes the conclusions of the analysis. My review of**
13 **(1) the current status of biological, public health, and medical research on the**
14 **possible effects of power-line EMF on health, (2) the current scientific**
15 **consensus documents and regulatory guidelines on allowable EMF**
16 **exposures, and (3) the EMF levels predicted to be associated with this**
17 **project, leads me to conclude that the projected power-line EMF exposures**
18 **due to construction of the project are not likely to lead to adverse effects on**
19 **health for people living, working, or walking in the vicinity of the affected**
20 **ROWs.**

21 Q. Please describe your report.

22 A. **The report reviews the applicable standards and guidelines developed by the**

TESTIMONY OF PETER A. VALBERG

1 **New York State Public Service Commission. Then, using modeling**
2 **techniques, we calculated magnetic field strengths and electric field limits**
3 **that will be provided by the project under a variety of conditions, including**
4 **maximum winter normal conductor loading. Magnetic fields are measured**
5 **in “gauss” (“G”) or “milligauss” (“mG”). The Public Service Commission’s**
6 **standard for magnetic fields is 200 mG at the edge of the ROW. Our**
7 **modeling results indicate that the project magnetic field under maximum**
8 **anticipated load is 14.3 mG, or less than one-twelfth of the standard. At**
9 **maximum winter normal conductor loading, the magnetic field at the edge of**
10 **the ROW would be 53.4 mG, or about one-quarter of the standard. Electric**
11 **field strengths are measured in kilovolts per meter (“kV/m”). The Public**
12 **Service Commission standard at the edge of the ROW is 1.6 kV/m. The**
13 **highest modeled value for the project is 0.5 kV/m, well below the standard.**
14 **Both magnetic and electric field standards drop rapidly with distance from**
15 **the center line of the ROW.**

16 Q. How do these values compare to typical or ambient conditions?

17 A. **EMF’s are a natural as well as man made phenomenon. The EMFs**
18 **produced by the proposed power line are well within the range of EMF**
19 **exposure from other sources, such as motorized appliances in the home.**

20 Q. Does the proposed project comply with the Public Service Commission’s
21 guidelines and requirements with respect to EMF?

22 A. **Yes. EMFs from the proposed transmission line are well within Public**

TESTIMONY OF PETER A. VALBERG

1 **Service Commission guidelines.**

2 Q. Does this complete your prefiled testimony at this time?

3 A. Yes.

TESTIMONY OF DANIEL T. HAAS

STATE OF NEW YORK
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DIRECT TESTIMONY OF

DANIEL T. HAAS

ON BEHALF OF

NOBLE WETHERSFIELD WINDPARK, LLC

Dated: January 19, 2007

DTH

TESTIMONY OF DANIEL T. HAAS

1 Q. Please state your name, title and business address.

2 A. **Daniel T. Haas, Managing Director-Operations, Noble Environmental**
3 **Power, LLC (“Noble”), Essex, Connecticut.**

4 Q. Please summarize your educational and professional background.

5 A. **I received an AAS degree from the State University of New York College at**
6 **Canton, New York. I have 28 years of experience in construction and**
7 **operation of electric power and heavy industry projects. Since February**
8 **2005, I have been with Noble as the Managing Director of Operations. I am**
9 **responsible for creating and directing an in-house engineering and**
10 **construction team at Noble and supervising Noble’s consulting engineers and**
11 **construction contractors. I am responsible for the construction, operation**
12 **and maintenance of all of our power projects. I have extensive experience in**
13 **the electric power industry, including wind energy generating facilities and**
14 **transmission facilities, both domestically and internationally.**

15 Q. Does your curriculum vitae fairly and accurately describe your experience?

16 A. **Yes. It is attached to the prefiled testimony.**

17 Q. What was your role in the 230 kV Wethersfield to Orangeville transmission line
18 project?

19 A. **I am responsible for the construction and subsequent operations of the**
20 **proposed transmission project.**

21 Q. What is the purpose of your testimony?

22 A. **I am primarily responsible for those sections of the application that address**

TESTIMONY OF DANIEL T. HAAS

1 **the construction and subsequent operation of the project. I collaborated with**
2 **the Noble and Epsilon teams with respect to those areas of the project**
3 **planning and the application. In particular, Section 4.2 of Exhibit 4 was**
4 **prepared by me or under my direction and supervision.**

