DANSKAMMER ENERGY CENTER

Case No. 18-F-0325

1001.1 Exhibit 1

General Requirements

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Exhibit 1: General Requirements

1(a) Application Requirements

Danskammer Energy, LLC (Danskammer) is proposing to construct a new natural gas fired combined cycle power generation facility, the Danskammer Energy Center (the Danskammer Energy Center or the Project), in the Town of Newburgh, Orange County, New York. The proposed Project will consist of an optimal 536 net megawatt (MW) facility located on land owned by Danskammer.

This Application contains the exhibits as described by Part 1001 as relevant to the Project technology and site and such additional exhibits and information that Danskammer has considered relevant and/or as may be required by the Siting Board or the Presiding Examiner. In instances where an exhibit is not relevant to this particular application, it has been noted. This Application also contains pre-filed testimony in support of each of the Exhibits (Appendix 1-1) and an acronym list for the Exhibits (Appendix 1-2).

1(b) Exhibit Title Pages

Each exhibit herein contains a title page showing:

(1) The Applicant's name,
(2) The title of the exhibit,
(3) The proper designation of the exhibit, and
(4) The Siting Board docket number assigned to the Project: 18-F-0325.

1(c) Formatting

This application has been formatted as follows:

(1) Each exhibit contains a table of contents if it consists of 10 or more pages of text, and
(2) Each exhibit that includes references to supporting documentation (appendices) includes a list of such documents.

1(d) Statistical Comparison

The basis for statistical comparison for data collected, compiled, and reported will be obtained under post-construction monitoring.

1(e) Information in Multiple Exhibits

To avoid duplication, information that is required for more than one exhibit has been supplied in a single exhibit and is referenced in other exhibits where it is also required.

1(f) Applicant Information

The Project's regional location is depicted in Figure 1-1. For more detail regarding the Project's location see Exhibit 3.

(1) Applicant Contact Information

Danskammer Energy, LLC
181 South Plank Road
Newburgh, New York 12550
Email: info@danskammerenergy.com
Telephone: (845) 428-9473

(2) Project Website

The Project specific website address is: https://www.danskammerenergy.com/

(3) Applicant's Primary Public Contacts and Authorized Agents

William Reid
Chief Executive Officer
Danskammer Energy
135 E. 57th Street, 15th Floor
New York, NY 10022
Telephone: (646) 783-3717
Email: wreid@danskammerenergy.com

Michelle Hook
Vice President of Public Affairs
Danskammer Energy
181 South Plank Road
Newburgh, NY 12550
Telephone: (845) 570-0862
Email: mhook@danskammerenergy.com

(4) Applicant Local Office Contact Information

Danskammer Energy, LLC
181 South Plank Road
Newburgh, NY 12550
Email: info@danskammerenergy.com
Telephone: (845) 428-9473

(5) Applicant's Principal Officer

William Reid
Chief Executive Officer
Danskammer Energy
135 E. 57th Street, 15th Floor
New York, NY 10022
Telephone: (646) 783-3717
Email: wreid@danskammerenergy.com

(6) Document Service

Documents and correspondence related to this application should be served on Danskammer's public contacts per the contact information above. In addition, Danskammer requests that documents or other correspondence also be served on the following agents:

Brenda D. Colella
Barclay Damon LLP
Barclay Damon Tower
125 East Jefferson Street
Syracuse, NY 13202
Telephone: (315) 425-2722
Fax: (315) 703-7301
Email: bcolella@barclaydamon.com

Kaitlin McCormick

TRC

Until December 20, 2019:

2801 Wehrle Drive, Suite 8

Williamsville, NY 14221

Telephone: (716) 221-4128

Email: KMccormick@trccompanies.com

After December 20, 2019:

1090 Union Road, Suite 280

West Seneca, NY 14224

Telephone: (716) 221-4128

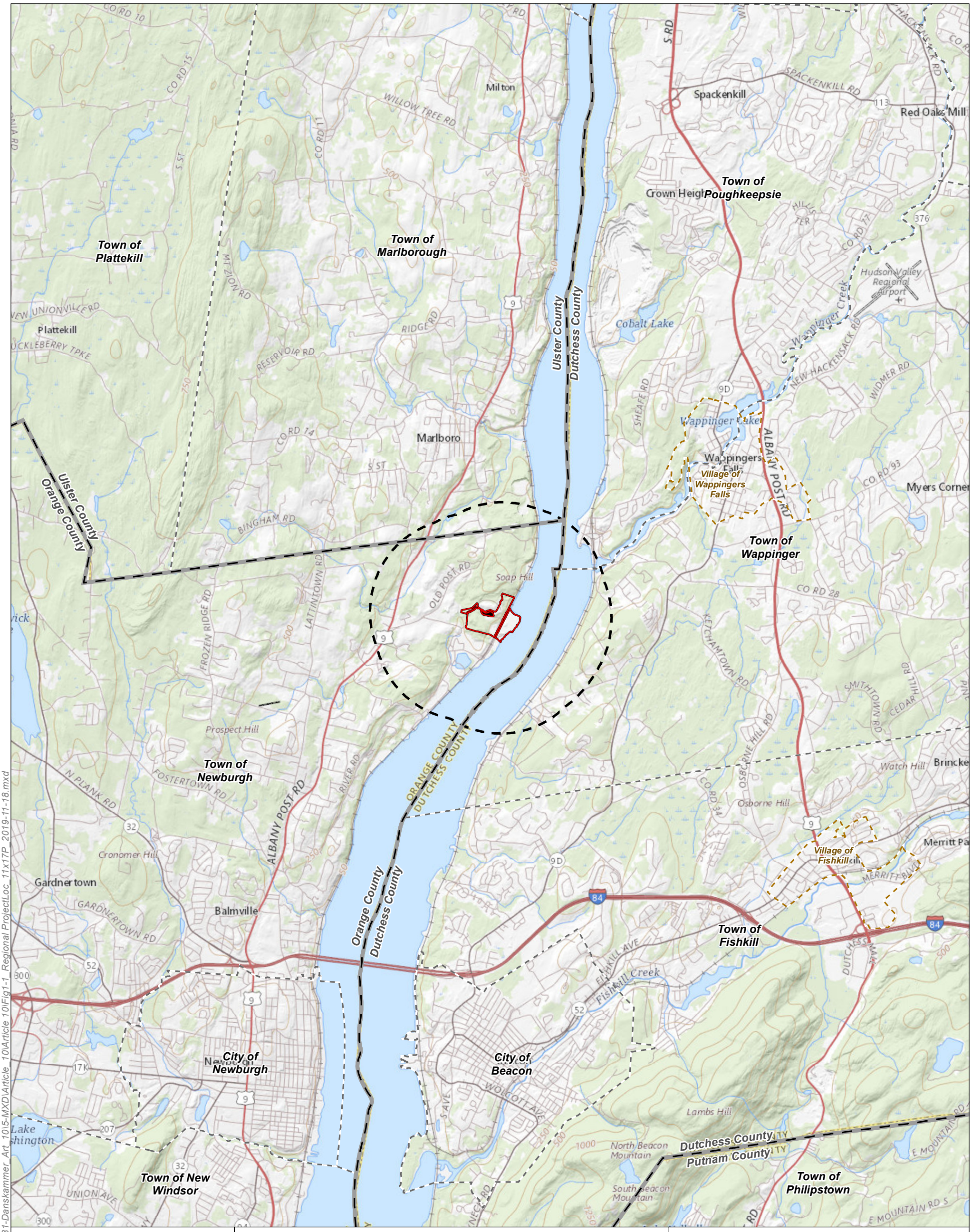
Email: KMccormick@trccompanies.com

(7) Business Description

Danskammer is a Delaware limited liability company that was formed in November 2013 as a special purpose entity to own and operate the existing Danskammer Generating Station. The ownership interests in Danskammer were acquired from Mercuria Energy in December 2017 by Danskammer Holdings, LLC, a Delaware limited liability company formed in September 2017. The principals of Danskammer have invested over $15 billion in energy projects; developed, financed, or constructed approximately 15,000 MW of renewable and conventional power generation facilities; managed over 17,500 MW of power capacity; and are experienced in developing, acquiring, and managing investments in the power sector.

(8) Documents of Formation

The Danskammer Energy Center will be owned by Danskammer. A copy of the Certificate of Formation for Danskammer Energy, LLC is included as Appendix 1-3.



Danskammer Energy, LLC

Danskammer Energy Center

Figure 1-1
Regional Project Location

Town of Newburgh
Orange County, NY

Prepared on 11/20/2019 by TRC

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APPENDIX 1-1

PREFILED TESTIMONY

APPENDIX 1-1: PRE-FILED DIRECT TESTIMONY

Pre-filed direct testimony in support of the Article 10 Application for Danskammer Energy, LLC's Project in the Town of Newburgh, Orange County is presented by witnesses by subject area, as follows:

Witness	Exhibit(s) Sponsored
William Reid and Thomas Gray, Danskammer	Exhibit 1: General Requirements
Michael Keller, TRC; Bill Reid and Michelle Hook, Danskammer	Exhibit 2: Overview and Public Involvement
Kaitlin McCormick, TRC; Jan Garcia, Danskammer	Exhibit 3: Location of Facilities
Kaitlin McCormick, TRC	Exhibit 4: Land Use
John Lagomarsino, Richard Ardolino, POWER Engineers	Exhibit 5: Electric System Effects
Not applicable	Exhibit 6: Wind Power Facilities
John Lagomarsino, James Tengwall, POWER Engineers	Exhibit 7: Natural Gas Power Facilities
Judah Rose, ICF	Exhibit 8: Electric System Production Modeling
Michael Keller, TRC; Howard Taylor, Danskammer	Exhibit 9: Alternatives
Judah Rose, ICF; Thomas Gray, Danskammer	Exhibit 10: Consistency with Energy Planning Objectives
Dennis Morrissey, Jason Philhower, James Tengwall, POWER Engineers; Jan Garcia, Danskammer	Exhibit 11: Preliminary Design Drawings
Kaitlin McCormick and Michael Keller, TRC	Exhibit 12: Construction
John Lagomarsino, POWER Engineers; Thomas Gray, Danskammer	Exhibit 13: Real Property
Bill Louer, George Luciano, POWER Engineers; Howard Taylor, Danskammer	Exhibit 14: Cost of Facilities
Kaitlin McCormick and Michael Keller, TRC	Exhibit 15: Public Health and Safety

Kaitlin McCormick and Michael Keller, TRC	Exhibit 16: Pollution Control Facilities
Darin Ometz, Jay Sarker, and Michael Keller, TRC	Exhibit 17: Air Emissions
Kaitlin McCormick and Michael Keller, TRC; Jan Garcia, Danskammer	Exhibit 18: Safety and Security
David Hessler, Hessler Associates	Exhibit 19: Noise and Vibration
Tim Sara and Matthew Hyland, TRC	Exhibit 20: Cultural Resources
Matthew Korn, Chazen; Kaitlin McCormick, TRC	Exhibit 21: Geology, Seismology and Soils
Weston Hillegas and Kaitlin McCormick, TRC	Exhibit 22: Terrestrial Ecology and Wetlands
Weston Hillegas, Jay Sarker, Kevin Sullivan, Steve Meersma, and Kaitlin McCormick, TRC	Exhibit 23: Water Resources and Aquatic Ecology
Judith Bartos and Theodore Main, TRC	Exhibit 24: Visual Impacts
Brian Dempsey, Provident Design Engineering	Exhibit 25: Effect on Transportation
Kaitlin McCormick, TRC	Exhibit 26: Effect on Communications
Diane Reilly, TRC; Thomas Gray, Danskammer	Exhibit 27: Socioeconomic
Darin Ometz, TRC	Exhibit 28: Environmental Justice
Edward Malley and Kirsten Myers, TRC	Exhibit 29: Site Restoration and Decommissioning
Not applicable	Exhibit 30: Nuclear Facilities
Kaitlin McCormick, TRC	Exhibit 31: Local Laws and Ordinances
Kaitlin McCormick, TRC	Exhibit 32: State Laws and Regulations
Kaitlin McCormick, TRC	Exhibit 33: Other Applications and Filings
Jason Philhower, POWER Engineers; Jan Garcia, Danskammer	Exhibit 34: Electric Interconnection
Jason Philhower, POWER Engineers	Exhibit 35: Electric and Magnetic Fields
James Tengwall, POWER Engineers; Jan Garcia, Danskammer	Exhibit 36: Gas Interconnection

Marie Dowd, Steve Meersma, and Michael Keller, TRC	Exhibit 37: Back-Up Fuel
Kevin Sullivan, Nick Gier, TRC; Clif Crosman, POWER Engineers	Exhibit 38: Water Interconnection
Kevin Sullivan, Nick Gier, TRC; Cliff Crosman, POWER Engineers	Exhibit 39: Wastewater Interconnection
Kaitlin McCormick, TRC	Exhibit 40: Telecommunications Interconnection
Not applicable	Exhibit 41: Applications to Modify or Build Adjacent

BEFORE THE
NEW YORK STATE
SITING BOARD ON ELECTRIC GENERATION SITING
AND THE ENVIRONMENT

Application of Danskammer Energy, LLC for a Certificate of Environmental Compatibility and Public Need Pursuant to Article 10 for Approval to Repower its Danskammer Generating Station Site Located in the Town of Newburgh, Orange County	)	Case No.: 18-F-0325

PRE-FILED TESTIMONY OF RICHARD ARDOLINO

ON BEHALF OF

DANSKAMMER ENERGY, LLC

Q. Please state your name, employer, position and business address.

A. My name is Richard Ardolino. I am currently employed by POWER Engineers, Inc (POWER) as a Senior Project Engineer. My business address is 800 Kinderkamack Road, Oradell, New Jersey, 07649.

Q. How long have you been employed with POWER?

A. I have been employed at POWER since July 2016. My previous employment history is provided on my attached resume.

Q. On whose behalf are you testifying?

A. I am testifying on behalf of Danskammer Energy, LLC ("Danskammer" or "the Applicant").

Q. Please describe your educational background and professional experience.

I have a Master of Science from New York University Polytechnic University in Electrical Engineering and a Bachelor of Science degree from Manhattan College in Electrical Engineering. My experience includes project/construction management, substation upgrades, gas-insulated switchgear, transmission system upgrades, electric systems operations, electrical interconnections, electrical commissioning, vendor surveillance, and operations and maintenance. I have been employed as an Electrical Engineer since 1973. From 1977 to 2008, I had progressive responsibilities at the New York Power Authority, including Vice-President of Engineering, during which time I had eight direct reports and managed a team of 80 engineers in a variety of engineering disciplines. Further details concerning my professional experience are set forth on the attached resume.

Q. Please describe your current responsibilities with POWER.

As a Senior Project Engineer, with Power Engineers, my responsibilities are as follows:

- Prepare electrical one-line diagrams, including protective relaying and substation designs;
- Perform constructability review for substation construction;
- Prepare and review testing and commissioning plans;
- Prepare outage sequencing plans for construction;
- Perform QA/QC on work prepared by others; and
- Work with developers on new transmission and generation projects.

