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July 18, 2023

Melanie A. Bachman, Esq.
Executive Director/Staff Attorney
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: Docket No. 516 – The United Illuminating Company Application for a Certificate of Environmental Compatibility and Public Need for the Fairfield to Congress Railroad Transmission Line 115-kV Rebuild Project

Dear Ms. Bachman:

On behalf of The United Illuminating Company (the “Company”), enclosed for filing with the Connecticut Siting Council (“Council”) are the following:

1. The Company’s responses to the Council’s July 11, 2023 interrogatories (Set 2);
2. The Company’s responses to BJ’s Wholesale Club’s July 11, 2023 interrogatories;
3. Affidavit of Brian Ragozzine relating to posting of hearing notice signs; and
4. The Company’s pre-hearing submission.

An original and fifteen (15) copies of this filing will be hand delivered to the Council today.

Should the Council have any questions regarding this filing, please do not hesitate to contact me.

Very truly yours,



Bruce L. McDermott

Enclosure

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Benjamin Cotts, Ph.D., P.E.

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Professional Profile

Dr. Cotts is experienced in both applied and theoretical electromagnetics and plasma physics including modeling and measurement analyses of natural and anthropogenic electromagnetic fields such as space weather, and geomagnetic storms as well as in the initiation, field effects, and characteristics of lightning discharges. Dr. Cotts performs modeling and measurement studies of power system EMF, audible noise, and radio noise including evaluations of 500-kV AC and ± 560 kV DC transmission lines.

Dr. Cotts has further experience in modeling magnetic fields and induced electric fields for offshore wind farms including those from wind turbines, offshore substations and subsea AC and DC transmission lines and is an officer in the IEEE working group for Corona and Field Effects overseeing IEEE standards 644, 430, 656, 1542, 1227, 2746, 1829 and 1308.

Dr. Cotts also performs various types of electromagnetic field evaluations for devices and systems including smart meter mesh networks and government/military communications facilities as well as exposure, EMI or EMC assessments. These assessments are provided for clients such as federal and state agencies, utilities, hospitals, medical-device manufacturers, construction developers, the U.S. military. In addition, Dr. Cotts regularly receives requests to perform exposure assessments for patients with pacemakers, ICDs, and other implantable medical devices and to remediate EMI issues for medical devices and in health care settings.

Dr. Cotts has been a leading figure in coordinating scientific outreach to developing countries through the United Nations International Heliophysical Year (IHY) and International Space Weather Initiative (ISWI) programs and was a founding member of a NASA/UN-sponsored conference series organized and led multiple conferences on atmospheric and space science.

Dr. Cotts's has a decade of experience with the initiation, field effects, and propagation of lightning discharges; combining remote sensing measurements of ionospheric disturbances with numerical modeling of atmospheric, ionospheric, and magnetospheric interactions to determine the role of global lightning on the removal of radiation belt electrons. These radiation belt electrons are a critical factor in space weather for determining the effective lifetime of spacecraft with electronics that can be irreversibly damaged by radiation belt electrons.

Additionally, Dr. Cotts software engineering experience includes the use of Matlab, C, C++, and a variety of other scientific packages including Mathematica and COMSOL. He has experience with auditing software processes and algorithms used during his investigations related to control systems involved in failure events.

Academic Credentials & Professional Honors

Ph.D., Electrical Engineering, Stanford University, 2011

M.S., Electrical Engineering, Stanford University, 2004

B.S., Electrical Engineering, University of Portland, 2002

Outstanding Student Paper Award, AGU Fall Meeting, San Francisco, California, 2004

Tau Beta Pi Engineering Honor Society

Delta Epsilon Sigma, National Scholastic Honor Society

Awarded "2017 IEEE Standards Medallion" For contributions to standards development in power and energy distribution.