5 Q. As presented, can the project be safely constructed and operated?

6 A. **Yes. The project can be safely constructed and operated in full compliance**
7 **with all relevant standards and practices. Construction techniques will be**
8 **employed to minimize any potential adverse impact of construction.**
9 **Furthermore, Noble and its contractors will incorporate the safeguards**
10 **envisioned in the suggested conditions contained in this filing. Noble intends**
11 **to develop an appropriate Environmental Management and Construction**
12 **Plan (“EM&CP”) and to submit that to the Commission for its approval**
13 **prior to construction. Noble will be able to build the project on the route we**
14 **have proposed in a safe and environmentally sound manner.**

15 Q. Does this complete your prefiled testimony at this time?

16 A. **Yes.**

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DIRECT TESTIMONY OF

JESSIE S. CADIGAN

ON BEHALF OF

NOBLE WETHERSFIELD WINDPARK, LLC

Dated: January 19, 2007

JSC

TESTIMONY OF JESSE S. CADIGAN

1 Q. Please state your name, title and business address.

2 A. **My name is Jessie S. Cadigan, PG, Epsilon Associates, Inc.**

3 Q. Please summarize your educational and professional background.

4 A. **I graduated from Whitman College with a BS in geology and from Boston**
5 **University with an MA in geology. I am a licensed professional geologist. I**
6 **am an environmental scientist focusing on hydrogeology, geology, and soil**
7 **and water quality issues. I have experience in designing field investigations**
8 **to locate potable and non-potable water supply well locations and analyzing**
9 **potential impacts of proposed water withdrawals. I have been involved in**
10 **analyzing geographic information systems (GIS) data as it relates to the**
11 **hydrographic features, natural resources, and regulated areas of sites. Prior**
12 **to joining Epsilon, I was an Assistant Project Manager at GZA**
13 **GeoEnvironmental, Inc. in the Hydrogeology group. There I was involved in**
14 **organizing and overseeing site investigations. I have extensive experience in**
15 **completing groundwater sampling events using multiple sampling**
16 **techniques, including low-flow methodologies, overseeing drilling operations**
17 **to collect soil samples and install groundwater monitoring wells, and**
18 **conducting testing to determine aquifer hydraulic properties.**

19 Q. Does your curriculum vitae fairly and accurately describe your experience?

20 A. **Yes. It is attached to the prefiled testimony.**

21 Q. What was your role in the 230 kV Wethersfield to Orangeville transmission line
22 project?

TESTIMONY OF JESSE S. CADIGAN

1 **I have assisted the Epsilon team in conducting the necessary analyses in**
2 **connection with Noble’s proposed transmission project. In particular, I am**
3 **responsible for the geological investigation in connection with the project.**

4 Q. What is the purpose of your testimony?

5 A. **The sections of the Article VII filing which address the soils and geology at**
6 **the proposed right of way for the project, were prepared by me or under my**
7 **supervision and direction. In particular, I am responsible for Exhibit 4,**
8 **Section 4.7 of the application.**

9 Q. Will the proposed project have a substantial adverse impact on the soils and
10 geology along the right of way?

11 A. **The Exhibit contains a fairly comprehensive description of the soils and**
12 **geology along the right of way. In sum, the project will not have a significant**
13 **adverse impact on soils or geological resources. There are no unique soils or**
14 **geology along the ROW, and given the mitigation measures proposed the**
15 **project should result in minimal potential adverse environmental impacts.**

16 Q. Does this complete your prefiled testimony at this time?

17 A. **Yes.**

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DIRECT TESTIMONY OF

RICHARD S. OPALANKO

ON BEHALF OF

NOBLE WETHERSFIELD WINDPARK, LLC

Dated: January 19, 2007

RSO

TESTIMONY OF RICHARD S. OPALANKO

1 Q. Please state your name, title and business address.

2 A. **Richard S. Opalanko, P.E., Noble Environmental Power, LLC, Essex,**
3 **Connecticut.**

4 Q. Please summarize your educational and professional background.

5 A. **I am an Applications Engineer at Noble. I am a licensed chemical engineer**
6 **with over 35 years of professional experience. I have a B.S. in chemical**
7 **engineering from Carnegie Mellon University and an M.S. from the**
8 **University of Massachusetts, Lowell. I have extensive experience in the**
9 **electric power industry.**