I am certified by the States of New York, New Jersey, Washington D.C., Florida, and Pennsylvania as a Professional Engineer (PE).

Q. Have you testified in other proceedings before the New York State Public Service Commission or Siting Board on Electric Generation?

A. No.

Q. Have you previously served as an expert witness before any other court, agency, or other body on the subject you plan to offer testimony on today?

A. No.

Q. What is the purpose and scope of your testimony in this proceeding?

A. As the Electrical/Power Delivery Specialist, I am responsible for the review of the New York Independent System Operator (NYISO) interconnection studies and the conceptual design of the electrical interconnection of the project to the grid.

Q. What portion(s) of the Application is your testimony sponsoring?

A. I am a member of the Panel sponsoring the following Exhibits of Danskammer's Article 10 Application: Exhibit 5.

Q. Were these portion(s) of the Application mentioned in the paragraph above prepared by you or under your direction and supervision?

A. Yes.

Q. In your testimony, will you refer to, or otherwise rely upon, any studies, publications, data or documents produced by persons other than yourself/your company? If so, please cite these sources.

A. Yes, the references are included in Exhibit 5.

Q. Does this complete your testimony?

A. Yes.

Richard J. Ardolino, P.E.

2575 Ridge Street, Yorktown Heights, NY 10598 RArdolinoPE@verizon.net / Mobile: 646 306 2626

Professional Licenses

Professional Engineer: New York, New Jersey, Florida, Pennsylvania, and Washington DC

Experience

Power Engineers, Oradell, NJ July 2016 – Present

Senior Project Engineer, Power Delivery

- Prepare electrical one-line diagrams, including protective relaying and substation designs.
- Perform constructability review for substation construction.
- Prepare and review testing and commissioning plans.
- Prepare outage sequencing plans for construction.
- Perform QA/QC on work prepared by others.
- PEPCO**,** New Harvard and Mt. Vernon 230/13 kilovolt (kV) Substations**.** Project Engineer for two new substations with a 230kV gas insulated switchgear (GIS) and 13-kV distribution feeders.
- PPL, Engineer of Record**.** Project Engineer for the upgrade and expansion of two 230-kV and 69-kV substations.

Kleinfelder, Fishkill, NY August 2015– July 2016

Senior Principal, Transmission and Distribution

- Focus on delivering profitable T&D design/engineering projects for existing (Central Hudson and Orange Rockland), and new clients.
- Manage, develop, and recruit the T&D staff.
- Develop conceptual layout drawings, review work of team, and Professional Seal as required.

AECOM, New York, NY August 2008 - August 2015

Vice President, Transmission and Distribution

- Prepared Scope of Work and bid estimates in response to Request for Proposals; attended pre-bid and post-bid meetings with clients.
- Project Director for the Project Management, Project Controls, Scheduling, Engineering, Design and Construction for the $1 Billion upgrade of twelve Public Service Electric & Gas substations from 138 kV to 230 kV, the project consisted of:
  - the upgrade of 26 miles of double circuit138-kV transmission to 230 kV,
  - design and installation of 29 miles of 345-kV operated at 230-kV pipe-type cable,
  - the replacement of disconnect switches, circuit breakers, transformers relay protection, and batteries,
  - structural analysis of the towers,
  - the design and specification of GIS, and
  - grounding studies, lightning studies, short circuit studies, and bus-sizing calculations.
- Project Engineering Manager for the conceptual design to upgrade Public Service Electric & Gas 138-kV transmission system to 230 kV, including:
  - preparation of conceptual substation dimensioned plan and profile drawings for the upgrade,
  - preparation of plan and profile drawings using PLS CADD and conductor sizing calculations for the transmission line, and
  - review of existing transmission line structures for adequacy and made recommendations on transmission tower type replacements for the upgrade.
- Project Engineering Director for the engineering and design for the upgrade of four Public Service Electric & Gas substations from 138 kV to 230 kV.
- Project Engineering Manager for the development of the Atlantic City Offshore Wind project, including
  - review of Pennsylvania, Jersey, Maryland interconnection requirements for interconnecting the wind turbines to the on-shore substation.
- Prepared and submitted Electrical Interconnection Applications to the applicable Electrical System Operator for the interconnection of new generation to the electric grid.

- Program Manager on a wind farm project in Western New York; responsible for scheduling, budgeting, construction management, and commissioning for the 230-kV substations and substation interconnections.
- Prepared electrical one-line diagrams, including protective relaying and preliminary substation and transmission line designs for new project development.

Tech Serv – a Division of Welsbach Electric Corp an EMCOR Company, New York, NY May 2008 - August 2008
Vice President, Electrical Testing

- Supervised Local #3 electricians in the testing of Relay Protection systems at New York City Department of Environmental Protection Facilities.
- Prepared estimates for the testing of switchgear, cable, relaying systems, and controls to obtain new business.
- Supervised emergency repair of cable and switchgear at various facilities throughout New York City.

New York Power Authority (NYPA), New York, NY July 1977 - April 2008
Vice President, Engineering

- Managed eight direct reports with a team of 80 engineers *(Mechanical, Electrical, Fire protection, Civil, Relay Protection & Control, Supervisory Control and Data Acquisition, Design & Drafting and Security)*.
- Managed the Federal Regulatory Energy Commission compliance requirements.
- Managed the North American Electric Reliability Corporation compliance requirements.
- Performed pre-feasibility and feasibility studies, analysis, and evaluations for proposed modifications and new facilities, including cost benefit analysis of the proposed modifications and new facilities.
- Performed engineering support by providing technical specifications, qualified bidders lists, bid evaluations, and recommendations for awards to project management.
- Provided engineering support during construction and start-up including testing procedures.
- Coordinated and reviewed outside engineering and design services performed by architects/engineers/construction firms; ensured all designs followed the National Electrical Code, ANSI/IEEE standards, UL and NEMA standards.
- Developed the New York Power Authority's document titled *"Requirements for the Electrical Interconnection to the NYPA Transmission System."*

Principal Engineer

- Program Manager of In-City Combined-Cycle and Transmission Project; responsible for the design of the interconnecting 138kV substations, including:
  - the design of 7 138kV substations at the Gas turbine sites,
  - modification of 4 Con Edison substations and 1 LIPA substation,
  - the 138 kV xlpe cable routing and all associated substation and feeder relay protection,
  - approval to hold work permits on the Con Edison system, and
  - commissioning of all substation equipment.
- Negotiated and wrote Interconnection and Operating agreements for existing and new NYPA facilities.
- Project Manager of the Authority's Robert Moses Niagara Power Project Capital Improvement Initiative, including:
  - Robert Moses Niagara Power Project Main Generating Plant Upgrade project, and
  - 9-11 Security Initiatives.

Managing Electrical Engineer

- Provided administration and technical management of the Electrical Engineering section: Power System Equipment; System Studies; Protection and Control; and Metering.
- Reviewed and checked electrical power system calculations, including short circuit, load flow, relay coordination, and equipment sizing calculations.
- Prepared specifications for equipment procurement, installation, and start-up testing.
- Approved diagrams, drawings, calculations, studies, and specifications.

Director Power Systems Equipment

- Directed engineers, whose responsibilities were to develop, implement, and assess operations, maintenance, and in-service inspection policies and standards for the power plants and transmission system.
- Directed the engineering, design, procurement, installation, and testing for substations and power plant modifications or new construction.
- Electrical engineering, design, specification, and procurement for the expansion of the Adirondack substation, including115-kV circuit breakers, 230/115-kV transformer, and current limiting reactors.
- Engineering review, equipment selection, and commissioning of a 345-kV pipe type and self-contained cable system interconnection between Con Edison and Long Island Lighting (Y49).
- Developed and maintained generic equipment specifications and design standards for transformers, circuit breakers, switchgear, etc. in accordance with the National Electrical Code, ANSI/IEEE standards, and UL and NEMA standards.
- Designed distribution circuits at 4 kV and 13 kV for the New York State Department of Transportation.

Director Operations and Maintenance – System Operations

- Directed a team of Mechanical, Electrical and Civil engineers, whose overall responsibility was to optimize and coordinate the operations and maintenance of NYPA's Hydro, Fossil, Transmission, and Substation facilities.
- Provided technical evaluation and review of cost estimates for procurement documents.
- Project Manager for the interconnection of NYPA's Small Hydroelectric facilities with NYC DEP, Con Edison, Central Hudson, and Niagara Mohawk.
- Specified and purchased new 230/115-kV transformers for the Willis Substation.
- Coordinated the interfaces for the 345-kV Marcy South Transmission Project with the respective utilities.
- Chaired the Operations and Maintenance team that provided design review and commissioning for the 345-kV Marcy South Transmission project.
- Coordinated and supervised NYPA's Transmission Line crews on Long Island in response to Hurricane Gloria.

Senior Operations Engineer – System Operations

- Directed a group of Mechanical, Electrical and Communications engineers, whose overall responsibility was to optimize and coordinate the operations and maintenance of NYPA's Hydro, Fossil, Transmission, and substation facilities.
- Provided specialized technical support, undertaking design, procurement, and installation of specialized projects.
- Supervised IBEW workforce as required.

Operations Engineer – System Operations

- Oversaw, reviewed, and coordinated the operations and maintenance activities within NYPA's electric generating and transmission system.
- Wrote the Electrical Switching and Tagging coordination document between Indian Point #3 and Con Edison.
- Supervised the start-up testing of the EHV equipment for NYPA's Marcy 765-kV transmission line project.
- Prepared functional purchase specifications for the implementation or modification of substation monitoring, control, operation, maintenance, and instrumentation systems.

Long Island Lighting Company, New York, NY May 1973 - June 1977
Electrical Engineer – Substation Maintenance

- Supervised IBEW workforce.
- Perform evaluation of equipment failures, inspection of new equipment, trouble-shooting problems in the areas of electrical substation construction and operations.

International Brotherhood of Electrical Workers/Local #3, New York, NY
Electrical Apprentice during College

Education

NYU Poly University, Master of Science, Electrical Engineering (Power)

Manhattan College, Bachelor of Science, Electrical Engineering

BEFORE THE
NEW YORK STATE
SITING BOARD ON ELECTRIC GENERATION SITING
AND THE ENVIRONMENT

Application of Danskammer Energy, LLC for a Certificate of Environmental Compatibility and Public Need Pursuant to Article 10 for Approval to Repower its Danskammer Generating Station Site Located in the Town of Newburgh, Orange County	)	Case No.: 18-F-0325

PRE-FILED TESTIMONY OF CLIFF CROSMAN

ON BEHALF OF

DANSKAMMER ENERGY, LLC

Q. Please state your name, employer, position and business address.

A. My name is Cliff Crosman. I am currently employed by POWER Engineers, Inc. (POWER) as a Water/Wastewater Treatment Specialist. My business address is 800 Kinderkamack Road, Oradell, New Jersey, 07649.

Q. How long have you been employed with POWER?

A. I have been employed at POWER since they acquired Burns and Roe Enterprises, Inc. in 2014, where I was employed since July 1994.

Q. On whose behalf are you testifying?

A. I am testifying on behalf of Danskammer Energy, LLC ("Danskammer" or "the Applicant").

Q. Please describe your educational background and professional experience.

I received a Bachelor of Chemical Engineering degree from The Cooper Union in May 1973. Since then, I have provided engineering and design of water and wastewater treatment systems both for manufacturers of water and wastewater treatment systems and for architectural engineering companies. My experience has been primarily related to power generation facilities, but also includes other industrial facilities such as oil refineries. A copy of my resume further detailing my educational background and professional experience is attached.

Q. Please describe your current responsibilities with Power Engineers.

A. As a Water/Wastewater Treatment Specialist, my responsibilities include the conceptual and detailed design of water and wastewater treatment systems for power generation facilities. I prepare the water balance during the conceptual design phase, which defines how much water will be used in a plant and how much will be discharged, as well as

defining the quality of wastewater discharge for environmental permitting. In the detailed design phase, I provide engineering of pre-treatment, demineralization, condensate polishing, wastewater treatment, and chemical feed systems. I am certified by the State of New York as a Professional Engineer (PE). Since joining POWER, I have worked with environmental consultants, owners, developers, and constructors of power generation facilities.

Q. Have you testified in other proceedings before the New York State Public Service Commission or Siting Board on Electric Generation?

A. No.

Q. Have you previously served as an expert witness before any other court, agency, or other body on the subject you plan to offer testimony on today?

A. Yes. I served as an expert witness before the Connecticut Siting Council related to the permitting of the Towantic Energy Center in Oxford, CT.

Q. What is the purpose and scope of your testimony in this proceeding?

A. As the Water/Wastewater Treatment Specialist, I am responsible for the plant water balance and conceptual design of water and wastewater treatment systems.

Q. What portion(s) of the Application is your testimony sponsoring?

A. I am a member of the Panel sponsoring the following Exhibits of Danskammer's Article 10 Application: Exhibits 38 and 39.

Q. Were these portion(s) of the Application mentioned in the paragraph above prepared by you or under your direction and supervision?

A. Yes, I contributed to the preparation of these exhibits.

Q. In your testimony, will you refer to, or otherwise rely upon, any studies, publications, data or documents produced by persons other than yourself/your company? If so, please cite these sources.

A. References are provided in the above-referenced Exhibits.

Q. Does this complete your testimony?

A. Yes.

CLIFF CROSMAN, P.E.

CONSULTING ENGINEER - WATER TREATMENT

AREAS OF EXPERTISE

- Water and Wastewater Treatment
- Power Plant Cycle Chemistry

YEARS OF EXPERIENCE

- 45

LICENSE

- Professional Engineer - New York State

EDUCATION

- Bachelor of Chemical Engineering - The Cooper Union, New York, NY

EXPERIENCE SUMMARY

Mr. Crosman has provided engineering and design of water and wastewater treatment systems for power generation and other industrial facilities throughout his 45 years of experience. From 1994 to 2017, he was responsible for all water and wastewater treatment systems at Power Engineers. He has provided conceptual engineering and design of many facilities including water balances and support of environmental permitting for wastewater discharge. He has also provided detailed engineering and design of many facilities including pretreatment, demineralization, condensate polishing, wastewater treatment, and chemical feed systems.

From 1991 to 1994, Mr. Crosman was employed as a water treatment specialist at Stone & Webster in New York City. From 1973 to 1991, he worked for water treatment system suppliers such as Graver Water, Memtec America, and Cochrane Environmental Systems.

Specific project experience at Power Engineers includes the following:

Diamond Generating Corp, North Bergen Liberty 1200-Megawatt (MW) Combined-Cycle Power Plant, North Bergen, NJ

Provided conceptual engineering and design including the facility water balance. Included in the design are granular filters for secondary effluent from a municipal wastewater treatment facility and a demineralization system with membrane filtration, reverse osmosis, and electrodeionization.

Development Partners Inc, Marshall Energy Center 500-MW Combined-Cycle Power Plant, Marshall, MI

Provided conceptual engineering and design including the facility water balance and definition of wastewater quality for environmental permitting.