Awarded the "2014 Fire Protection Research Foundation Medal" by the NFPA's Fire Protection Research Foundation for the 2013 research project ("Best Practices for Emergency Response to Incidents Involving Electric Vehicles Battery Hazards: A Report on Full-Scale Testing Results") that best exemplified the Foundation's fire safety mission at the National Fire Protection Association's Conference & Exposition, June 2014

Licenses and Certifications

Professional Engineer Electrical, California, #21277

Prior Experience

Post Doctoral Scholar, University of Colorado, Denver, 2011

International Science Outreach Manager, Stanford University, 2007-2011

Research Assistant, Stanford University, 2002-2011

Energy Research Fellow, Stanford Linear Accelerator Center, 2001

Professional Affiliations

Institute of Electrical and Electronics Engineers—IEEE

International Committee on Electromagnetic Safety—ICES

International Council on Large Electric Systems—CIGRÉ

Publications

Peer Reviewed Publications

Gołkowski M, Gross NC, Moore RC, Cotts BRT, Mitchell M. Observation of local and conjugate ionospheric perturbations from individual oceanic lightning flashes. *Geophysical Research Letters* 2014; 41:273-279. doi:10.1002/2013GL058861.

NaitAmor, S, Cohen MB, T. Cotts BR, Ghalila H, AlAbdoaim MA, Graf K. Characteristics of long

recovery early VLF events observed by the North African AWESOME Network. *Journal of Geophysical Research: Space Physics* 2013; 10.1002/jgra.50448

Haldoupis, C, Cohen M, Arnone E, Cotts B, Dietrich S. The VLF fingerprint of elves: Step-like and long-recovery early VLF perturbations caused by powerful \pm CG lightning EM pulses. *Journal of Geophysical Research: Space Physics*, 2013. doi: 10.1002/jgra.50489.

Haldoupis C, Cohen M, Cotts B, Arnone E, Inan U. Long-lasting D-region ionospheric modifications, caused by intense lightning in association with elve and sprite pairs. *Geophysical Research Letters* 2012; 39:L16801. doi:10.1029/2012GL052765.

Salut MM, Abdullah M, Graf KL, Cohen MB, Cotts BRT, Kumar S. Long recovery VLF perturbations associated with lightning discharges. *Journal of Geophysical Research* 2012; 117:A08311. doi:10.1029/2012JA017567.

Cotts BRT, Gołkowski M, Moore RC. Ionospheric effects of whistler waves from rocket-triggered lightning. *Geophysical Research Letters* 2011; 38:L24805. doi:10.1029/2011GL049869.

Cotts BRT, Inan US, Lehtinen NG. Longitudinal dependence of lightning-induced electron precipitation. *Journal of Geophysical Research* 2011; 116:A10206. doi:10.1029/2011JA016581.

Cotts BRT. Global quantification of lightning-induced electron precipitation using very low frequency remote sensing. Doctoral Dissertation, Stanford University, 2011.

Haldoupis C, Amvrosiadi N, Cotts BRT, Van der Velde O, Chanrion O, Neubert T. More evidence for a one-to-one correlation between Sprites and Early VLF perturbations. *Journal of Geophysical Research* 2010, 115:A07304. doi:10.1029/2009JA015165.

NaitAmor S, Al Abdoaim MA, Cohen MB, Cotts BRT, Neubeurt T, Soula S, Chanrion O, Abdelatif T. VLF observations of ionospheric disturbances in association with TLEs from the Eurosprite-2007 Campaign, *Journal of Geophysical Research* 2010; 115:A00E47. doi:10.1029/2009JA015026.

Cotts BRT, Inan US. VLF observation of long ionospheric recovery events. *Geophysical Research Letters* 2007; 34:L14809. doi:10.1029/2007GL030094.

Reports

Snyder DB, Bailey WH, Palmquist K, Cotts BRT, Olsen KR. Evaluation of Potential EMF Effects on Fish Species of Commercial or Recreational Fishing Importance in Southern New England. U.S. Dept. of the Interior, Bureau of Ocean Energy Management, Headquarters, Sterling, VA. OCS Study BOEM 2019-049, August 2019.

Long RT, Blum AF, Bress TJ, Cotts, BRT. Best practices for emergency response to incidents involving electric vehicle battery hazards. Fire Protection Research Foundation Report, 2013.

Other Publications

Cotts, BRT, Graf KL, Bailey, WH. Electromagnetic Interference Considerations for Electrical Power Systems. Ch. 5 in: *The Power Grid: Smart, Secure, Green, and Reliable*. D'Andrade B (ed). Elsevier Ltd., 2017, 137-170.

Cotts, BRT, Prigmore, JR, Graf KL. HVDC Transmission for Renewable Energy Integration. Ch. 6 in: *The Power Grid: Smart, Secure, Green, and Reliable*. D'Andrade B (ed). Elsevier Ltd., 2017, 171-196.