10 Q. Does your curriculum vitae fairly and accurately describe your experience?

11 A. **Yes. It is attached to the prefiled testimony.**

12 Q. What was your role in the 230 kV Wethersfield to Orangeville transmission line
13 project?

14 A. **I have assisted the Noble team in designing the transmission project. I have**
15 **also been responsible for analyzing the potential telecommunication impact**
16 **of the project.**

17 Q. What is the purpose of your testimony?

18 A. **I am responsible for Exhibit E-6, entitled "Effect on Communication,"**
19 **authored by Comsearch and prepared under my supervision and direction.**

20 Q. Can you summarize the report?

21 A. **The analysis determined that two microwave communication links cross the**

TESTIMONY OF RICHARD S. OPALANKO

1 **proposed transmission line. Both have adequate vertical clearance to avoid**
2 **interference. The analysis also determined that the electromagnetic**
3 **interference from the transmission line will not effect most devices. There is**
4 **a potential for degradation of some AM radio reception in the immediate**
5 **vicinity of the line, which is a typical phenomenon we are all familiar with**
6 **when we drive our car near high voltage transmission lines. The report**
7 **analyzed FCC regulations concerning emissions from power lines and**
8 **concluded that the proposed project line emissions are well below the**
9 **interference limits set by the FCC.**

10 Q. Does this complete your prefiled testimony at this time?

11 A. Yes.

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DIRECT TESTIMONY OF

PANEL: JOEL I. KLEIN/TAYA S. DIXON

ON BEHALF OF

NOBLE WETHERSFIELD WINDPARK, LLC

Dated: January 19, 2007

JIK/TSD

TESTIMONY OF PANEL: JOEL I. KLEIN/TAYA S. DIXON

1 Q. Please state your name, title and business address.

2 **A. Joel I. Klein, Ph.D., RPA, John Milner Associates, Inc. (“JMA”), Croton on**
3 **Hudson, New York.**

4 Q. Please summarize your educational and professional background.

5 **A. I am an Associate Director in the cultural resources department at JMA. I**
6 **have a B.S. from the City College of New York and an M.A. and Ph.D. from**
7 **New York University, all in anthropology. I am a registered professional**
8 **archeologist. I have over 20 years experience in professional archeology.**
9 **Prior to joining the private sector in 1977, I was a scientist with the State**
10 **Historic Preservation Office in the New York State Office of Parks and**
11 **Recreation.**

12 Q. Does your curriculum vitae fairly and accurately describe your experience?

13 **A. Yes. It is attached to the prefiled testimony.**

14 Q. What was your role in the 230 kV Wethersfield to Orangeville transmission line
15 project?

16 **A. JMA was retained as a subcontractor to Epsilon Associates to conduct the**
17 **appropriate analyses of potential impacts of the proposed project on cultural**
18 **resources.**

19 Q. Please state your name, title and business address.

20 **A. Taya S. Dixon, Senior Planner, Epsilon Associates, Inc., 3 Clock Tower**
21 **Place, Maynard, Massachusetts.**

22 Q. Please summarize your educational and professional background.

TESTIMONY OF PANEL: JOEL I. KLEIN/TAYA S. DIXON

1 **A. I have a B.A. in architectural history from Wellesley College and an M.S. in**
2 **historic preservation from the University of Pennsylvania. I specialize in**
3 **historic preservation and architectural history. I have eight years experience**
4 **in cultural resource management, historic preservation planning,**
5 **architectural design review, and environmental regulation and compliance at**
6 **the federal and state level. Prior to joining Epsilon, I was with the**
7 **Massachusetts Historical Commission, which is the Commonwealth's**
8 **Historic Preservation Office. I am a qualified historic preservation**
9 **consultant.**

10 Q. Does your curriculum vitae fairly and accurately describe your experience?

11 **A. Yes. It is attached to the prefiled testimony.**

12 Q. What was your role in the 230 kV Wethersfield to Orangeville transmission line
13 project?

14 **A. In collaboration with Dr. Joel Klein, I am responsible for the cultural**
15 **resource analyses conducted for the project.**