General Electric Energy and Financial Services, Shady Hills Energy Center 600-MW Combined-Cycle Power Plant, Spring Hill, FL

Provided conceptual engineering and design including the facility water balance. Makeup water to the facility will be treated effluent from a sewage treatment plant and the facility is designed for zero liquid discharge. The treatment systems include lime softening, membrane filtration, reverse osmosis, and a crystallizer.

Gemma Power Systems, 829-MW Liberty Combined-Cycle Generation Plant, Towanda, PA

Provided detailed engineering and design for the water and wastewater treatment systems in an 829-MW combined-cycle power plant. The water treatment system included membrane filtration, reverse osmosis, and

electrodeionization. The near zero liquid discharge wastewater treatment system also included membrane filtration and reverse osmosis.

Gemma Power Systems, 829-MW Patriot Generation Plant, Clinton Township, PA

Provided detailed engineering and design for the water and wastewater treatment systems in an 829-MW combined-cycle power plant. The water treatment system included membrane filtration, reverse osmosis, and electrodeionization. The near zero liquid discharge wastewater treatment system also included membrane filtration and reverse osmosis.

Bechtel Jacobs Company, 150-MW Motiva Crude Expansion Power Station 4, Port Arthur, TX

Provided detailed engineering and design of a 7,000 gallon-per-minute packed bed ion exchange makeup demineralizer system, a 1,850 gallon-per-minute condensate polishing system, and boiler and cooling water chemical feed systems for new electric power and steam generation facilities within the refinery.

General Electric Corp., Huaneng Power Development Corp., DeZhou 5 and 6 600-MW Coal Fired Power Plants, DeZou City, China

Provided detailed engineering and design of condensate polishing, cycle chemical feed, and steam/water sampling systems.

Calpine Corporation, 1038-MW Greenfield Energy Center Combined-Cycle Project, St. Clair, Ontario, Canada

Provided engineering and design of 360 gallon per minute packed bed ion exchange type makeup demineralizer system, a 720 gallon per minute wastewater treatment system, and chemical feed systems.

Lansing Board of Water & Light, 110-MW REO Town Cogeneration Power Plant, Lansing, Michigan

Provided detailed engineering and design of a 600 gallon per minute two-pass reverse osmosis makeup demineralization system, a 600 gallon per minute off-site regenerated condensate polishing system, and boiler and cooling water chemical feed systems for a new 100-MW combined-cycle electric power and steam generation plant with once through heat recovery steam generators. Prepared the water balance that was used to obtain a wastewater discharge permit.

Paiton Energy, 2 x 615 MW Paiton Units 7 & 8 Coal-Fired Generating Units Independent Power Project, Probolingo, East Java, Indonesia

Provided conceptual engineering and design for sea water desalination, makeup demineralization, condensate polishing, and wastewater treatment systems.

Gulf Electric Company, Limited, 2 x 734 MW Kaeng Khoi 2 Gas-

Fired Power Project, Sara Buri Province, Thailand

Provided conceptual engineering and design for river water pretreatment, makeup demineralization, boiler and cooling water chemical feed, and wastewater treatment systems.

CPS Energy, 200-MW Braunig Peaking Simple Cycle Project, San Antonio, TX

Provided conceptual engineering for water and wastewater treatment systems to serve new peaking combustion turbines and existing power generation units.

Bayonne Energy Center, 512-MW Bayonne Simple Cycle Plant, Bayonne, New Jersey

Provided detailed engineering and design for an 800 gallon per minute demineralized water treatment system including membrane filtration, reverse osmosis, and electrodeionization. Demineralized water is injected into combustion turbines.

Louisiana Energy and Power Authority, 64 MW Combined Cycle Project, Morgan City, Louisiana

Provided conceptual engineering and design including the facility water balance. Included in the design were granular filters for secondary effluent from a municipal wastewater treatment facility and a demineralization system with membrane filtration, reverse osmosis, and electrodeionization.

Covanta Energy, Lee County Waste-to-Energy Facility, Ft. Myers, FL

Provided detailed engineering and design for the expansion and improvement of a zero liquid discharge wastewater treatment system, including ultra filtration and reverse osmosis.

Calpine Corporation, York Energy Center Expansion 760-MW Combined-Cycle Power Plant, Peach Bottom Township, PA

Provided conceptual engineering and design including facility water balance.

BEFORE THE
NEW YORK STATE
SITING BOARD ON ELECTRIC GENERATION SITING
AND THE ENVIRONMENT

Application of Danskammer Energy, LLC for a Certificate of Environmental Compatibility and Public Need Pursuant to Article 10 for Approval to Repower its Danskammer Generating Station Site Located in the Town of Newburgh, Orange County	Case No.: 18-F-0325

PRE-FILED TESTIMONY OF JUDITH BARTOS

ON BEHALF OF

DANSKAMMER ENERGY, LLC

Q. Please state your name, employer, position and business address.

A. My name is Judy Bartos. I am currently employed by TRC as a Senior GIS Analyst and Environmental Scientist. My business address is 650 Suffolk Street, Wannalancit Mills, Lowell, MA 01854.

Q. How long have you been employed with TRC?

A. I have been employed at TRC since April 1999.

Q. On whose behalf are you testifying?

A. I am testifying on behalf of Danskammer Energy, LLC ("Danskammer" or "the Applicant").

Q. Please describe your educational background and professional experience.

I have a Bachelor of Science and a Masters of Soil Science from the University of Massachusetts in Amherst. I also have a Bachelor of Fine Arts degree with a minor in art history. My related technical and practical experience includes working 23 years in the environmental field primarily on energy-related projects. At TRC I have served in the capacity as Senior GIS Analyst for 19 years. For the last 14 years, I have provided both the written reports and performed the technical analyses necessary for visual impact assessments for numerous projects nationwide. I have completed several courses offered by ESRI, the leading vendor for GIS mapping software products. I have also participated in one-on-one training in the use of Autodesk 3DS Max visualization software, specifically for use in photosimulations. A copy of my resume/curriculum vitae/bio is attached.

Q. Please describe your current responsibilities with TRC.

A. As Senior GIS Analyst, my responsibilities include working with several GIS software packages and 3-dimensional visualization programs to provide GIS analyses and visual

impact assessments. I am responsible for performing and/or overseeing the technical and written work of visual assessments, providing expert testimony, supervising junior staff, and providing project guidance for relevant tasks. Since joining TRC, I have worked with various federal, state and local agencies, private developers, utilities, and stakeholders primarily in NY, MA, VT, ME, PA, and WV.

Q. Have you testified in other proceedings before the New York State Public Service Commission or Siting Board on Electric Generation?

A. I have not provided a formal oral testimony for the New York Public Service Commission or Siting Board. I have provided written pre-trial and rebuttal testimony for the Eight Point Wind Energy Center, Case No. 16-F-0062. I also guided a site tour in March 2019 for the adjudicatory judges in preparation for the Eight Point Wind evidentiary hearing.

Q. Have you previously served as an expert witness before any other court, agency, or other body on the subject you plan to offer testimony on today?

A. Yes. I have testified before the Public Service Commission of West Virginia and the Energy Facility Siting Board in Massachusetts. I have also provided written testimony to the Vermont Public Service Board.

Q. What is the purpose and scope of your testimony in this proceeding?

A. As the author of the visual impact assessment for Danskammer Energy Center, I am responsible for Exhibit 24.

Q. What portion(s) of the Application is your testimony sponsoring?

A. I am sponsoring the following Exhibits of Danskammer's Article 10 Applications: Exhibit #24 and accompanying Visual Impact Assessment Report.

Q. Were these portion(s) of the Application mentioned in the paragraph above prepared by you or under your direction and supervision?

A. Yes.

Q. In your testimony, will you refer to, or otherwise rely upon, any studies, publications, data or documents produced by persons other than yourself/your company? If so, please cite these sources.

A. References are provided in the relevant Exhibit 24 and Visual Impact Assessment Report.

Q. Does this complete your testimony?

A. Yes.

Judith Bartos

Visual Simulation Expert

CREDENTIALS

Education:

- M.S., Soil Science, University of Massachusetts, Amherst, 1994
- B.S., Plant and Soil Sciences, University of Massachusetts, 1989
- BFA, Printmaking, University of Massachusetts, 1986

Judith Bartos has 23 years of experience and progressive responsibility that includes various nationwide state and federal environmental permitting efforts and siting studies. She currently manages and provides a full range of computerized visualization services for qualitative and quantitative visual impact assessments. Other experience includes former academic research.

EXPERIENCE

Professional Summary:

- 23 years of environmental permitting experience
- 19 years of GIS experience
- 14 years of producing robust visual impact assessments
- Experience with Article X (2000 to 2003) and Article 10 (2012 to present)
- 9 years of experience in academic environmental research
- Former visual arts degree and experience prior to 1987

Areas of Expertise:

- GIS ESRI v10.7 ArcMap/Spatial Analyst/3D Analyst; ArcServer/sde Geodatabase; 3DS Max 2016; ArcGISPro v 2.4, Global Mapper; Infraworks, Visual Nature Studio 3; AutoCad.
- Three-Dimensional Modeling, Photosimulation, Viewshed Analysis, Line-of-Sight, LiDAR, Advanced Terrain Analysis, Linear Referencing, Shadow Study.
- Visual Impact Assessments.
- Expert Testimony for Visual Impact Assessments and Photosimulations.
- Wind Farm, Solar, and non-renewable Generating Facility siting studies.
- Soils, Glacial Geology, Hydrology, Landform Interpretation, Ecology, Forest Community Assessment, Stream Characterization, Wildlife Habitat Assessment, Census demographics, Environmental Justice: raster and vector data analysis with occasional use of external relational and non-relational databases.
- Tailoring natural gas pipeline engineering information to state and federal permitting applications.
- Previously have written Resource Reports for FERC applications as well as final GIS analysis and cartography.

PROJECT EXPERIENCE

Danskammer Energy Project – Newburgh, NY (Sr. GIS Systems Analyst: 2018 - present)

Danskammer Energy is proposing to repower its existing Danskammer Generating Station located in the Town of Newburgh, Orange County, New York along the Hudson River with a state-of-the-art natural gas fired combined cycle power generation facility with a net capacity of approximately 536 megawatts (MW). Ms. Bartos is responsible for the production and oversight of a Visual Impact Assessment and Article 10 Exhibit 24 pursuant to 16 New York Codes, Rules and Regulations (NYCRR) section 1001.24.

FPS Coxsackie Solar Project – Coxsackie, NY (Sr. GIS Systems Analyst: 2018 - present)

The proposed solar facility will generate up to 5 MW of power on a 68-acre site in Coxsackie, NY. Visual and aesthetic impacts were assessed out to a 5-mile radius under the NY SEQR process. Viewshed analysis using LiDAR data was performed and photosimulations were produced. Simulations also showed proposed vegetative mitigation at planting time and at 5 years based on proposed project landscaping.

Confidential Client Solar Development – Upstate NY (Sr. GIS Systems Analyst: 2017 - present)

The client is currently submitting applications to construct six Article 10 solar facilities exceeding 25 MW in upstate NY. Ms. Bartos is responsible for the production and oversight of Visual Impact Assessments and Exhibit 24 for all six facilities pursuant to 16 NYCRR section 1001.24.

PROJECT EXPERIENCE (continued)

National Grid Gardenville, Dunkirk 141-142 115kV Transmission Line North Angola to Gardenville Rebuild & Reconductor Project – Erie County NY (Sr. GIS Systems Analyst: 2017 – present)

Under the NY Article VII process, the Applicant is reconstructing two existing 115-kilovolt (kV) transmission lines, approximately 20.45 miles (of 44.87 miles) of the Gardenville – Dunkirk 141 & 142 line in Erie County, NY. Ms. Bartos provided several viewshed analyses

comparing a visual change detection between the existing line and two proposed structure types (triple circuit vs. double circuit). Simulations showing various structure types and alignment options for comparison have been provided.

Eversource West Roxbury to Needham Transmission Reliability Project – MA (Sr. GIS Systems Analyst: 2016 – 2017)

Ms. Bartos provided Visualization Services and expert testimony to the Massachusetts Energy Facilities Siting Board (EFSB) regarding the proposed new build electric transmission line for the West Roxbury to Needham Reliability Project. The project is a new transmission line build traversing through the Towns of Needham, Dedham, and Boston (West Roxbury) along an existing aboveground transmission. The work provided was in response to an EFSB Information Data Request dated December 8, 2016. Comparative viewshed analyses and photosimulations were provided. The project was high profile and contentious.

Eversource Sudbury to Hudson Transmission Reliability Project – MA (Sr. GIS Systems Analyst: 2016 – 2017)

Ms. Bartos performed and prepared a Visual Impact Assessment in support for a petition to the EFSB pursuant to Massachusetts General Laws c. 164, section 69J for authority to construct, operate, and maintain an approximately 9-mile 115-kv transmission line from Eversource's Sudbury Substation on Boston Post Road in Sudbury to Hudson Light & Power Department's substation at Forest Avenue in Hudson. Ms. Bartos provided a visual impact assessment that included a viewshed analysis to assess impacts at a regional landscape level as well as producing photosimulations. The project was high profile and contentious.

Eight Point Wind Energy Center – Steuben County, NY (Sr. GIS Systems Analyst: 2016 – 2019)

The Eight Point Wind Project received its Article 10 Certificate in August 2019. This project will install up 34 commercial-scale wind turbines in addition to a collection substation and a 16-mile overhead 115-kv transmission line. Ms. Bartos produced a combined Visual Impact Assessment for the project that was conducted according to the requirements in 16 NYCRR section 1001.24 to be included as Exhibit 24 in an Article 10 application. The NYSDEC Program Policy "Assessing and Mitigating Visual Impacts" was used in order to comply with NYSPSC requirements and Article VII process for the transmission part of the project. Ms. Bartos also provided testimony for this project and guided judges and examiners during an on-site visit to discuss visual simulations and other Project concerns.

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PRE-FILED TESTIMONY OF BRIAN E. DEMPSEY, P.E., PTOE

ON BEHALF OF

DANSKAMMER ENERGY, LLC

Q. Please state your name, employer, position and business address.

A. My name is Brian E. Dempsey, P.E., PTOE. I am currently employed by Provident Design Engineering as a Partner/Senior Project Manager. My business address is 7 Skyline Drive, Hawthorne, New York 10532.

Q. How long have you been employed with Provident Design Engineering?

A. I have been employed at Provident Design Engineering since August 2016. Provident Design Engineering is a successor firm to both TRC Engineers and Raymond Keyes Associates, where I have worked since June 1986.

Q. On whose behalf are you testifying?

A. I am testifying on behalf of Danskammer Energy, LLC ("Danskammer" or "the Applicant").

Q. Please describe your educational background and professional experience.

I have a Bachelor's degree from Villanova University in Civil Engineering and a Master's degree from Fordham University in Finance. I am a licensed Professional Engineer in the State of New York as well as in five other States. I am also a Certified Professional Traffic Operations Engineer. My experience includes over 33 years of progressive Traffic Engineering services. Throughout those years, I provided services ranging from Engineer through Senior Project Manager/Partner. A copy of my resume is attached.