Pooley M, Cotts B, Brennan, III JF. Compatibility of medical devices with electromagnetic and wireless signals. North Carolina Associate of Defense Attorneys The Resource; 2017 Sept.

Phan SK, Stepan J, Cotts BRT. Electrical Conductor Spacing Standards for Printed Circuit Boards. Exponent Electrical Engineering and Computer Science Newsletter. Vol. 4, 2016.

Cotts BRT, Inan US, Lehtinen NG. Theoretical prediction of longitudinal dependence of electron precipitation due to lightning. AGU Fall Meeting, San Francisco, CA, December 14-18, 2009.

Inan US, Cotts BRT, Lehtinen NG. Long recovery early/fast events as possible evidence of persistent ionization by Giant Blue Jets. IUGG, Perugia, Italy, July 2-13, 2007.

Cotts BRT, Inan US, Lehtinen NG. Long recovery early/fast events as possible evidence of persistent ionization by Giant Blue Jets. URSI, Ottawa, Canada, July 22-26, 2007.

Cotts BRT, Inan US. Observation of daytime perturbations of VLF transmitter signals. ICAE, Beijing, China, August 13-17, 2007.

Cotts BRT, Inan US. Daytime early VLF perturbations exhibiting long recoveries and wide-angle scattering. AGU, San Francisco, CA, December 10-14, 2007.

Cotts BRT, Inan US. VLF observation of long ionospheric recovery events. AGU, San Francisco, CA, December 11-15, 2006.

Cotts BRT, Inan US, Pasko VP. Ray tracing techniques applied to sky wave observations of lightning-induced ionospheric effects on short range VLF paths. URSI, Boulder, CO, January 5-8, 2005.

Cotts BRT, Inan US. Ray-based modeling of lightning-induced ionospheric effects on short range VLF skywave signals. AGU, San Francisco, CA, December 5-9, 2005.

Cotts BRT, Inan US. Short range VLF sky wave observations of lightning-induced ionospheric effects. AGU, San Francisco, CA, December 13-17, 2004.

Cotts BRT, Inan US, Golkowski M. Lightning-induced electron precipitation measurements with VLF and the Arecibo Radar. PARS Summer School, Arecibo, PR, August 10-21, 2004.

Cotts BRT, Inan US, Selser E. ELF/VLF near-field imaging of modulated auroral-electrojet currents using a VLF interferometer. PARS Summer School, University of Fairbanks Alaska, August 11-21, 2003.

Cotts BRT, Inan US. Precipitation of energetic electrons by Magnetospherically Reecting (MR) Whistlers. AGU, San Francisco, CA, December 8-12, 2003.

Peer Reviews

Referee for Journal of Geophysical Research – Space Physics

Referee for Radiation Protection Dosimetry

Brian Gaudet
Project Manager
Environmental, Siting and Permitting

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Waterford, CT 06320
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General Background

Mr. Gaudet is a project manager with APT, responsible for managing siting efforts on telecommunication sites, electrical transmission infrastructure, and renewable energy facilities. His experience includes over 16 years of increasingly comprehensive experience, including program, construction, and permitting management; siting, zoning and permitting processes; visibility and aesthetic evaluation; and due diligence and regulatory compliance. For more than 10 years, he has represented clients and provided testimony before local commissions and the Connecticut Siting Council (CSC) on numerous projects. Since joining APT in 2019, he has managed APT's responsibilities within project teams of multiple disciplines, including client representatives, legal counsel, and consultants.

Representative Projects

Visibility and Aesthetic Assessments

Mr. Gaudet is responsible for managing APT's visual evaluation program. Utilizing the combination of predictive computer modeling and in-field analysis, the APT team assesses visibility on both a quantitative and qualitative basis. These assessments include viewshed mapping to identify areas of potential visibility and photographic simulations to demonstrate the character of the development in its setting. Mr. Gaudet is responsible for reporting on and testifying to the visual effects of proposed developments.

Environmental Siting and Permitting Services, State-wide Telecommunications Upgrade Program, CT

Mr. Gaudet served as APT's Project Manager on behalf of the owner's representative in support of a state-wide telecommunications and radio network modernization program, resulting in securing of regulatory approvals for new facility development and existing facility upgrades. He interacted with numerous disciplines across multiple organizations to produce successful CSC submissions.

