

# Ted W. Guertin, Senior Air Quality Meteorologist

# **EXPERIENCE SUMMARY**

Mr. Guertin is a senior air quality meteorologist and project manager with over 29 years of consulting experience. His experience includes environmental licensing, shadow flicker analyses, wind power related visual assessments, wind resource assessments, dispersion modeling, air toxic assessments, air quality permitting and monitoring, and preparation of technical reports to support environmental impact review. He has extensive experience utilizing a wide range of models, including the use of the WindPro software for analysis of shadow flicker, zone of visual impact (ZVI), wind farm photo simulations, and initial wind resource evaluation. He has also served as a testifying expert witness and has prepared technical documentation in support of testifying expert witnesses.

# **RELEVANT EXPERIENCE (WIND)**

#### ENGIE, Triple H Wind Energy Project, South Dakota

Conducted shadow flicker impact assessment for the proposed wind turbines on surrounding houses using the WindPro software. Assessments incorporated actual meteorological measurements in addition to wind turbine and house geometries to calculate expected shadow flicker impacts in hours per year and for each residential receptor.

#### sPower Seneca Wind, Seneca County Ohio

Responsible for shadow flicker impact assessment and photo simulations to support the Ohio Power Siting Board application using WindPro software. Conservative assessments were completed, using a total of 94 turbine locations in the model, of which only a maximum of 84 would be constructed. Flicker assessments incorporated actual meteorological measurements in addition to wind turbine and house geometries to calculate expected shadow flicker impacts in hours per year for each receptor. Photo simulations used the WindPro Photomontage program to depict the turbines under as-built conditions from multiple viewpoints throughout the project area.

# Horizon Wind Energy, Alabama Ledge Wind Farm and Jericho Rise Wind Farm, New York State

Conducted shadow flicker impact assessment for the proposed wind turbines on surrounding houses using the WindPro software. Assessments incorporated actual meteorological measurements in addition to wind turbine and house geometries to calculate expected shadow flicker impacts in hours per year and hours per day for each receptor. Shadow flicker assessment for Alabama Ledge Wind Farm included onsite survey and model input of potential impact mitigating obstacles.

#### Indeck Wildcat Wind Project, Pratt, Kansas

As project manager, Mr. Guertin provided oversight of comprehensive environmental support related to the proposed 100 MW Indeck Wildcat Wind Energy Project in Pratt County Kansas. A critical issues analysis (CIA) of the proposed project site areas to consider potential fatal flaws and determine applicable permitting requirements was completed. The CIA reviewed baseline conditions for biological resources, cultural resources, wetlands, and land use, as well as a regulatory requirement assessment. Subsequent efforts included managing a number of other studies including: spring and fall avian surveys; bat risk assessment; whooping crane risk assessment; lesser prairie-chicken lek survey; and preparation of Federal Aviation Administration (FAA)

#### **EDUCATION**

MS, Atmospheric Science, University of New York at Albany, 1989

BS, Atmospheric Science, University of New York at Albany, 1986

#### **AREA OF EXPERTISE**

Air Quality Modeling and Permitting

Wind Energy Environmental Assessment

#### **REGISTRATIONS/ AFFILIATIONS**

Environmental Committee, Northeast Energy and Commerce Association

#### TRAINING/CERTIFICATIONS

WindPro Training (EMD) CALPUFF Training (Oris) Notice of Proposed Construction applications for the project turbines.

#### Invenergy, Ledge Wind Energy Center Project, Wisconsin

Conducted shadow flicker impact assessment and prepared photo simulations of the proposed wind farm project using the WindPro software. The shadow flicker assessment incorporated actual meteorological measurements in addition to wind turbine and house geometries to calculate expected shadow flicker impacts in hours per year and hours per day for each receptor. Photo simulations of the proposed wind farm were prepared for several viewpoint locations surrounding the project using the WindPro Photomontage program to depict the turbines under as-built conditions.

#### Horizon Wind Energy, Saddle Mountain Wind Farm, Washington

Conducted shadow flicker impact assessment for the proposed wind turbines on surrounding houses using the WindPro software. Assessments incorporated actual meteorological measurements in addition to wind turbine and house geometries to calculate expected shadow flicker impacts in hours per year and hours per day for each receptor.

#### Thunder Spirit Wind Energy Project, Adams County, North Dakota

Conducted shadow flicker impact assessment for the proposed wind turbines on surrounding houses using the WindPro software. Assessments incorporated actual meteorological measurements in addition to wind turbine and house geometries to calculate expected shadow flicker impacts in hours per year and hours per day for each receptor.

#### Na Pua Makani Wind Energy Project, Oahu, Hawaii

Conducted shadow flicker impact assessment for the proposed wind turbines on surrounding houses using the WindPro software. Assessments incorporated actual meteorological measurements in addition to wind turbine and house geometries to calculate expected shadow flicker impacts in hours per year and hours per day for each receptor.

#### Patriot Renewables, Spruce Mountain Wind Energy Project, Woodstock, Maine

Conducted shadow flicker impact assessment for the proposed wind turbines on surrounding houses using the WindPro software. Assessments incorporated actual meteorological measurements in addition to wind turbine and house geometries to calculate expected shadow flicker impacts in hours per year and hours per day for each receptor.