Q. Please describe your current responsibilities with Provident Design Engineering.

A. As a Partner/Senior Project Manager, my responsibilities include overseeing and managing the project and staff in regard to Traffic Engineering. In addition to my role as a Partner/Senior Project Manager, I also play an active role in the day-to-day operations

of the company. I am certified as a Professional Engineer (P.E.) by The University of the State of New York, Education Department, Office of the Professions, and am also certified as a P.E. in the States of New Jersey, Connecticut, Pennsylvania, Delaware and Ohio. In addition, I am certified by the Transportation Professional Certification Board, Inc. as a Professional Traffic Operations Engineer. Since joining Provident Design Engineering and its predecessor firms, I have worked with federal, state, county and local agencies, tribal nations, private developers, commercial entities, utilities, community groups and stakeholders.

Q. Have you testified in other proceedings before the New York State Public Service Commission or Siting Board on Electric Generation?

A. Yes. I have testified before the New York State Public Service Commission in connection with an Article VII application filed by Consolidated Edison Company of New York, Inc., related to its M-29 Transmission Line, Yonkers, New York. I have also testified before the Siting Board on Electric Generation in connection with the following two projects:

KeySpan Energy – Ravenswood Cogeneration Project Article X Application, Long Island City, NY

KeySpan Energy – Spagnoli Road Energy Center Article X Application, Huntington, NY

Q. Have you previously served as an expert witness before any other court, agency, or other body on the subject you plan to offer testimony on today?

A. No.

Q. What is the purpose and scope of your testimony in this proceeding?

A. As the Traffic Engineering Consultant, I am responsible for the vehicle effect on Transportation on the adjacent roadway network.

Q. What portion(s) of the Application is your testimony sponsoring?

A. I am sponsoring the following Exhibit of Danskammer's Article 10 Application: Exhibit 25 - Effect on Transportation.

Q. Were these portion(s) of the Application mentioned in the paragraph above prepared by you or under your direction and supervision?

A. Yes.

Q. In your testimony, will you refer to, or otherwise rely upon, any studies, publications, data or documents produced by persons other than yourself/your company? If so, please cite these sources.

A. Yes. Citations to any such sources are set forth in the above-referenced Exhibit.

Q. Does this complete your testimony?

A. Yes.

BRIAN E. DEMPSEY, PE, PTOE

EDUCATION
B.C.E., Civil Engineering, Villanova University, 1986
M.B.A., Finance, Fordham University, 1992

PROFESSIONAL REGISTRATIONS/CERTIFICATIONS
Professional Engineer, New York (#068835), 1992
Professional Engineer, Connecticut (#18429), 1994
Professional Engineer, New Jersey (#39571), 1996
Professional Engineer, Pennsylvania (#053492-E), 1997
Professional Engineer, Delaware (#11422), 1998
Professional Engineer, Ohio (#77566), 2013
Professional Traffic Operations Engineer (#260), 1999

AREAS OF EXPERTISE
Brian E. Dempsey, PE, PTOE is a Partner/Senior Project Manager at Provident Design Engineering (formerly TRC Engineers and Raymond Keyes Associates) and has over 33 years of experience encompassing Traffic Engineering, Traffic Signal Design, Traffic Planning, Traffic Analysis, Improvement Plans, Corridor Analysis, Parking Studies and Traffic Calming.

REPRESENTATIVE EXPERIENCE

New York Power Authority – 500 MW Combined Cycle Project. Project Manager for the Traffic Engineering portion of preparation of an Article X Application for a 500-megawatt (MW) combined-cycle power project to be constructed by the New York Power Authority at their Poletti Generating Station in Astoria, New York. The Article X Certificate was issued in October 2002, and construction started in January 2003. Traffic engineering services included volume projections, employee distributions, and analysis of impacts.

KeySpan Energy – 250 MW Ravenswood Cogeneration Project. Project Manager for the Traffic Engineering portion of the preparation of an Article X Application for a 250-MW cogeneration project proposed to be constructed by KeySpan Energy at their Ravenswood Generating Station in Long Island City, Queens, New York. The Article X Certificate was issued in September 2001, construction started in March 2002 and the facility began commercial operation in 2004. Traffic Engineering services included volume projections, employee distributions, and analysis of impacts.

KeySpan Energy – 250 MW Spagnoli Road Energy Center. Project Manager for the Traffic Engineering portion of the preparation of an Article X Preliminary Scoping Statement and an Article X Application for a 250-MW combined-cycle power project to be constructed by KeySpan Energy Development Corporation in the Town of Huntington, Suffolk County, New York. The Article X Certificate was issued in 2003. Traffic Engineering services included volume projections, employee distributions, and analysis of impacts.

Bowline Power Plant, Haverstraw, NY. Project Manager for the Traffic Engineering services for the preparation of an Article X Application for Unit 3 at the Bowline Site in Haverstraw, New York. Traffic studies included traffic counting surveys, volume projections, and detailed analysis at various intersections. Existing conditions were studied and expanded to provide probable impact and solutions for construction and operation projections.

Entergy Power Group and Entergy Nuclear, Inc. – Indian Point Peaking Facility, Buchanan, NY. Project Manager for the Traffic and Transportation Engineering portions of the preparation of an Article X application for a new Peaking Facility at Indian Point. The Application analyzed construction and operation impacts, air travel impacts, and accident data for ten locations.

National Grid, Spier Falls, NY. Project Manager responsible for the preparation of the required "Maintenance and Protection of Traffic" for the installation of several miles of an electric overhead feeder. Detailed signage plans, including several Variable Message Signs required by the County, were prepared. Detour Plans were prepared for temporary road closures.

Rochester Gas and Electric/Iberdola, Permitting and Highway Maintenance and Protection of Traffic Services, Galen, Savannah and Butler, NY. Senior Project Manager responsible for Permit Coordination and the preparation of the required "Maintenance and Protection of Traffic" for the installation of two overhead transmission lines traversing 15 miles and crossing state highways. Road opening permits were obtained. Coordination with the municipalities, County, and the New York State Department of Transportation (NYSDOT) was performed.

New York State Electric & Gas Corp., Highway Maintenance and Protection of Traffic Services – Corning Valley Transmission Project Towns of Campbell & Erwin, Steuben County, NY. Project Manager involved in the design of the required "Maintenance and Protection of Traffic" and coordination with the State for the installation of a 115-kV electric overhead feeder. The work impacted 12 local roadways and 2 state roadways (U.S. Rt. 15 & I-86). Road opening permits were obtained.

New York State Electric & Gas Corp., Town of Vestal, NY. Project Manager responsible for Permit Coordination and the preparation of the required "Maintenance and Protection of Traffic" for the installation of several miles of an electric overhead feeder. The work impacted State Roadways and had several crossings.

Rochester Gas and Electric, Highway Maintenance and Protection of Traffic Services, Chili, Gates and Rochester, NY. Project Manager responsible for Permit Coordination and the preparation of the required "Maintenance and Protection of Traffic" for the installation of an overhead transmission line. Road opening permits were obtained. Coordination with the municipalities, County, and NYSDOT was performed.

New York State Electric & Gas Corp., Highway Maintenance and Protection of Traffic Services and Highway Work Permits–Chenango County, NY. Project Manager involved in the Permit Coordination and the design of the required "Maintenance and Protection of Traffic" and coordination with the State for the installation of a 115-kV electric overhead feeder. The work impacted both state and county roadways. Highway Work Permits were obtained from the NYSDOT and the

County.

Indian Point Energy Center – Indian Point Traffic and Safety, Buchanan, NY. Project Manager for the Traffic Engineering of traffic circulation, safety, and security aspects of the Indian Point facility, particularly at the main access gate. Worked closely with security and operation personnel. Performed Traffic Signal Warrant Study for the intersection of the relocated Main Entrance of the Indian Point Energy Center. Reviewed access, circulation and security and recommended improvements to signage, striping, and operations at the control gate.

PPL Global – Long Island Power Authority – LM6000 79-MW Facility – Shoreham Nuclear Facility, Shoreham, NY. Project Manager for the Traffic Engineering portion of the preparation of a Traffic Study for a proposed LM6000 79-megawatt facility by PPL Global/Long Island Power Authority along North Country Road at the site of the former Shoreham Nuclear Facility. Traffic to be generated by the project and its impacts on the adjacent roadway network were determined.

enXco LIPA Solar PV Project, Traffic/Parking Analysis – Nassau and Suffolk Counties, NY. Mr. Dempsey was the Senior Project Manager of Traffic/Parking Analysis for enXco's proposed LIPA Solar PV Project, which proposes installation and operation of solar photovoltaic equipment on existing building rooftops and/or newly installed carports within existing parking lot areas at various commercial, industrial, and institutional sites throughout Nassau and Suffolk Counties.

Consolidated Edison Company of New York – M29 345-kV Transmission Line Project. Project Manager for the preparation of the Traffic portion of Environmental Studies as part of an Article VII Application for the construction and operation of a 12-mile 345-kV high-pressure fluid filled (pipe-type) underground cable from the Sprain Brook Substation in Yonkers through the Bronx to the new Academy 345-kV Switching Substation in Manhattan. The Article VII Application included a review of the traffic impacts, as well as an evaluation of alternative transmission line routes and the potential issues of crossing the Harlem River. The Article VII Application and the EMC&P were approved in 2007. Road opening permits were obtained.

Consolidated Edison Company of New York – Woodrow 138kV Transmission Line Project, Staten Island. Project Manager for the Traffic portion of the Environmental documentation required for Con Edison's Woodrow Transmission Line project. The environmental documentation included a National Environmental Policy Act Categorical Exclusion Application and Environmental Assessment, including submissions to NYSDOT and Federal Highway Administration addressing potential issues associated with the longitudinal placement of transmission and distribution feeders within the federally funded West Shore Expressway and a detailed assessment of project alternatives. These studies were submitted in 2006. Road-opening permits were obtained.

Consolidated Edison Company of New York – Cedar Street, Westchester County, NY. Project Manager for the preparation of the Traffic portion of the environmental studies for the preparation of an Article VII Application for a new 138-kV underground transmission line through Mount Vernon, Pelham, and New Rochelle and the addition of a third transformer at the existing Cedar Street substation in Westchester County. The Article VII Application included an evaluation of potential traffic impacts as well as an evaluation of alternative transmission line routes. The Article VII Certificate was issued in

2006. Road opening permits were obtained.

Consolidated Edison Company of New York – 138-kV Grasslands Transmission Lines and Substation. Project Manager for the Traffic Engineering portion of the preparation of an Article VII application for up to five underground transmission lines along two routes and a new 138/13-kV area substation in Westchester County. The project involved coordination with NYSDOT, the New York City Department of Environmental Protection, Water Supply Bureau, and the Westchester County Department of Public Works, as well as county and township officials, to advance the project under a non-contested Article VII proceeding. The Article VII Certificate was issued in February 2003 following the negotiation of a Joint Proposal without adjudicatory hearings, and construction started in April 2003. Traffic services included in traffic analyses, traffic diversions, and maintenance and protection of traffic.

Consolidated Edison Company of New York – White Plains Substation Improvements and Modernization. Project Manager for the Traffic Engineering portion of the Environmental Assessment of the proposed Improvement and Modernization of the White Plains Substation. SEQR documentation prepared included a Full Environmental Assessment Form and Draft Negative Declaration. The project involved coordination with the City of White Plains, the Westchester County Department of Transportation, New York State Department of Environmental Conservation, and adjacent property owners. Potential environmental impacts/issues associated with the project were addressed, including transportation impacts associated with the placement of a 138-kV transmission and 13-kV distribution lines within major roadways in the City of White Plains downtown area. The traffic studies were performed in 2000.

PPL Global – Kings Park 138-kV Underground Transmission Line, Suffolk County, NY. Project Manager for the Traffic Engineering portion of the preparation of a Traffic Study required for Article VII permitting for a proposed 138-kV Underground Transmission Line. The solid dielectric cable line was 4 miles long.

PPL Global – Long Island Power Authority – LM6000 79-MW Facility – Freeport Generating Facility, Freeport, NY. Project Manager for the Traffic Engineering portion of the preparation of a Traffic Study for a proposed LM6000 79-MW facility by PPL Global/Long Island Power Authority along Hanse Avenue. Traffic to be generated by the project and its impacts on the adjacent roadway network were determined.

PPL Global – Long Island Power Authority – LM6000 79-MW Facility – Edgewood Generating Facility, Islip, NY. Project Manager for the Traffic Engineering portion of the preparation of a Traffic Study for a proposed LM6000 79-MW facility by PPL Global/Long Island Power Authority at the former site of the Pilgrim Psychiatric Hospital. Traffic to be generated by the project and its impacts on the adjacent roadway network were determined.

PSEG Fossil, LLC – Hudson Unit 2 Back-end Technology Project. Project Manager for the Traffic Engineering portion of the preparation of Traffic Analysis for the construction of the installation of additional air pollution control equipment (back-end technology/BET) at PSEG Fossil, LLC's existing Hudson Generation Station Unit 2 Boiler in the Hackensack Meadowlands District in Jersey City. Traffic impacts during both operation and during peak construction were determined.

Central Maine Power Company, Road Crossing and Highway Maintenance and

Protection of Traffic Services – Portland, ME. Project Manager involved in the design of the required "Maintenance and Protection of Traffic" and coordination with the State for the installation overhead transmission lines across Maine Turnpike (I-95) in the Portland, Maine area. ITS signage was installed ahead of the construction. State Troopers were utilized in conjunction with an Interstate Rolling Road Block. The project was part of the Maine Power Reliability Program.

Kleen Energy Systems Generating Facility, Middletown, CT. Project Manager for the Traffic Engineering services for the construction of a new power plant in Middletown, Connecticut. Base traffic and roadway conditions were documented. Truck routing was determined. Construction impacts as well operational impacts were analyzed. Access to the facility was designed. A Project Development and Management Plan, including a Traffic Control Plan, was prepared, which considered equipment deliveries, oversize vehicles, emergency evacuation routes, parking and equipment.

Sithe Mystic Station Redevelopment, Everett, MA. Project Manager for the Traffic Engineering services for the preparation of a traffic study for the redevelopment of Mystic Station in Everett, Massachusetts. Construction impacts were analyzed and mitigation was proposed as applicable.

Fore River Electric Generating Facility, Weymouth, MA. Project Manager for the Traffic Engineering services for the construction of a new power plant in Weymouth, Massachusetts. Construction impacts as well operational impacts were analyzed.

Kendall Station Power Plant, Cambridge, MA. Project Manager for the Traffic Engineering services for the preparation of a traffic study for the construction of a new power plant in Cambridge, Massachusetts. Operational and construction impacts were analyzed and mitigation was proposed as applicable.