Historic and Cultural Resource Consultations

Mr. Gaudet manages the coordination and consultations with the Connecticut State Historic Preservation Office (SHPO) for APT's clients that are subject to FCC National Environmental Policy Act (NEPA) requirements, including Section 106 reviews. He has worked closely with the SHPO on sensitive projects to develop solutions that minimize aesthetic concerns while meeting project technical requirements in an effort to obtain determinations of no adverse effect to historic resources. This includes overseeing preliminary cultural resource determinations, formal and informal consultations with SHPO, photo-simulations and viewshed mapping, and site visits with SHPO representatives.

Environmental Siting and Permitting Services, CT

Mr. Gaudet has served as the Project Manager on multiple commercial renewable energy and wireless telecommunications projects. In that role, he has overseen due diligence and feasibility evaluations; coordinated site/civil engineering design support and a variety of environmental due diligence efforts; prepared environmental assessment and compliance documentation; managed visibility assessments; and served as coordination lead in consultations with state agencies.

Environmental Regulatory Management, Wireless Telecommunications, CT

Mr. Gaudet served on behalf of APT as the Program Manager of regulatory compliance for a major wireless service provider in the Connecticut market. He conducted environmental and regulatory reviews to ensure compliance with NEPA requirements for telecommunication facilities, and was responsible for quality assurance for compliance with both federal and corporate regulatory requirements. He served as primary contact for consultations with the SHPO.



DAVID R. GEORGE, M.A, R.P.A.

PRINCIPAL INVESTIGATOR

EDUCATION

Bachelor of Science in Business Management, Ithaca College, Ithaca, New York, 1990.
 Master of Arts in Anthropology, University of Connecticut, Storrs, Connecticut, 1992.
 Introduction to Federal Projects and Historic Preservation Law, Section 106 Compliance, 1999.
 Federal Energy Regulatory Commission, Environmental Report Preparation Seminar, 2003

ACADEMIC AWARDS AND FELLOWSHIPS

Phi Kappa Phi, 1995.
 University of Connecticut Anthropology Department Research Assistantship, 1994.
 University of Connecticut Anthropology Department Teaching Assistantship, 1991- 1994.
 University of Connecticut Anthropology Department Pre-Doctoral Fellowship, 1992.
 University of Connecticut Anthropology Department Lectureship, 1991.

PROFESSIONAL EXPERIENCE

Principal Investigator, Heritage Consultants, LLC, February 2004-Present.
 Vice President-Archeological Services, Goodwin & Associates, Inc., December 2002-March 2004.
 Assistant Vice President, R. Christopher Goodwin & Associates, Inc., May 2001-December 2002.
 Senior Project Manager, R. Christopher Goodwin & Associates, Inc., May 2001-November 2001.
 Project Manager, R. Christopher Goodwin & Associates, Inc., September 1998-May 2001.
 Laboratory Supervisor/Crew Chief, Archaeological and Historical Consultants, Inc., 1996-1998.
 Instructor, Department of Anthropology, University of Connecticut, Storrs, 1995-1996.
 Field Director/Project Manager, Public Archaeology Survey Team, Inc., 1990-1996.
 Field Technician, Office of the Connecticut State Archaeologist, 1990-1996.
 Teaching Assistant, Department of Anthropology, University of Connecticut, 1991, 1994.
 Field Instructor, Department of Anthropology Fieldschool, University of Connecticut, 1992-1994.

PROFESSIONAL MEMBERSHIPS

Society for American Archeology
 Society for Historical Archaeology
 Eastern States Archaeological Federation
 Register of Professional Archeologists

SPECIAL SKILLS

Existing Conditions/Disturbance Investigations
 SHPO/Native American Consultation
 Geographic Information Systems Applications
 Faunal, Botanical, and Lithic Analyses

PROJECT EXPERIENCE

With nearly 30 years of experience, I have completed hundreds of cultural resources investigations throughout the greater New England region.