#### Patriot Renewables, Saddleback Ridge Wind Energy Project, Carthage, Maine

Conducted shadow flicker impact assessment for the proposed wind turbines on surrounding houses using the WindPro software. Assessments incorporated actual meteorological measurements in addition to wind turbine and house geometries to calculate expected shadow flicker impacts in hours per year and hours per day for each receptor.

#### Invenergy, White Oak Wind Farm, Illinois

Conducted shadow flicker impact assessment for the proposed wind turbines on surrounding houses using the WindPro software. Assessments incorporated actual meteorological measurements in addition to wind turbine and house geometries to calculate expected shadow flicker impacts in hours per year and hours per day for each receptor.

#### Iberdrola, Hays Wind Farm, Hays Kansas

Conducted shadow flicker impact assessment for the proposed wind turbines on surrounding houses using the WindPro software. Assessments incorporated actual meteorological measurements in addition to wind turbine and house geometries to calculate expected shadow flicker impacts in hours per year and hours per day for each receptor.

#### Invenergy, Vantage Wind Farm Project, Vantage Washington

Prepared photo simulations of the proposed wind farm for various viewpoint locations surrounding the project using the WindPro Photomontage program.

#### Nextera Energy Resources, LLC, Wind Energy Projects in North Dakota and South Dakota

Conducted shadow flicker impact assessments for several wind energy projects proposed in the states of North Dakota and South Dakota, including Brady I, Brady II, Oliver III, and Wilton IV. Photo simulations of the proposed Dickinson and Brady Wind Farm projects were prepared for several viewpoint locations surrounding the project using the WindPro Photomontage program to depict the turbines under as-built conditions. Also conducted Zone of Visual Impact (ZVI) viewshed analysis for the proposed wind farm using the WindPro ZVI program for the Dickinson Wind Farm.

#### Horizon Wind Energy, Alabama Ledge Wind Farm and Jericho Rise Wind Farm, New York State

Conducted shadow flicker impact assessment for the proposed wind turbines on surrounding houses using the WindPro software. Assessments incorporated actual meteorological measurements in addition to wind turbine and house geometries to calculate worst case and expected shadow flicker impacts in hours per year and hours per day for each receptor. Shadow

flicker assessment for Alabama Ledge Wind Farm included onsite survey and model input of potential impact mitigating obstacles.

#### Horizon Wind Energy, Saddle Mountain Wind Farm, Washington

Conducted shadow flicker impact assessment for the proposed wind turbines on surrounding houses using the WindPro software. Assessments incorporated actual meteorological measurements in addition to wind turbine and house geometries to calculate worst case and expected shadow flicker impacts in hours per year and hours per day for each receptor.

# Invenergy, Hardin Wind Farm, Ohio

Conducted shadow flicker impact assessment for the proposed wind turbines on surrounding houses using the WindPro software. Assessments incorporated actual meteorological measurements in addition to wind turbine and house geometries to calculate expected shadow flicker impacts in hours per year and hours per day for each receptor. Shadow flicker assessment included onsite survey and model input of potential impact mitigating obstacles.

# Capital Power, New Frontier Wind Farm, North Dakota

Conducted shadow flicker impact assessment for the proposed wind turbines on surrounding houses using the WindPro software. Assessments incorporated actual meteorological measurements in addition to wind turbine and house geometries to calculate expected shadow flicker impacts in hours per year and hours per day for each receptor.

# Capital Power, Black Fork Wind Farm Project, Ohio

Prepared photo simulations of the proposed wind farm for various viewpoint locations surrounding the project using the WindPro Photomontage program.

# Westar Energy LLC, Western Plains Wind Farm, Kansas

Conducted shadow flicker impact assessment for the proposed wind turbines on surrounding houses using the WindPro software. Assessments incorporated actual meteorological measurements in addition to wind turbine and house geometries to calculate expected shadow flicker impacts in hours per year and hours per day for each receptor.

#### ENGIE, Solomon Forks Wind Farm, Kansas

Conducted shadow flicker impact assessment for the proposed wind turbines on surrounding houses using the WindPro software. Assessments incorporated actual meteorological measurements in addition to wind turbine and house geometries to calculate expected shadow flicker impacts in hours per year and hours per day for each receptor.

#### Infinity, Live Oak Wind Farm, Texas

Conducted shadow flicker impact assessment for the proposed wind turbines on surrounding houses using the WindPro software. Assessments incorporated actual meteorological measurements in addition to wind turbine and house geometries to calculate expected shadow flicker impacts in hours per year and hours per day for each receptor.

#### Invenergy, Waggoner Wind Farm Project, Texas

Prepared photo simulations of the proposed wind farm for various viewpoint locations surrounding the project using the WindPro Photomontage program.

# ENGIE, Seymour Hills Wind Farm, Texas

Conducted shadow flicker impact assessment for the proposed wind turbines on surrounding houses using the WindPro software. Assessments incorporated actual meteorological measurements in addition to wind turbine and house geometries to calculate expected shadow flicker impacts in hours per year and hours per day for each receptor.