Lake Road Generating Plant, Killingly, CT. Project Manager for the Traffic Engineering services for the preparation of a traffic study for the construction of a new power plant in Killingly, CT. Operational and construction impacts were analyzed and mitigation was proposed as applicable.

PROFESSIONAL AFFILIATIONS

- Institute of Transportation Engineers (ITE) (Fellow)
- Mr. Dempsey is serving on various ITE committees and has been involved in various ITE publications. In addition, Mr. Dempsey has made technical presentations at both local and international ITE conferences.

PROFESSIONAL PUBLICATIONS

Mr. Dempsey has been involved with co-authoring or as a member of the technical committee for several publications including but not limited to:

ITE Trip Generation Manual - 6th, 7th, 8th, 9th and 10th Editions
ITE Parking Generation – 4th and 5th Editions
Sight Triangle and Corner Clearance Policies at Intersections and Driveways, 2014
Survey of Guidelines Used to Select Sidewalk Locations, 2015 *(Received Traffic Engineering Council Best Project Award)*
Pavement Marking Patterns Used at Uncontrolled Pedestrian Crossings, 2010
Trip Generation Characteristics of Shopping Centers, 1996

ITE PRESENTATIONS

ITE District 1 (Northeast) Conference: Improving Pedestrian and Vehicle Safety at Older Suburban Elementary School, June 2011

ITE International Conference (Annual Meeting): Improving Safety at Suburban Schools, August 2002

ADDITIONAL CREDENTIALS

Mr. Dempsey has made presentations to various other organizations including a Traffic Calming Presentation to the Westchester Municipal Planning Federation.

Mr. Dempsey is also a member of the Westchester County Traffic Safety Board.

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PRE-FILED TESTIMONY OF MARIE TERESA DOWD

ON BEHALF OF

DANSKAMMER ENERGY, LLC

Q. Please state your name, employer, position and business address.

A. My name is Marie Teresa Dowd. I am currently employed by TRC as a Principal Engineer. My business address is 10 Maxwell Drive, Suite 200, Clifton Park, New York, 12065.

Q. How long have you been employed with TRC?

A. I have been employed by TRC since July 2017.

Q. On whose behalf are you testifying?

A. I am testifying on behalf of Danskammer Energy, LLC ("Danskammer" or "the Applicant").

Q. Please describe your educational background and professional experience.

I have a Bachelor of Science degree from Purdue University in Mechanical Engineering and a Masters of Engineering degree from Pennsylvania State University in Environmental Pollution Control. My experience includes 22 years of working on diverse environmental engineering projects primarily throughout the northeastern United States for commercial, state, and federal clients. These projects have included Phase I Environmental Site Assessments; Phase II Environmental Site Investigations; feasibility studies; design and implementation oversight related to removal actions, containment, in-situ remedies; compliance inspections and the preparation of the associated plans, applications, and reports; air emission monitoring and reporting; permitting for bridge, facility, and corridor capacity construction projects; scoping, design, and construction oversight of capital improvement projects for sanitary, drinking water, industrial wastewater, and stormwater systems; and emergency response. In addition, I have

worked on the projects in varying capacities from field engineer, design engineer, and project manager. A copy of my resume is attached.

Q. Please describe your current responsibilities with TRC.

A. As a Principal Engineer, my responsibilities include overseeing approximately a dozen projects for various clients related to remediation, compliance, due diligence, capital improvements, and emergency response. In addition to my role as a Principal Engineer, I also play an active role preparing proposals and requests for proposals, managing and monitoring project budgets, drafting invoices, reviewing work materials, supervising the project teams, selecting subcontractors, and interacting with clients. I am certified by the New York State (NYS) Office of Professions as a Professional Engineer (PE). I received my NYS PE license in 2003. Since joining TRC, I have worked with numerous Class I freight railroads, commuter railroads, the New York State Department of Environmental Conservation, and energy and utility companies, including Danskammer with respect to its proposed repowering project (the "Project").

Q. Have you testified in other proceedings before the New York State Public Service Commission or Siting Board on Electric Generation?

A. No.

Q. Have you previously served as an expert witness before any other court, agency, or other body on the subject you plan to offer testimony on today?

A. No.

Q. What is the purpose and scope of your testimony in this proceeding?

A. As TRC's licensed PE working on the Danskammer Article 10 Application for the Project, I have been responsible for reviewing and updating applicable sections of the

Application and preparing the draft Application for Major Oil Storage Facility License (MOSF) update and initial draft Hazardous Substance Chemical Bulk Storage (CBS) Application based on information supplied by Danskammer.

Q. What portion(s) of the Application is your testimony sponsoring?

A. I am a member of the Panel sponsoring the following Exhibit of Danskammer's Article 10 Application: Exhibit 37.

Q. Were these portion(s) of the Application mentioned in the paragraph above prepared by you or under your direction and supervision?

A. Portions of Exhibit 37 were prepared by me as they related to regulatory references. The draft MOSF and CBS applications were prepared by me based on information supplied by Danskammer.

Q. In your testimony, will you refer to, or otherwise rely upon, any studies, publications, data or documents produced by persons other than yourself/your company? If so, please cite these sources.

A. Yes, any citations to documentary sources that neither I nor TRC directly prepared are provided in Exhibit 37. My testimony will refer to New York State Bulk Storage Regulations, as applicable.

Q. Does this complete your testimony?

A. Yes.

Marie T. Dowd, PE

Senior Project Manager/Professional

CREDENTIALS

Education:

- M.E., Environmental Pollution Control, Pennsylvania State University, 1997
- B.S., Mechanical Engineering, Purdue University, 1995

Professional Registrations/Certifications/ Training:

- Professional Engineer - New York, 2003

Marie T. Dowd, PE is a New York State-licensed professional engineer with 21 years of experience working on diverse environmental engineering projects throughout the Northeastern United States. She has managed, supervised, or supported commercial, industrial, and transportation projects involving Phase I Environmental Site Assessments; Phase II Environmental Site Investigations; Remedial Investigations (RIs); Feasibility Studies (FSs); Remedial Designs; and Removal Actions (RAs) including containment and in-situ remedies; compliance inspections and the preparation of the associated plans, applications, and reports; air emissions monitoring and reporting; permitting projects for bridge, facility, and corridor capacity construction projects; scoping, design, and construction oversight of capital improvement projects for sanitary, drinking water, industrial wastewater, and stormwater systems; and emergency response.

EXPERIENCE

Professional Summary:

- 21 years of experience working on diverse environmental engineering projects

Areas of Expertise:

- Environmental Assessments and Audits
- Underground Storage Tank Management
- Site Remediation Design and Implementation
- Emergency Response
- Construction Management
- Groundwater Remediation
- Stormwater Pollution Prevention Plan and Spill Prevention, Control and Countermeasure Compliance
- Petroleum Bulk Storage Programs
- Solid Waste Management
- Wastewater Treatment
- Capital Improvement Projects Scoping, Design, and Implementation

PROJECT EXPERIENCE

New York State Department of Environmental Conservation (NYSDEC), Fashion Care Cleaning Site (NYSDEC Site No. 442044) – East Greenbush, NY
Ms. Dowd has served as the project manager and senior engineer for the implementation of an RI for the Fashion Care Cleaning Inactive Hazardous Waste Disposal Site (IHWDS) located in East Greenbush, New York. Ms. Dowd managed RI activities that included multiple sampling events to evaluate sub-slab vapor, soil vapor, indoor air, subsurface soil, supply well water, and groundwater. A supplemental RI work plan was developed in the spring of 2019 to address identified data gaps. Recent activities involved the implementation of the supplemental RI work plan including a geophysical investigation; installation of soil borings, membrane interface probing, and additional monitoring wells; an SVE pilot test; and the collection and laboratory analysis of soil and groundwater samples. Ms. Dowd will be responsible for managing completion of the update of the RI Report and drafting of the FS.

NYSDEC, Haz-O-Waste Site (NYSDEC Site No. 727003) – Wampsville, NY
Ms. Dowd served as the project manager and senior engineer for this former hazardous waste transportation, storage, and disposal facility (TSDF) IHWDS located in Wampsville, New York. The project has included preparation of plans, permits, and design for the demolition of the existing facility building and two equipment sheds; asbestos and lead abatement; removal or abandonment of the site structures, utilities, tanks, and wells; subcontracting, implementation, and oversight of the site preparation work, demolition, and waste transportation and disposal; drafting of a Demolition and Site Preparation Summary Report; pre-design investigation to further delineate the extent of volatile organic compounds (VOC) impacts to groundwater; and development and implementation of a pilot test work plan. Ms. Dowd managed the performance of the in-situ bioremediation pilot test and subsequent evaluation of bioremediation progress indicators and related reporting. Recent activities, managed by Ms. Dowd, have included the development of a focused subsurface investigation plan to identify the primary source(s) of VOCs in groundwater at the site to support the design and implementation of a source material RA.

10 Maxwell Drive, Suite 200, Clifton Park, New York, USA, 12065
Tel: 518.894.2871 Email: MDowd@TRCcompanies.com

PROJECT EXPERIENCE (continued)

NYSDEC, Katzman Recycling Site (NYSDEC Site No. 558035) – Granville, NY

Ms. Dowd served as the senior quality control reviewer and senior engineer for the preparation of an RI Report for the site of a former recycling facility and incinerator located in Granville, New York, primarily impacted with polychlorinated biphenyls. Remedial investigation data was generated during several multi-media sampling events to evaluate surface soils, subsurface soils, surface water, sediment, and groundwater.

CSXT River Street Derailment (Voluntary Cleanup Program Site No. V00524) – Rochester, NY

Ms. Dowd served as project manager and engineer for a train derailment site in Rochester, NY requiring corrective measures including the excavation and disposal of 35,000 cubic yards of acetone- and methylene chloride-impacted soils; utility (water supply lines and sewer) replacement; installation of a sheet-pile wall and containment cell; groundwater management; evaluation of Genesee River sediment; dredging; shore line and wetland restoration; freshwater wetlands restoration; in-situ aerobic bioremediation of residual impacts; and drafting of the Final Engineering Report and Sediment Management Plan, which resulted in receipt of a Certificate of Completion.

CSXT Massey Yard (NYSDEC Spill Case No. 1510624) – Watertown, NY

Ms. Dowd served as project manager and engineer for the investigation of an apparent petroleum release to site soil and groundwater discovered during the removal of an abandoned foundation at an active railyard in Watertown, NY. Ms. Dowd managed the implementation of an interim remedial measure, sensitive receptor/ecological assessment and wetlands survey, limited Phase I Environmental Site Assessment, preparation of an RI work plan, implementation and oversight during RI activities including the excavation of test pits, installation of groundwater monitoring wells, and the collection and analysis of soil groundwater samples to delineate subsurface impacts, and preparation of the RI Report.

CSXT Kenmore Yard (NYSDEC Spill Case No. 1500213) – Tonawanda, NY

Ms. Dowd served as the project manager and engineer for the investigation of petroleum impacts to a retention pond in an active railyard in Tonawanda, NY. Ms. Dowd managed the mapping and cleaning of the stormwater network leading to the retention pond; upgrades to the stormwater inlets and outlets; and maintenance of the retention pond liner. The project involved extensive dewatering fluids management, surface water sampling and analysis, and county permitting for discharge compliance. Follow up activities included preparation of a subsurface investigation plan to delineate root cause and assist in the development of a remedial action.

CSXT Massena Yard (NYSDEC Spill Case No. 8301602) – Massena, NY

Ms. Dowd served as project manager and engineer for a legacy petroleum release project at an active railyard in Massena, NY. The project involved delineation of subsurface soil and groundwater impacts; preparation of a remedial action plan; coordination and oversight of the removal action implementation, which included the application of a bioamendment to the backfill to provide extended oxygen release; and groundwater monitoring. As a result of these efforts, including preparation of a spill closure report, the spill case was closed.

CSXT Oneida Derailment (NYSDEC Spill Case No. 0613206) – Oneida, NY

Ms. Dowd served as project manager and engineer for a train derailment site in Oneida, NY requiring corrective measures including the excavation and disposal of 8,200 tons of toluene- and ferric chloride-impacted soils; dewatering and disposal of 120,000 gallons of impacted water; application of soda ash and lime to adjust the pH of surface soils; sampling of drinking water, surface water, sediments, and soils; and in-situ chemical oxidation injection for residual groundwater treatment to achieve project closure. As a result of these efforts, including preparation of a spill closure report, the spill case was closed.

BEFORE THE
NEW YORK STATE
SITING BOARD ON ELECTRIC GENERATION SITING
AND THE ENVIRONMENT

Application of Danskammer Energy, LLC for a Certificate of Environmental Compatibility and Public Need Pursuant to Article 10 for Approval to Repower its Danskammer Generating Station Site Located in the Town of Newburgh, Orange County	)	Case No.: 18-F-0325

PRE-FILED TESTIMONY OF JAN GARCIA

ON BEHALF OF

DANSKAMMER ENERGY, LLC

Q. Please state your name, position and business address.

A. My name is Jan Garcia. I currently serve as Danskammer Energy, LLC's Director of Plant Engineering and Projects. My business address is 994 River Road, Newburgh, NY 12550.

Q. How long have you held this position with Danskammer Energy, LLC?

A. I have served in this position since October 22, 2018.

Q. On whose behalf are you testifying?

A. I am testifying on behalf of Danskammer Energy, LLC ("Danskammer" or "the Applicant").

Q. Please describe your educational background and professional experience.

I have a bachelor's degree from the New York Institute of Technology in Electrical and Computer Engineering Technology. My experience includes a variety of project and engineering experience from both the conventional and nuclear side of utility scale power generation. Prior to joining Danskammer, I held roles at NRG, supporting regional power station engineering and capital project management. Before that, I was employed by Entergy Nuclear as the Instrumentation and Controls Supervisor and served as a Nuclear Design Engineer at Indian Point Energy Center. A copy of my bio is attached.

Q. Please describe your current responsibilities with Danskammer.

A. As Director of Plant Engineering and Projects, my responsibilities include leading development activities for the repowering of Danskammer's existing generating facility (the "Project"), directly reporting to Danskammer's Chief Operating Officer. I leverage my prior knowledge of power plant engineering, operations and maintenance (O&M), and procurement to identify and lead best-in-class third-party partners for outsourced

design, engineering, technical due diligence, construction, commissioning and asset management services. I work with on-site plant personnel, third-party consulting groups, and outside counsel with respect to various development activities related to the Project, including permitting, grid interconnection, power island equipment design, balance of plant design, pricing and terms, project budgets, requests for quotes and proposals, constructability, planning, execution, and overall strategy. I manage the performance and productivity of all third-party partners and construction subcontractors, tracking key business performance metrics across cost, quality, and schedule. I also provide engineering oversight for the operations of the existing generating facility, Danskammer Generating Station, where I oversee plant O&M planning and execution and provide input to O&M budgeting in coordination with the existing plant's management team. Since joining Danskammer, I have worked with state and local agencies, other private developers, commercial entities, utilities, community groups, and stakeholders with respect to the Project.