16 Q. Dr. Klein, what is the purpose of your testimony?

17 **A. In collaboration with Ms. Dixon of Epsilon, Section 4.7 of Exhibit 4 was**
18 **prepared under my direction and supervision. I supervised and directed**
19 **Phases IA and IB surveys of the project study area. My reports concerning**
20 **those surveys are attached to Exhibit 4 as Exhibit __ JIK1 and Exhibit __**
21 **JIK2.**

22 Q. Ms. Dixon, what is the purpose of your testimony?

1 **A. Section 4.7 of Exhibit 4 was prepared by me or under my direction and**
2 **supervision, in collaboration with Dr. Klein.**

3 **Q. What conclusions did you reach in connection with your cultural analyses?**

4 **A. The Phase IA analysis revealed no known archeological site in the immediate**
5 **area of the project, although there are sites within three miles of the project.**
6 **There are a number of historic properties or eligible historic properties**
7 **located within the five mile “Project Study Area.” It appears at this stage**
8 **that the project will not be visible from any OPRHP properties listed on the**
9 **National Register of Historic Places or determined eligible for listing in the**
10 **National Register. We concluded that a Phase 1B archeological survey**
11 **should be conducted prior to construction where ground may be disturbed,**
12 **and further that a Phase 1B historic-architectural survey should be**
13 **conducted in the project study area that is in the viewshed of the project.**
14 **The Phase 1B work was underway as of the time of this writing. We will**
15 **provide that information when it is available.**

16 **Q. Does this complete your prefiled testimony at this time?**

17 **A. Yes.**

STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

Case 07-T-_____ - Application of Noble Wethersfield
Windpark, LLC for a Certificate of
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Public Need for the Construction
And Operation of the Wethersfield
to Orangeville 230 kV Transmission
Project Pursuant to Article VII of the
Public Service Law

DIRECT TESTIMONY OF

PANEL: VICTORIA HOFFMAN FLETCHER/JOHN GUARIGLIA

ON BEHALF OF

NOBLE WETHERSFIELD WINDPARK, LLC

Dated: January 19, 2007

VHF/JWG

TESTIMONY OF VICTORIA HOFFMAN FLETCHER

1 Q. Please state your name, title and business address.

2 **A. My name is Victoria H. Fletcher, RLA. I am a Principal at Epsilon**
3 **Associates, Inc., 3 Clock Tower Place – Suite 250, Maynard, Massachusetts,**
4 **01754.**

5 Q. Please summarize your educational and professional background.

6 **A. I am a Registered Landscape Architect with almost 20 years of experience**
7 **in the areas of facility planning, environmental analysis, permitting, design**
8 **and construction monitoring for infrastructure and site development**
9 **activities. I received a Bachelor of Arts degree from Bard College,**
10 **Annandale-on-Hudson, New York in 1983, and I received a Master of**
11 **Landscape Architecture degree from Harvard University, Cambridge,**
12 **Massachusetts in 1987. My work has ranged from the management of**
13 **permitting for major infrastructure projects to development of resource**
14 **management plans for open space/conservation land. Prior to joining**
15 **Epsilon Associates, I was employed by the Massachusetts Turnpike**
16 **Authority as an Environmental Analyst, where my responsibilities included**
17 **Massachusetts Environmental Protection Agency (MEPA) submittals,**
18 **coordination of the Pollution Prevention/Resource Conservation Plan,**
19 **wetlands permitting and mitigation design. Prior to that I was employed by**
20 **the Massachusetts Department of Public Works as Supervisor of the**
21 **Landscape Architecture Section**

22 Q. Does your curriculum vitae fairly and accurately describe your experience?

23 **A. Yes. It is attached to the prefiled testimony.**

TESTIMONY OF VICTORIA HOFFMAN FLETCHER

1 Q. What was your role in the 230 kV Wethersfield to Orangeville transmission line
2 project?

3 A. **I assisted the Epsilon team in conducting analyses undertaken in connection
4 with Noble's proposed transmission project. In particular, I supported the
5 visual analysis efforts in collaboration with Epsilon GIS staff and Mr.
6 Guaraglia of Saratoga Associates. My responsibilities included periodic
7 review of the visual assessment methodology and mapping efforts as the
8 work was undertaken, and review of the analysis presented in the Visual
9 Resource Assessment prepared by Saratoga Associates. .**