Westwood

MATTHEW PARKHURST, PE
Transmission Engineering Supervisor
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Overview

Matthew is a professional engineer with 14 years of experience in the transmission and broader electric utility industries, seven of which have been as a consultant. The first seven years of his career were at a large electric utility in the Mid-Atlantic. Matthew has developed a firm understanding of the various aspects of the utility sector and transmission projects in general, both technical and non-technical. As engineering supervisor at Westwood, Matthew leads various project teams to complete large and complex projects on-time and on-budget. Matthew works directly with project managers, engineers, drafters, environmental permitting specialists, real estate specialists, the client's stakeholders, and all sub-consultants to ensure designs incorporate all stakeholder input in order to ensure the best project design possible. Matthew has designed and managed hundreds of miles of transmission line projects between 34.5kV and 500kV. These projects have ranged from OPGW installations, line switch replacements, rebuilds, and new line builds.

Project Experience

115kV Railroad Project, United Illuminating– Technical Project Manager and QA/QC Engineer. Managed the engineering design of approximately 20 miles of a 115kV line relocation project. This project relocated two 115kV circuits from existing bonnets on top of railroad catenary structures to a new double-circuit steel monopole line located in a very narrow swath of right-of-way. One responsibility includes leading a team of three Westwood transmission engineers to ensure project deliverables of submitting on schedule and with a high level of quality. Another responsibility includes the coordination with client stakeholders and managing project sub-consultants ranging from survey to geotechnical and environmental sub-consultants. Responsible for reviewing all drawings and designs before submittal to client.

Rochester Area Reliability Project, RG&E– Engineer. Engineer in charge of the design of one new 345kV line, two new 115kV lines, a relocation of an existing 115kV line, and a cut-in of two 345kV lines to a new substation. This included the design of approximately 350 steel poles and associated foundations. Foundation types included direct embed, vibratory steel caissons, and concrete pier foundations. Unique parts of this project included the design of four 115kV underground riser structures, the design of a solar power lighting system to comply with FAA

requirements, and the coordination with not just the client but also a third-party transmission owner.

230kV Martins Creek Substation Bus Tie Installation, PPL –Engineer. Designed six custom steel 230kV strain bus structures required to support large fault current loads. Developed a tool to calculate short circuit loads per IEEE standards.

230kV Siegfried to East Palmerton and Siegfried to Harwood OPGW Installation, PPL – Engineer. Performed the overhead design of an OPGW installation on an over eight-mile double circuit 230kV line, including the analysis of over 40 lattice towers due to the additional loadings. This project also incorporated the design of eight new steel poles. This design was performed using PLS-CADD, PLS-POLE, and TOWER. A significant amount of coordination was done with the client in terms of constructability, fiber routing, and outage coordination.

138kV Church to Steele Rebuild, Delmarva Power –Engineer. Responsible project engineer for an over 25-mile transmission line rebuild with new steel poles designed for double circuit 230kV. Involved in engineering consultant design and drawing review, development of an issue for construction package, the constructability process, and material procurement. Supported the environmental permitting process along with the Maryland Certificate of Public Convenience and Necessity (CPCN) through the development of written testimony. Ensured all project stakeholders were involved in all project decisions.

69kV N. Salisbury to Worcester Rebuild, Delmarva Power–Engineer. Responsible project engineer for an over 26-mile transmission line rebuild with new steel poles designed for single circuit 69kV. Involved in engineering consultant design and drawing review, development of an issue for construction package, the constructability process, and material procurement. Supported the real estate acquisition and environmental permitting process. Ensured all project stakeholders were involved in all project decisions.

69kV Piney Grove to Wattsville, Delmarva Power–Engineer. Responsible project engineer for an over 30-mile transmission line rebuild with new steel poles designed for double circuit 138kV. Involved in engineering consultant design and drawing review, development of an issue for construction package, the constructability process, and material procurement. Supported the environmental permitting process along with the Maryland CPCN and Virginia CPCN through the development of written testimony. Ensured all project stakeholders were involved in all project decisions.

Various Initiatives Led at Delmarva Power –Engineer. Responsible project engineer for all transmission relocations required due to DOT projects within the State of Delaware. Responsible project engineer for an initiative that led to the replacement of five transmission line switch groups.

Education

University of Delaware, BS Civil Engineering, 2009

University of Delaware, MA Urban Affairs and Public Policy with a Concentration in Energy, Environment, and Equity, 2013

Training and Certifications

Professional Engineer Licensed in Delaware, Pennsylvania, New York, and Connecticut.

Chronology

Westwood Professional Services, October 2019 – Present

Main Line Energy Consultants LLC, July 2016 – October 2019

Pepco Holdings Inc, June 2009 – June 2016