Q. Have you testified in other proceedings before the New York State Public Service Commission or Siting Board on Electric Generation?

A. No.

Q. Have you previously served as an expert witness before any other court, agency, or other body on the subject you plan to offer testimony on today?

A. No.

Q. What is the purpose and scope of your testimony in this proceeding?

A. As the Director of Plant Engineering and Projects, I am responsible for oversight and direction of technical project engineering and management of both Danskammer resources and third-party consultants.

Q. What portion(s) of the Application is your testimony sponsoring?

A. I am a member of the Panels sponsoring the following Exhibits of Danskammer's Article 10 Application: Exhibits 3, 11, 18, 34, and 36.

Q. Were these portion(s) of the Application mentioned in the paragraph above prepared by you or under your direction and supervision?

A. Yes.

Q. In your testimony, will you refer to, or otherwise rely upon, any studies, publications, data or documents produced by persons other than yourself/your company? If so, please cite these sources.

A. Yes. References to sources of information that have not been directly prepared by me or Danskammer's team of service providers have been set forth in the above-referenced Exhibits, as applicable.

Q. Does this complete your testimony?

A. Yes.

Jan Garcia
Engineering, Maintenance and Operations Management

- Over 15 years of engineering, maintenance and operations experience from the local New York Area, involving utility scale conventional and nuclear power generation.
- Held various positions at NRG, supporting regional power station engineering and capital project management.
- Worked for Entergy Nuclear as the Instrumentation and Controls Supervisor and Nuclear Design Engineer at Indian Point Energy Center.
- Bachelor's degree in Electrical Engineering from the New York Institute of Technology.

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PRE-FILED TESTIMONY OF NICHOLAS J. GIER

ON BEHALF OF

DANSKAMMER ENERGY, LLC

Q. Please state your name, employer, position and business address.

A. My name is Nicholas J. Gier. I am currently employed by TRC as an Environmental Scientist. My business address is 2801 Wehrle Drive, Suite 8, Williamsville, NY 14221.

Q. How long have you been employed with TRC?

A. I have been employed by TRC since November 2018.

Q. On whose behalf are you testifying?

A. I am testifying on behalf of Danskammer Energy, LLC ("Danskammer" or "the Applicant").

Q. Please describe your educational background and professional experience.

I have a Bachelor of Arts degree from the University of Pittsburgh at Bradford in Environmental Studies. My experience includes regulatory compliance and spill prevention, remedial field work, and biological and hydrologic field surveys. In addition, I worked in the Regulatory Affairs department at Gernatt Asphalt Products, Inc. from May 2015 to November 2018, where I was responsible for assisting with overall environmental compliance and sand and gravel mine permitting for the company. A copy of my resume is attached.

Q. Please describe your current responsibilities with TRC.

A. As an Environmental Scientist, my responsibilities include remedial field work, conducting site visits and inspections, preparing Spill Prevention, Control and Countermeasure (SPCC) Plans, Stormwater Pollution Prevention Plans (SWPPPs), initial and renewal Individual Stormwater Permit applications, initial and renewal Industrial Wastewater Permit applications, and technical and quality review. Since joining TRC, I have worked on projects for the New York State Department of Environmental

Conservation (NYSDEC), long-haul and short-line railroads, and power plant facilities, including the repowering project proposed by Danskammer (the "Project").

Q. Have you testified in other proceedings before the New York State Public Service Commission or Siting Board on Electric Generation?

A. No.

Q. Have you previously served as an expert witness before any other court, agency, or other body on the subject you plan to offer testimony on today?

A. No.

Q. What is the purpose and scope of your testimony in this proceeding?

A. As an Environmental Scientist for TRC, one of Danskammer's consultants for the Project, I have been responsible for the preparation of portions of the Article 10 Application for the Project including: the preliminary SPCC Plan; Exhibit 38 – Water Interconnection; Exhibit 39 – Wastewater Interconnection; and draft State Pollutant Discharge Elimination System (SPDES) Industrial Discharge Permit modification application.

Q. What portion(s) of the Application is your testimony sponsoring?

A. I am a member of the Panels sponsoring the following Exhibits of Danskammer's Article 10 Application: Exhibits 38 and 39, including the preliminary SPCC Plan and the draft SPDES Industrial Discharge Permit modification application.

Q. Were these portion(s) of the Application mentioned in the paragraph above prepared by you or under your direction and supervision?

A. Yes.

Q. In your testimony, will you refer to, or otherwise rely upon, any studies, publications, data or documents produced by persons other than yourself/your company? If so, please cite these sources.

A. Yes. References to sources of information that have not been directly prepared by me or TRC are referenced in the above-referenced Exhibits, as applicable.

Q. Does this complete your testimony?

A. Yes.

Nicholas Gier

Environmental Scientist

CREDENTIALS

Education:

- B.A., Environmental Studies, University of Pittsburgh at Bradford, 2014

Professional Registrations/Certifications/ Training:

- Federal Aviation Administration (FAA) licensed Remote Pilot for Small Unmanned Aircraft Systems, September 2016
- Forty-Hour OSHA HAZWOPER Training, April 2019
- American Red Cross First Aid/CPR/AED Certified, March 2, 2018
- Mine Safety and Health Administration (MSHA) part 46 new surface miner training, June 2010
- MSHA part 46, 8-hour annual refresher course, March 2018
- Environmental Protection Agency Method 9 Visible Emission Observer, 2018

Nicholas Gier has over 5 years of progressive experience in environmental field inspections as an Environmental Scientist.

EXPERIENCE

Professional Summary:

- Over 5 years of experience in environmental field inspections

Areas of Expertise:

- Regulatory Compliance inspections and plan preparation including Spill Prevention, Control, and Countermeasures (SPCC) Plans, Stormwater Pollution Prevention Plans (SWPPP), Preparedness, Prevention, and Contingency (PPC) Plans, and Spill Prevention, and Response (SPR) Plans
- Industrial Stormwater Permitting including Individual and Multi-Sector General Permits (MSGP) in NY, PA and VA
- New York State Department of Environmental Conservation (NYSDEC) Mined Land Reclamation Permitting (sand and gravel mines)
- Sand and Gravel Mine Construction and Compliance Inspections
- Focused Feasibility Studies
- Remedial Field Work
- Biological and Hydrologic Field Surveys
- Licensed FAA Commercial Drone Pilot (autonomous and manual flight operations)

Representative Experience:

- Biological Survey Student Intern, United States Forest Service, May 2013 – April 2014
- Regulatory Affairs, Gernatt Asphalt Products, Inc., May 2015 – November 2018
- Environmental Scientist, TRC Environmental, November 2018 – Present

PROJECT EXPERIENCE

Regulatory, Compliance and Permitting

Danskammer Energy, LLC, Article 10 Application – Newburgh, NY (July 2019 – Present)

Responsible for the preparation of application materials for Exhibits 38 and 39, Preliminary SPCC Plan, and Individual Industrial SPDES modification application to support the Article 10 process for a natural gas-powered combined-cycle plant in Orange County, New York. Coordinated with the client and respective consultants to gather information related to the respective exhibits, plans, and permit applications.

Norfolk Southern Railway Company, Clean Water Act Services – North Region, NY, NJ, PA, WV, VA (November 2018 – Present)

Conducted site inspections for multiple facilities throughout Virginia for the purpose of preparing necessary plans and permits ensuring future compliance. Site visits involved review of facility, existing plans and gathering other necessary information to prepare SPCC plans, SWPPPs, renewal of Virginia MSGP, and No-Exposure Certifications. He has also conducted site inspections throughout the north region in order to revise and update various PPC Plans, SPR Plans, SPCC Plans, and SWPPPs. Permitting for Norfolk Southern has involved preparing initial and renewal Individual Stormwater Permit applications, initial and renewal Industrial Wastewater permit applications, renewal applications for Publicly Owned Treatment Works permits, and MSGP applications/Notices of Intent for locations in NY, PA, NJ, and WV.

Genesee and Wyoming Railroad, Environmental Support and Stormwater Monitoring – Northeast Region, NY and PA (November 2018 – Present)

Conducted multiple facility inspections for 2018 Tier 2 reporting as well as preparing and filing Tier 2 reports to E-Plan (NY facilities) and Pennsylvania Tier II System (PA facilities). He also performs Quarterly Visual Monitoring, Quarterly Facility Inspections and Semi-Annual Stormwater sampling for three facilities within Western New York.

PROJECT EXPERIENCE (continued)

Gernatt Asphalt Products, Inc., Regulatory Affairs – Collins, NY (May 2015 – November 2018)

Team member working to obtain and manage New York State Department of Environmental Conservation (NYSDEC) Mined Land Reclamation Permits and ensure environmental compliance for a sand and gravel mining company in Western New York. His responsibilities included managing and updating eight SWPPPs for NYSDEC's Multi-Sector General Permit and three SWPPPs for NYSDEC's Individual Industrial SPDES permit; managing and updating 10 SPCC Plans; ensuring compliance with NYSDEC Petroleum bulk storage regulations and accompanying NYSDEC staff during inspections; developing graphics using AutoCAD for mining permit applications, SWPPPs, and SPCC plans; measuring, recording, and reporting data from groundwater monitoring wells to NYSDEC and professional hydrogeologists; monitoring construction of new mines along with conducting field inspections of permitted mine sites to ensure compliance with the site's NYSDEC Mined Land Reclamation Permit; and coordinating with fellow members of the Regulatory Affairs department and professional consultants to respond to information inquiries by NYSDEC either verbally or written during the State Environmental Quality Review process.

Remediation

Sequa Corporation, Focused Feasibility Study Report, Former Chromalloy Facility – West Nyak, NY (December 2018)

Drafted a Focused Feasibility Study Report for Operable Unit II – Soil, for the Former Chromalloy Facility, which used the site as an industrial machining facility. The focus of the report was to produce multiple remedial alternatives for determining future remediation activities at the site.

NYSDEC, Haz-O-Waste Field Work – Canastota, NY (April 2019)

Assisted with terra core soil sampling and soil classification during geoprobing activities. He also observed and recorded monitoring well installation.

NYSDEC, Site Management Portfolio – Various sites across NY – (April 2019 – Present)

Assisted with conducting site inspections, groundwater well gauging, low-flow groundwater sampling, and residential well sampling. Responsible for recording data, collecting samples, and filling out chain-of-custody documents.

United States Forest Service, Biological Sciences Intern – Bradford, PA (May 2013 – April 2014)

Performed a biological and hydrologic survey for the proposed 46-mile Jakes Rocks Mountain Bike Trail Project within the Allegheny National Forest. He completed field work that included Identifying rare plant species of the Allegheny National Forest and plants that are commonly associated with their habitat; basic stream measurements (i.e., width, length, substrate, and type); and birds of prey and invasive/non-native plant species identification. Nick and his fellow interns located and photo-documented key features using a handheld global-positioning system unit. All findings were recorded and compiled into clear and concise notes which were used to create an ArcGIS map for use by Bradford Ranger District resource specialists in a National Environmental Policy Act analysis.

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PRE-FILED TESTIMONY OF THOMAS M. GRAY

ON BEHALF OF

DANSKAMMER ENERGY, LLC

Q. Please state your name, position and business address.

A. My name is Thomas M. Gray. I currently serve as the Chief Financial Officer for Danskammer Holdco, LLC, which is the parent company of Danskammer Energy, LLC ("Danskammer" or "the Applicant"). I also serve as the Chief Financial Officer of Danskammer. My business address is 717 Fifth Avenue, Floor 12A, New York, NY 10022.

Q. How long have you held such position with Danskammer Holdco, LLC and Danskammer?

A. I have served as Chief Financial Officer for Danskammer Holdco, LLC and Danskammer since July 2018.

Q. On whose behalf are you testifying?

A. I am testifying on behalf of Danskammer.

Q. Please describe your educational background and professional experience.

I hold a Master of Business Administration degree in Finance and Management (1999) and a Bachelor's of Science degree in Finance and International Business (1994), both from the Leonard N. Stern School of Business at New York University. My experience includes my current position as the Chief Financial Officer of Danskammer Holdco, LLC and Danskammer since July 2018. Prior to my current position, I served for eight years (2009 to 2017) as a Managing Director in Asset Management for Morgan Stanley Infrastructure, Inc. ("MSI"). MSI serves as the General Partner for the North Haven Infrastructure Partners private equity funds, which have $7.6 billion of assets under management and focus on owning and operating infrastructure investments globally. During my tenure with Morgan Stanley, I co-managed the funds for the Asset

Management group and served as Director on nine Boards of Directors of various portfolio companies. Prior to Morgan Stanley, I was a Senior Vice President for Lehman Brothers Inc. ("Lehman"), with my time split between the private equity and investment banking divisions for a total of ten years (1999 to 2009). During the majority of my time with Lehman, I served in the Project Finance and Global Power and Utilities groups. My responsibilities included providing corporate finance advisory, mergers and acquisitions advisory and project financing structuring and execution to clients in the regulated gas and electric utility and power generation sectors. Prior to Lehman, I held an Associate position at Churchill Capital for two years (1995 to 1997) and an Analyst position at Piper Jaffrey Inc. for one year (1994 to 1995). A copy of my bio is attached hereto.

Q. Please describe your current responsibilities with Danskammer Holdco, LLC and Danskammer.

A. As Chief Financial Officer of Danskammer Holdco, LLC and Danskammer, my responsibilities include: financial, accounting and treasury management, risk management, compliance and legal oversight, market assessment and strategic planning, financial forecasting, asset valuation, capital structure management and optimization, financial and operational reporting, tax management, general administration, vendor oversight and redevelopment support.

Q. Have you testified in other proceedings before the New York State Public Service Commission or Siting Board on Electric Generation?

A. No.

Q. Have you previously served as an expert witness before any other court, agency, or other body on the subject you plan to offer testimony on today?

A. No.

Q. What is the purpose and scope of your testimony in this proceeding?

A. As the Chief Financial Officer of Danskammer, I provided oversight for, or assistance in, the preparation of Exhibit 1 – General Information, Exhibit 8 – Electric System Production Modeling, Exhibit 13 – Real Property, and Exhibit 27 – Socioeconomic Effects. I also provided input data for Exhibits 8 and 27.

Q. What portion(s) of the Application is your testimony sponsoring?

A. I am a member of the Panels sponsoring the following Exhibits of Danskammer's Article 10 Application: Exhibits 1, 8, 13, and 27.

Q. Were these portion(s) of the Application mentioned in the paragraph above prepared by you or under your direction and supervision?

A. Yes.

Q. In your testimony, will you refer to, or otherwise rely upon, any studies, publications, data or documents produced by persons other than yourself/your company? If so, please cite these sources.

A. Yes. References to sources of information that have not been directly prepared by me or the Danskammer's team of service providers are referenced in the above-referenced Exhibits, as applicable.