10 Q. Please state your name, title and business address.

11 A. **John Guariglia, RLA, Saratoga Associates, Saratoga, New York.**

12 Q. Please summarize your educational and professional background.

13 A. **I am a registered landscape architect with over ten years of professional
14 experience. I received a Bachelors of Landscape Architecture degree from
15 the State University of New York College of Environmental Science and
16 Forestry. Over the last several years my practice has focused on visual
17 impact assessment, including assessments for several wind projects and their
18 associated transmission facilities.**

19 Q. Does your curriculum vitae fairly and accurately describe your experience?

20 A. **Yes. It is attached to the prefiled testimony.**

21 Q. What was your role in the 230 kV Wethersfield to Orangeville transmission line
22 project?

23 A. **In collaboration with Ms. Fletcher of Epsilon I was responsible for the visual
24 impact assessment of the proposed project.**

TESTIMONY OF VICTORIA HOFFMAN FLETCHER

1 Q. What is the purpose of your testimony?

2 A. **We conducted the analysis of visual resources in connection with the project.**
3 **We assisted in developing appropriate project visual mitigation. Section 4.9**
4 **of Exhibit 4 dealing with visual minimization and resources was prepared**
5 **under our direction and supervision.**

6 Q. Will the proposed project have a substantial adverse impact on the visual resource
7 in the area?

8 A. **No. As explained in Exhibit 4, the project should not significantly change the**
9 **existing visual or aesthetic characteristics of the area. It is compatible with**
10 **existing use and generally well screened. It is likely to have a minimal**
11 **adverse impact on visual resources.**

12 Q. Does this complete your prefiled testimony at this time?

13 A. Yes.

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DIRECT TESTIMONY OF

JOHN VIEIRA, JR.

ON BEHALF OF

NOBLE WETHERSFIELD WINDPARK, LLC

Dated: January 19, 2007

JV

TESTIMONY OF JOHN VIEIRA, JR.

1 Q. Please state your name, title and business address.

2 A. **John Vieira, Jr., PWS, NHCWS, Epsilon Associates, Inc., 3 Clock Tower**
3 **Place, Maynard, Massachusetts.**

4 Q. Please summarize your educational and professional background.

5 A. **I am a senior wetland scientist at Epsilon. I have a B.S. from the University**
6 **of Massachusetts and have undertaken graduate studies in wildlife biology**
7 **and landscape architecture at UMass. I am certified by the Society of**
8 **Wetland Scientists as a Professional Wetland Scientist, and am certified in**
9 **wildlife habitat procedures by the U.S. Fish and Wildlife Service. I have over**
10 **25 years experience in wetland ecology, conservation biology and natural**
11 **resource management. Prior to joining Epsilon, I was employed doing**
12 **similar work for several environmental and engineering firms. Prior to that,**
13 **I was with the U.S. Army Corps of Engineers.**

14 Q. Does your curriculum vitae fairly and accurately describe your experience?

15 A. **Yes. It is attached to the prefiled testimony.**

16 Q. What was your role in the 230 kV Wethersfield to Orangeville transmission line
17 project?

18 A. **I worked with the Noble and Epsilon team to conduct the analyses necessary**
19 **to inform and support the project application. In particular, I was**
20 **responsible for the wetlands and wildlife analyses.**

21 Q. What is the purpose of your testimony?

22 A. **Sections 4.3 (land use), 4.4 (terrestrial resources), 4.5 (wildlife) and 4.6**

TESTIMONY OF JOHN VIEIRA, JR.

1 **(hydrologic resources) of Exhibit 4 were prepared by me or under my**
2 **direction and supervision.**

3 Q. Can you briefly describe the impact of the project on the terrestrial communities
4 in its vicinity?

5 A. **The terrestrial impact will be modest. There is no unique, sensitive or**
6 **protected habitat along the proposed project route. Construction and**
7 **operation of the transmission line will to some degree effect the terrestrial**
8 **ecology. Forested upland areas, for instance, will be cleared and will be**
9 **maintained as open upland, primarily as successional shrubland. In**
10 **addition, there will be minimal loss of agricultural land primarily in**
11 **connection with the switchyard and substation.**

12 Q. Will any threatened or endangered species be effected by the project?

13 A. **There are no known threatened or endangered species along the project right**
14 **of way.**

15 Q. Will hydrologic resources be effected by the project?

16 A. **Yes. We conducted extensive literature and field investigations to determine**
17 **the hydrologic resources in the area. Our analysis revealed several streams**
18 **and a number of wetland areas near the project site. The analysis is detailed**
19 **in Section 4.6 of Exhibit 4.**

20 Q. What is the extent of impacts on wetlands?

21 A. **The preferred route of the project has a very minor impact on wetlands.**
22 **There will be a temporary wetland impact on approximately 0.01 acres (one**

TESTIMONY OF JOHN VIEIRA, JR.