Q. Does this complete your testimony?

A. Yes.

Tom Gray
Financial and Commercial Management, Budgeting and Financial Reporting, Credit Facility and Financing

- 22 years of experience in energy and infrastructure
- Served as Managing Director of Morgan Stanley Infrastructure Inc., a $7.6 billion global infrastructure private equity fund, and as Senior Vice President of Lehman Brothers Inc.'s Global Power and Utilities group
- Responsible for the asset management of 18 infrastructure and energy investments and director on nine boards while with Morgan Stanley including: MATEP LLC, Southern Star Central Corp., SAESA Group, Montreal Gateway Terminals LP, Madrileña Red de Gas, Hornet Midstream Pipeline, LLC, Chicago Parking Meters, LLC, Chicago Loop Parking, LLC and AMI Group, LLC
- MBA in finance and Management and a B.S. in Finance and International business from the Leonard N. Stern School of Business at New York University

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PRE-FILED TESTIMONY OF DAVID M. HESSLER

ON BEHALF OF

DANSKAMMER ENERGY, LLC

Q. Please state your name, employer, position and business address.

A. My name is David M. Hessler. I am currently employed by Hessler Associates, Inc. as an acoustical engineer. My business address is 5096 N. Silver Cloud Dr., St. George, UT 84770.

Q. How long have you been employed by Hessler Associates, Inc.?

A. I have been employed for over 28 years by Hessler Associates, Inc., as Vice President and a Principal Consultant. Hessler Associates, Inc. is an engineering consulting firm that exclusively specializes in the acoustical design and analysis of power generation and industrial facilities of all kinds.

Q. On whose behalf are you testifying?

A. I am testifying on behalf of Danskammer Energy, LLC ("Danskammer" or "the Applicant").

Q. Please describe your educational background and professional experience.

I received my Bachelor of Science degree (B.S.), *Summa cum Laude*, in Mechanical Engineering in 1997 at the A. James Clark School of Engineering, University of Maryland, College Park, Maryland, and a Bachelor of Arts degree (B.A.) in 1982, at the University of Hartford, Hartford, Connecticut. I am a registered Professional Engineer (P.E.) in the Commonwealth of Virginia and I am a member of the Institute of Noise Control Engineering (INCE). My professional specialization is the measurement, analysis, control and prediction of noise from both fossil-fueled and renewable power generation facilities. I have been the principal acoustical designer and/or test engineer on hundreds of power station projects all over the world, most commonly combined-cycle plants.

Q. Have you testified in other proceedings before the New York State Public Service Commission or Siting Board on Electric Generation?

A. No, I have worked on numerous energy projects in the State of New York over many years but have never had to formally testify in conjunction with any of them.

Q. Have you previously served as an expert witness before any other court, agency, or other body on the subject you plan to offer testimony on today?

A. Yes, many times for a number of other state public service commissions or energy facility siting boards. The specific cases are listed on my resume, which is attached hereto.

Q. What is the purpose and scope of your testimony in this proceeding?

A. As an acoustical engineer specializing in power plants, I am responsible for the noise impact assessment and acoustical design of the Project.

Q. What portion(s) of the Application is your testimony sponsoring?

A. I am sponsoring Exhibit 19 of Danskammer's Article 10 Application.

Q. Was this portion of the Application mentioned in the paragraph above prepared by you or under your direction and supervision?

A. Yes.

Q. In your testimony, will you refer to, or otherwise rely upon, any studies, publications, data or documents produced by persons other than yourself/your company? If so, please cite these sources.

A. No.

Q. Does this complete your testimony?

A. Yes.

CURRICULUM VITAE

DAVID M. HESSLER

Title:	Principal Consultant, Vice-President Hessler Associates, Inc.
Professional Affiliations:	Professional Engineer (P.E.), Commonwealth of Virginia Member Institute of Noise Control Engineering (INCE) National Council of Acoustical Consultants (NCAC)
Education:	Bachelor of Science in Mechanical Engineering (B.S.), 1997 *Summa cum Laude* A. James Clark School of Engineering University of Maryland, College Park, MD Bachelor of Arts (B.A.), 1982 University of Hartford, Hartford, CT
Employer:	Hessler Associates, Inc. 38329 Old Mill Way, Unit 8 Ocean View, DE 19970
Office Location:	St. George, UT Years in present position: 28

Current Job Description:

Acoustical engineer specializing in the prediction, assessment and mitigation of environmental noise from new and existing power generation and industrial facilities. Typical tasks include:

- Field measurement studies of existing ambient sound levels in the vicinity of proposed project sites
- Computer noise modeling of new facilities prior to construction
- Environmental impact assessments for new projects
- Noise mitigation design studies of new facilities
- Verification measurements of completed facilities
- Diagnostic studies of facilities with existing noise problems
- Design and specification of noise mitigation measures
- Educational lectures on noise issues for private corporations
- Expert witness testimony

General Experience:

As an outside consultant to nearly all the major power industry EPC contractors, developers and OEM's, have been the principal acoustical designer of over 400 power plants and industrial facilities worldwide ranging from a 3900 MW power station in Saudi Arabia to numerous combustion turbine combined cycle plants, data centers, diesel generator installations, refineries and wind turbine projects. Typically, the focus of the work on these projects was to anticipate potential noise impacts at sensitive receptors near the project and recommend practical noise abatement measures to avoid them. In addition, extensive verification measurements in and around the completed power plants, industrial facilities and wind farms have been performed to confirm that the design recommendations have been successfully executed.

Representative Papers and Publications:

"Wind Turbine Noise", Chapter 7 *Measuring and Analyzing Wind Turbine Sound Levels*, Multi-Science Publishing Co., Brentwood, Essex, UK, Jan. 2012. Comprehensive book on all aspects of wind turbine noise. Each chapter written by a recognized expert in that subject.

Teleseminar "Wind Turbine Siting and Best Practices", National Regulatory Research Institute (NRRI), Invited speaker, Jan. 2012.

"Best Practices Guidelines for Assessing Sound Emissions from Proposed Wind Farms and Measuring the Performance of Completed Projects", Prepared for the Minnesota Public Utilities Commission under the auspices of the National Association of Regulatory Utility Commissioners (NARUC), Oct. 2011.

"Accounting for Background Noise when Measuring Operational Noise from Wind Turbines", Fourth International Meeting on Wind Turbine Noise, Rome, Italy, Apr. 2011.

"Recommended noise level design goals and limits at residential receptors for wind turbine developments in the United States", *Noise Control Engineering Journal*, J.59 (1), January-February 2011.

"Wind tunnel testing of microphone windscreen performance applied to field measurements of wind turbines", Third International Meeting on Wind Turbine Noise, Aalborg, Denmark, June 2009.

"Experimental study to determine wind-induced noise and windscreen attenuation effects on microphone response for environmental wind turbine and other applications", *Noise Control Engineering Journal*, J.56, July-August 2008.

Expert Witness Cases:

Before the Washington State Energy Facilities Siting Board (EFSEC) on behalf of Bechtel and the Cherry Point Cogeneration Project, Bellingham, WA, 2003. Permitting support for a proposed combined cycle power plant facility.

Before the Public Service Commission of West Virginia on behalf of the Longview Power Project near Morgantown, WV, 2006. Permitting support for a proposed coal-fired power plant facility.

Before the Pennsylvania Department of Environmental Protection on behalf of Waste Management and the Alliance Sanitary Landfill in Taylor, PA, 2006. Support in defending against a Class Action Lawsuit brought by neighbors of the landfill.

Before the Office of the Attorney General of New York on behalf of the Hudson Valley Community College Cogeneration (Diesel) Plant. Support in defending against a Class Action Lawsuit brought by neighbors.

Before the Hanover County (VA) Board of Supervisors on behalf of Martin Marietta Materials and the Doswell Quarry, 2008. Permitting support for a proposed quarry expansion.

Before the New Hampshire Site Evaluation Committee on behalf of Granite Reliable Power, LLC, 2008. Permitting support for a proposed wind turbine project in Northern New Hampshire.

Before the Public Utilities Commission of Ohio, Ohio Power Siting Board on behalf of EverPower Renewables and the Buckeye Wind Project, 2008. Permitting support for a proposed wind turbine project in Ohio.

Before the Wisconsin Public Service Commission on behalf of Clean Wisconsin with regard to the proposed Highland Wind Farm in Forest, WI. Docket No. 2535-CE-100. Engaged as an independent expert to evaluate the Applicant's sound studies and the testimony of opposition groups.

Before the Public Utilities Commission of Ohio, Ohio Power Siting Board on behalf of EverPower Renewables and the Buckeye II Wind Project, 2012. Permitting support for a proposed wind turbine project in Ohio.

Before the Maine State Government Energy, Utilities and Technology Committee on behalf of Patriot Renewables and the Beaver Ridge Wind Project, 2014. Peer review of operational sound testing by others.

Before the South Dakota Public Utilities Commission on behalf of the Commission Staff to review the noise aspects of the application for the Crocker Wind Farm Project. Docket EL17-055. April 2018.

Before the South Dakota Public Utilities Commission on behalf of the Commission Staff to review the noise aspects of the application for the Dakota Range Wind Project. Docket EL18-003. April 2018.

Before the Rhode Island Energy Facility Siting Board, serving as an outside expert to the Town of Burrillville, RI reviewing the noise aspects of the Clear River Energy Center permit application, Docket SB-2015-06, December 2018.

Before the South Dakota Public Utilities Commission, serving as an outside expert to the PUC Staff reviewing the noise aspects of the Deuel Harvest Wind Project permit application, Docket EL18-053, April 2019.

BEFORE THE
NEW YORK STATE
SITING BOARD ON ELECTRIC GENERATION SITING
AND THE ENVIRONMENT

Application of Danskammer Energy, LLC for a Certificate of Environmental Compatibility and Public Need Pursuant to Article 10 for Approval to Repower its Danskammer Generating Station Site Located in the Town of Newburgh, Orange County	)	Case No.: 18-F-0325

PRE-FILED TESTIMONY OF WESTON HILLEGAS

ON BEHALF OF

DANSKAMMER ENERGY, LLC

Q. Please state your name, employer, position and business address.

A. My name is Weston Hillegas. I am currently employed by TRC as a Wetland Scientist and Staff Biologist. My business address is 1099 Wall Street West Suite 250B, Lyndhurst, NJ 07071.

Q. How long have you been employed with TRC?

A. I have been employed by TRC since November 2018.

Q. On whose behalf are you testifying?

A. I am testifying on behalf of Danskammer Energy, LLC ("Danskammer" or "the Applicant").

Q. Please describe your educational background and professional experience.

I have a Bachelor of Science degree from The Pennsylvania State University in Wildlife and Fisheries Science. My experience includes environmental consulting for clients, generally in the energy sector. A copy of my resume is attached.

Q. Please describe your current responsibilities with TRC.

A. As a Wetland Scientist and Staff Biologist, my responsibilities include ecological surveys, reporting, and permitting. In addition to my role as a Wetland Scientist and Staff Biologist, since joining TRC, I have worked with the New York State Department of Environmental Conservation, New Jersey Department of Environmental Protection, United States Army Corps of Engineers (USACE), and with private developers on various projects, including the repowering project proposed by Danskammer (the "Project").

Q. Have you testified in other proceedings before the New York State Public Service Commission or Siting Board on Electric Generation?

A. No.

Q. Have you previously served as an expert witness before any other court, agency, or other body on the subject you plan to offer testimony on today?

A. No.

Q. What is the purpose and scope of your testimony in this proceeding?

A. As a Wetland Scientist and Staff Biologist for TRC, one of Danskammer's consultants for the Project, I have been responsible for performing ecological surveys and wetland delineations related to Exhibits 22 and 23 for the Project.

Q. What portion(s) of the Application is your testimony sponsoring?

A. I am a member of the Panels sponsoring the following Exhibits of Danskammer's Article 10 Application: Exhibits 22 and 23.

Q. Were these portion(s) of the Application mentioned in the paragraph above prepared by you or under your direction and supervision?

A. Yes.

Q. In your testimony, will you refer to, or otherwise rely upon, any studies, publications, data or documents produced by persons other than yourself/your company? If so, please cite these sources.

A. Yes. References to sources of information that have not been directly prepared by me or TRC are referenced in the above-referenced Exhibits, as applicable.

Q. Does this complete your testimony?

A. Yes.

Weston S. Hillegas

Wetland Scientist/Staff Biologist

CREDENTIALS

Education:

- B.S., Wildlife and Fisheries Science, The Pennsylvania State University, 2010

Professional Registrations/Certifications/ Training:

- Wetland Delineation Training Certification: 38-hour 4 days (Richard Chinn Environmental Training, Inc.)
- Health and Safety Training 40-hour (OSHA 29 CFR 1910.120)
  Annual 8-hour refresher

Weston Hillegas has over 9 years of experience as a project environmental scientist who specializes in environmental investigations including wetland and streams, hazardous and non-hazardous remediation, tree and plant identifications, and rare, threatened and endangered plant species surveys. In New York, he has experience with wetlands delineations, threatened and endangered (T&E) species studies and avoidance related to battery energy storage systems (BESS), wind, natural gas facilities and pipeline projects. He has assisted in Federal Energy Regulatory Commission (FERC) package applications. Among these specialties, he has experience in Pennsylvania with section 404 and chapter 105 permitting. In New Jersey, he has experience with wetland permitting and LOI application permitting with the Jew Jersey Department of Environmental Protection (NJDEP). Working with clients on linear utility projects, he has conducted on-site environmental routing and prepared corresponding wetland delineation reports required for the various permitting processes. Experience in groundwater sampling, air monitoring, wetland mitigation/monitoring and remedial investigations lends to his well-rounded background. In executing projects, Mr. Hillegas demonstrates a strong knowledge in wildlife sciences, remediation and environmental resource management with strong leadership and oversight skills. Mr. Hillegas has experience on largescale hazardous waste cleanup projects where he has led the health and safety, drilling oversight, construction management, air monitoring, erosion and sediment control inspections, and sampling/lab coordination. He currently serves in the capacity of Wetland Scientist/Staff Biologist. He has professional training and experience in wetland and stream delineations, wildlife sciences, environmental assessments, and regulatory compliance and permitting.

EXPERIENCE

Professional Summary:

- Nine years of environmental consulting and technical experience largely in the energy infrastructure and remediation industries.

Areas of Expertise:

- Wetland and Waterbody Delineations
- Ecological Surveys
- Environmental Reporting and Permitting

PROJECT EXPERIENCE

BESS Projects – NY (Wetland Scientist/Staff Biologist: 2019)

Mr. Hillegas conducted site wetland and stream delineations for numerous BESS projects in New York State and has worked with clients to help avoid complicated permitting processes through the design stage. He prepared comprehensive wetland delineation reports to help his clients better understand the restraints posed by natural resources as well as recommendations to avoid conflicts that may arise from the development in and around protected natural resources. Several of the BESS projects were on Long Island, NY. He has consulted with the United States Fish and Wildlife Services and New York Natural Heritage Program in navigating projects through restrictions regarding T&E species.