1 **one/hundredths of an acre) and a permanent wetland impact on 0.07 (seven**
2 **one/hundredths of an acre). In combination with this application, and with**
3 **the application for permits for the Wethersfield Windpark, Noble is**
4 **preparing a joint application to the Army Corps of Engineers and DEC.**
5 **Mitigation and enhancement areas will be designed and approved in**
6 **consultation with these agencies. The Joint Application to the ACOE and**
7 **DEC will include a conceptual mitigation plan. The EM&CP to be approved**
8 **by the Commission will address avoidance and minimization in detail.**

9 Q. Are there any impacts on streams?

10 A. **The transmission corridor crosses 3 protected streams. Again, the proposed**
11 **route minimizes impacts on streams. There will be a total of 600 square feet**
12 **of temporary impact to streams, none within a protected stream (designated**
13 **c(T)). As with wetlands, the EM&CP will specify techniques and procedures**
14 **to avoid or mitigate any impact on streams arising from construction and**
15 **operation of the proposed project.**

16 Q. Does this complete your prefiled testimony at this time?

17 A. **Yes.**

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DIRECT TESTIMONY OF

PANEL: GLENN SAMPSON/ROBERT A. BUCELWICZ/JAMES G. HARRINGTON

ON BEHALF OF

NOBLE WETHERSFIELD WINDPARK, LLC

Dated: January 19, 2007

GAS/RAB/JGH

TESTIMONY OF PANEL:
GLENN A. SAMPSON, ROBERT A. BUCELWICZ, JAMES G. HARRINGTON

1 Q. Please state your name, title and business address.

2 A. **Glenn A. Sampson, Noble Environmental Power, LLC, Essex, Connecticut.**

3 Q. Please summarize your educational and professional background.

4 A. **I am the Director, Technology, for Noble Environmental Power, LLC. I have**
5 **a B.S. from the United States Merchant Marine Academy. At Noble, I am**
6 **responsible for all aspects of the interconnection of Noble's wind generating**
7 **facilities with the electric transmission grid. Prior to joining Noble I had**
8 **over 20 years experience in energy services and construction, concentrated**
9 **particularly in energy development and the interconnection of electric**
10 **generating facilities to the transmission grid.**

11 Q. Does your curriculum vitae fairly and accurately describe your experience?

12 A. **Yes. It is attached to the prefiled testimony.**

13 Q. What was your role in the 230 kV Wethersfield to Orangeville transmission line
14 project?

15 A. **I am responsible for the overall conceptual design of the project. The**
16 **electrical and structural engineering done by Careba, our consulting**
17 **engineers, was done under my supervision and direction.**

18 Q. Please state your name, title and business address.

19 A. **Robert A. Bucelwicz, PE, Careba Power Engineers, LLC, Westwood,**
20 **Massachusetts.**

21 Q. Please summarize your educational and professional background.

22 A. **I am a Senior T&D structural engineer at Careba and a licensed professional**
23 **engineer.**

TESTIMONY OF PANEL:
GLENN A. SAMPSON, ROBERT A. BUCELWICZ, JAMES G. HARRINGTON

1 **I have a B.S. in civil engineering from Northeastern University. I have over**
2 **30 years experience in the electric utility industry.**

3 Q. Does your curriculum vitae fairly and accurately describe your experience?

4 A. **Yes. It is attached to the prefiled testimony.**

5 Q. What was your role in the 230 kV Wethersfield to Orangeville transmission line
6 project?

7 A. **Careba was retained by Noble to assist it in connection with the design of the**
8 **Wethersfield to Orangeville transmission project. I assisted the Noble and**
9 **Careba team in the design of the proposed transmission project. In**
10 **particular, I was responsible for the design of the structures proposed for the**
11 **project.**

12 Q. Please state your name, title and business address.

13 A. **James G. Harrington, Careba Power Engineers, LLC, Westwood,**
14 **Massachusetts.**

15 Q. Please summarize your educational and professional background.

16 A. **I am a Senior Electrical Engineer at Careba. I have a B.S. in electrical**
17 **engineering from Northeastern University. I have over 40 years experience**
18 **in the electric utility industry.**

19 Q. Does your curriculum vitae fairly and accurately describe your experience?

20 A. **Yes. It is attached to the prefiled testimony.**

21 Q. What was your role in the 230 kV Wethersfield to Orangeville transmission line
22 project?

23 A. **I am the lead engineer at Careba responsible for the proposed transmission**

TESTIMONY OF PANEL:
GLENN A. SAMPSON, ROBERT A. BUCELWICZ, JAMES G. HARRINGTON

1 **line and related facilities. My primary responsibility was the electrical**
2 **engineering support required for the project which included the 34.5 kV/230**
3 **kV Substation, the 230 kV Transmission Line and the 230 kV Switchyard**
4 **and interconnection with NYSEG.**

5 Q. What is the purpose of your testimony?

6 A. **I was responsible for the evaluation and selection of the design criteria and**
7 **structure types for the 230 kV Transmission Line, developing the general**
8 **arrangements for the Substation and Switchyard and preparing the**
9 **engineering cost estimates for the Transmission Line, Substation and**
10 **Switchyard.**

11 **I was also responsible for the underground alternative evaluation including**
12 **the associated engineering cost estimate.**

13 **Those portions of Exhibit 3 concerning the choice of interconnection, voltage**
14 **and structures, were prepared by us or under our supervision and direction.**
15 **Exhibits E-1, concerning a description of the line, Exhibit E-2, concerning**
16 **other facilities, and Exhibit E-4, concerning engineering justification, were**
17 **prepared by us or under our supervision and direction.**

18 Q. Can you briefly describe the proposed transmission facility?

19 A. **The proposed project begins at the Wethersfield substation, where the power**
20 **generated at the Wethersfield Windpark will be collected, stepped up to 230**
21 **kV, and transmitted to the transmission line. The substation and switchyard**
22 **are described in Exhibit E-2. The line itself, approximately 5.5 miles long,**
23 **will be 3 phase overhead conductor carried on wooden “H” frame pole, and**
24 **wooden angle structures (guyed or laminate). It is described in Exhibit E-1.**

TESTIMONY OF PANEL:
GLENN A. SAMPSON, ROBERT A. BUCELWICZ, JAMES G. HARRINGTON

1 **The line terminates at the proposed switchyard, where a ring bus will**
2 **interconnect the line to the bulk power grid.**

3 Q. Have the appropriate studies been conducted to analyze the effect of the proposed
4 project on the interconnected grid?

5 A. **Yes. Noble, along with its consultant, ABB, Inc. performed a system**
6 **reliability impact study (“SRIS”) and submitted that study to the New York**
7 **Independent Systems Operator (“NYISO”) on December 1, 2006. The study**
8 **was performed pursuant to a scope of study approved by the NYISO. As of**
9 **the time of this writing, we expect to update the SRIS to reflect further**
10 **comments made by NYSEG. We also expect the Transmission Planning**
11 **Advisory Subcommittee (“TPAS”) of the NYISO to approve the SRIS at its**
12 **February 2007 meeting. Because the full SRIS is voluminous, and perhaps of**
13 **limited interest to some, we are attaching a copy of the executive summary of**
14 **the SRIS to this application. We are providing a complete copy of the SRIS**
15 **under separate cover directly to DPS Staff, and will also provide directly to**
16 **DPS Staff any further material connected with the SRIS approval process.**
17 **We will file with the Commission the TPAS documentation concerning**
18 **approval of the SRIS when it is available. We will provide this material to**
19 **any party that requests it.**

20 Q. What did the SRIS show?

21 A. **The SRIS included thermal, voltage, short circuit and stability analysis. The**
22 **SRIS concluded that the project will constitute a safe and reliable**
23 **interconnection with the bulk power system.**

24 Q. Does this complete your prefiled testimony at this time?

25 A. Yes.