Solar Projects – NY (Wetland Scientist/Staff Biologist: 2019)

Mr. Hillegas conducted wetland delineations and T&E surveys for solar development projects in NY. He wrote wetland delineation reports relating to the development of solar projects and also gave recommendations in the design stages to help clients avoid complicated permitting processes. Mr. Hillegas congruently would survey the proposed land area for any concerns regarding special habitat for potential T&E species.

Millennium Pipeline, Columbia Gas – NY (Wetland Scientist/Staff Biologist: 2019)

Mr. Hillegas conducted stream and wetland investigations along an approximate 10-mile pipeline right-of-way and access roads. He prepared comprehensive wetland delineation reports and coordinated with the USFWS to avoid and comply with T&E species that were potentially present. This project fell under the client's nationwide permit and all guidelines and regulations associated with the permit were followed to help the client comply in a timely fashion.

PROJECT EXPERIENCE (continued)

Colonial, Pipeline Maintenance Projects – NJ and NY (Wetland Scientist/Staff Biologist: 2018)

Mr. Hillegas conducted site reconnaissance and wetland and stream delineations for multiple sections of proposed pipeline maintenance, AC mitigation, and linear anode installation. He prepared regulatory compliance data for state regulatory agencies and worked with the client on site to determine the most efficient approach to proposed work scope.

TE Connectivity Ltd., ISRA Preliminary Assessments – Eatontown and Mt. Olive, NJ (Senior Environmental Scientist: 2018)

Mr. Hillegas conducted due diligence with regards to the NJDEP site remediation program – Preliminary Assessment. He submitted OPRA requests to the townships and county where the property was located and researched the property based on historic public records. Mr. Hillegas conducted site assessments and documented any potential areas of concern based on the NJDEP Preliminary Assessment Technical Guidance, N.J.A.C. 7:26E.

Confidential Client, Remediation Construction Management Services – Avenel, NJ (Senior Environmental Scientist: 2018)

Mr. Hillegas conducted soil borings, groundwater sampling, monitoring well installation, and data interpretation for a PFAS remediation site. He also coordinated with the Township of Woodbridge to obtain pertinent permits for conducting the work quickly.

PPG, Remediation Construction Management Services – Jersey City, NJ (Senior Environmental Scientist: 2014-2017)

Mr. Hillegas conducted soil borings, groundwater sampling, weekly inspections, and site safety compliance during the pre-remedial, during excavation and post remedial phases for several sites. He acted on behalf of the client to monitor that work was performed safely. He identified the contamination of concern (hexavalent chromium) and collected post-excavation soil samples. Mr. Hillegas provided oversight for the waste management of hazardous and non-hazardous soil loadout. The soil loadout and waste water discharge disposal consisted of manifest tracking daily. Mr. Hillegas conducted a weekly inspection of the erosion and sediment controls throughout the remediation process. He completed subsequent data interpretation and filed submissions through the NJ Hazsite/EDD system. Completed remedial action reports.

EnviroFinance Group, LLC, Wetland Mitigation Bank – Bergen County, NJ (Senior Environmental Scientist: 2012-2017)

Mr. Hillegas conducted yearly monitoring of the 237-acre freshwater and tidal mitigation bank in the Hackensack Meadowlands area. Completed fish tissue and sediment sampling and analysis as well as freshwater and tidal wetland studies. Work included developing a monitoring plan for 85-percent plant coverage in 5 years.

U.S. Navy, Wetland Mitigation – St. Julien's Creek, VA (Senior Environmental Scientist: 2013)

Mr. Hillegas was part of a team who helped design a wetland mitigation stormwater retention site and plant over 10,000 wetland plant species for the U.S. Navy at St. Julien's Creek Annex.

NRG Energy, Wetland Mitigation – Dagsboro, DE (Senior Environmental Scientist: 2013)

Mr. Hillegas was part of a team who helped design a wetland mitigation sill stabilization site and plant over 3,000 wetland plant species for NRG Energy at the Indian River facility.

Williams, Environmental Site Assessments – PA (Senior Environmental Specialist: 2011)

Site evaluation and assessment, Lawrence county and Butler County, PA Confluence projects: Conducted desktop (GIS-based) environmental assessments of 15 potential site locations for a natural gas processing plant based on environmental, zoning, engineering, and other relevant criteria.

Williams Midstream Services, Linear Environmental Surveys – PA and WV (Senior Environmental Specialist: 2010-2012)

Mr. Hillegas led field work for stream and wetland delineations for numerous natural gas transmission and gathering lines in northeast Pennsylvania and West Virginia. He completed post-construction wetland monitoring. Mr. Hillegas prepared wetland delineation and stream identification reports with the relevant permits for the client. He worked as a team to complete road crossing permits for numerous natural gas pipeline projects in Southwestern Pennsylvania. In addition, Mr. Hillegas worked closely with the Pennsylvania DOT and local authorities to obtain the bonds and permits necessary for township and state crossings of natural gas pipelines on roads.

Chesapeake Energy, Linear Environmental Surveys – PA and WV (Senior Environmental Specialist: 2010-2012)

Mr. Hillegas conducted dozens of permitting and erosion/sediment control compliance audits. He completed environmental clearance packages, mapped data, and delineated natural resources including jurisdictional streams and wetlands.

Allegheny Power, Linear Environmental Surveys – WV (Senior Environmental Specialist: 2011)

Mr. Hillegas led field work for the Sutton-Bays Project in Braxton Co. WV, a 138-kV rebuild for Allegheny Power Inc. He performed stream and wetland investigations along transmission right-of-way and access roads. Mr. Hillegas located and identified RTE species including puttyroot (*Aplectrum hyemale*), cranefly orchid (*Tipularia discolor*), and downy rattlesnake plantain (*Goodyera pubescens*).

Dominion Transmission, Linear Environmental Surveys – PA (Environmental Specialist: 2010)

Mr. Hillegas performed post-construction wetland monitoring for the Dominion Transmission, Inc. PL-1 Pipeline Project in Center County, PA and the Dominion TL-453 and TL-536 Pipeline Projects located in Potter County, PA. He assisted in RTE plant species field surveys for the TL-492 project. He also assisted on the Appalachian Gateway TL-590 and TL-591 Project rerouting around wetlands.

Columbia Gas Transmission, LLC, Linear Environmental Surveys – PA (Environmental Specialist: 2010)

Line 1278 – Line K Project (Pike County, PA and Orange County, NY) FERC environmental report documentation and Project permitting (PA Section 404/Chapter 105 Joint Permit Application and USACE/NYSDEC Joint Permit Applications). Assisted in RTE plant species surveys.

BEFORE THE
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PRE-FILED TESTIMONY OF MICHELLE HOOK

ON BEHALF OF

DANSKAMMER ENERGY, LLC

Q. Please state your name, position and business address.

A. My name is Michelle Hook. I currently serve as Danskammer Energy, LLC's Vice President of Public Affairs. My business address is 994 River Road, Newburgh, NY.

Q. How long have you held this position with Danskammer Energy, LLC?

A. I have served in this position since February 2019.

Q. On whose behalf are you testifying?

A. I am testifying on behalf of Danskammer Energy, LLC ("Danskammer" or "the Applicant").

Q. Please describe your educational background and professional experience.

I have a bachelor's degree from the University of Maryland in Journalism and a Master's degree from SUNY Albany in Political Communication. My experience includes local, state, and federal government relations, media relations, and community outreach. In addition, I have worked as a journalist at numerous network affiliates across the United States. A copy of my bio is attached.

Q. Please describe your current responsibilities with Danskammer.

A. As Vice President of Public Affairs for Danskammer, my responsibilities include managing all communication with local municipalities and state and federal elected officials and other stakeholders in the region of Danskammer's repowering project (the "Project"), communicating with local media outlets with Project updates, and developing strategies and messaging for all informational handouts and public presentations. Since joining Danskammer, I have held meetings with federal, state, and local officials, as well as other community stakeholders like fire departments, police departments, community not-for-profits, and environmental groups.

Q. Have you testified in other proceedings before the New York State Public Service Commission or Siting Board on Electric Generation?

A. No.

Q. Have you previously served as an expert witness before any other court, agency, or other body on the subject you plan to offer testimony on today?

A. No.

Q. What is the purpose and scope of your testimony in this proceeding?

A. As the Vice President of Public Affairs for Danskammer, I am responsible for managing all external communications with Project stakeholders.

Q. What portion(s) of the Application is your testimony sponsoring?

A. I am a member of the panel sponsoring Exhibit 2.

Q. Were these portion(s) of the Application mentioned in the paragraph above prepared by you or under your direction and supervision?

A. Yes.

Q. In your testimony, will you refer to, or otherwise rely upon, any studies, publications, data or documents produced by persons other than yourself/your company? If so, please cite these sources.

A. Yes. References to sources of information that have not been directly prepared by me or the Danskammer's team of service providers are provided in the above-referenced Exhibits, as applicable.

Q. Does this complete your testimony?

A. Yes.

Michelle Hook
Communications, Public Relations, Community and Government Affairs

- Nearly 20 years of experience in communications.
- Served as Director of Public Relations and Community Outreach for Millennium Pipeline Company, coordinating communications and outreach efforts across Millennium's footprint, overseeing all government and media relations.
- Served in a variety of roles in the New York government including, Deputy Communications Director for Public Safety in Governor Andrew Cuomo's administration as well as Deputy Press Secretary for Attorney General Eric Schneiderman.
- Worked as a television news anchor and reporter at various network affiliates across the U.S., including WRGB CBS 6 Albany.
- Bachelor's degree in journalism from the University of Maryland; graduate degree in political communication from SUNY Albany.

BEFORE THE
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AND THE ENVIRONMENT

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PRE-FILED TESTIMONY OF MATTHEW G. HYLAND, PH.D.

ON BEHALF OF

DANSKAMMER ENERGY, LLC

Q. Please state your name, employer, position and business address.

A. My name is Matthew G. Hyland. I am currently employed by TRC as a Senior Architectural Historian. My business address is 2200 Liberty Avenue, Suite 100, Pittsburgh, Pennsylvania, 15222.

Q. How long have you been employed with TRC?

A. I have been employed by TRC since September 2018.

Q. On whose behalf are you testifying?

A. I am testifying on behalf of Danskammer Energy, LLC ("Danskammer" or "the Applicant").

Q. Please describe your educational background and professional experience.

I have a Bachelor of Arts degree in American Studies from University of Notre Dame du Lac, a Master's degree in American Studies from the University of Wyoming and a doctoral degree in American Studies from the College of William & Mary. My experience includes public history and American architectural history. In addition, I have worked as a college professor and museum educator.

Q. Please describe your current responsibilities with TRC.

A. As a Senior Architectural Historian, my responsibilities include studies relating to above-ground cultural resources, historic research, and historic architecture assessments. As a Senior Architectural Historian, my qualifications exceed the standards for professional historian and architectural historian set by the Secretary of the Interior. Since joining TRC, I have worked with state agencies and private developers.

Q. Have you testified in other proceedings before the New York State Public Service Commission or Siting Board on Electric Generation?

A. No.

Q. Have you previously served as an expert witness before any other court, agency, or other body on the subject you plan to offer testimony on today?

A. No.

Q. What is the purpose and scope of your testimony in this proceeding?

A. As a Senior Architectural Historian for TRC, one of Danskammer's consultants for its proposed repowering project (the "Project"), I have been responsible for compliance with state and federal historic preservation guidelines relating to permitting processes for the Project.

Q. What portion(s) of the Application is your testimony sponsoring?

A. I am a member of the Panel sponsoring the following Exhibit of Danskammer's Article 10 Applications: Exhibit 20.

Q. Were these portion(s) of the Application mentioned in the paragraph above prepared by you or under your direction and supervision?

A. Yes.

Q. In your testimony, will you refer to, or otherwise rely upon, any studies, publications, data or documents produced by persons other than yourself/your company? If so, please cite these sources.

A. No.

Q. Does this complete your testimony?

A. Yes.

Matthew G. Hyland, PhD

Senior Architectural Historian

CREDENTIALS

Education:

- Ph.D., American Studies, College of William and Mary, 2004
- M.A., American Studies, University of Wyoming, 1995
- B.A., American Studies, University of Notre Dame du Lac, 1989 Professional

Registrations/Certifications/ Training:

- Exceeds the Secretary of the Interior's Professional Qualification Standards (36 CFR § 61) for Architectural Historians and Historians.
- Section 106 Training, Ohio Department of Transportation, Columbus, Ohio, 2006 OES Section 106 Training Module 1 and Module 2, completed December 2018
- Section 106: Resolving Adverse Effects and Writing Agreement Documents, PennDOT, 2018
- Byways to the Past: Cultural Resource Management Workshop, PennDOT and Preservation 2018

Dr. Matthew Hyland has over 16 years of experience in architectural history, historic preservation, and public history education in the Mid-Atlantic region. He is responsible for the full range of Section 110 and Section 106 aboveground compliance projects including historic resource surveys, National Register eligibility evaluations, effects determinations, preservation treatments, and mitigation of adverse effects. Dr. Hyland's experience in the transportation industry also includes Section 4(f) evaluations. His work experience includes cultural resource management projects within the states of NY, WV, PA, KY, VA, MD, and DE.

EXPERIENCE

Professional Summary:

- 16 years of experience in architectural history, historic preservation, and public history education.

Areas of Expertise:

- Cultural Resource Surveys, aboveground historic resources
- Section 106 Determinations of Eligibility and Effects
- Resolution of Adverse Effects, Consulting Party solicitations
- Section 4(f) Evaluations

PROJECT EXPERIENCE

Architectural History Survey, 280-MW Solar Project, Town of Byron, Genesee County, NY

Preliminary documentation of a solar energy facility for possible impacts to historic properties in a 2-mile-radius study area and reconnaissance survey workplan development, including Criteria of Adverse Effect assessment, in support of Exhibit 20 (Cultural Resources) for Public Service Law Article 10 proceeding.

Architectural History Survey, 80-MW Solar Project, Town of Waterloo, Seneca County, NY

Preliminary documentation of a solar energy facility siting study, including potential impacts to historic properties in a 2-mile-radius study area and workplan preparation for reconnaissance survey in support of Exhibit 20 (Cultural Resources) for Public Service Law Article 10 proceeding.

Architectural History Survey, 50-MW Solar Project, Town of Dix, Schuyler County, NY (2019)

Preliminary documentation and OPRHP consultation for a solar energy facility siting study with focus on potential impacts to historic properties in a 2-mile-radius study area, including workplan preparation for reconnaissance survey for historic properties in support of Exhibit 20 (Cultural Resources) for Public Service Law Article 10 proceeding.

Architectural History Survey, 90-MW Solar Project, Town of Florida, Montgomery County, NY (2019)

Fully documented solar energy facility potential impacts to historic properties in a 2-mile-radius study area and reconnaissance survey for historic properties, with Criteria of Adverse Effect assessment, documented 100 historic properties in support of Exhibit 20 (Cultural Resources) for Public Service Law Article 10 proceeding.

Architectural History Survey, 50-MW Solar Project, Town of Sharon, Schoharie County, NY (2019)

Photodocumentation and evaluation of historic resources within the Area of Potential Effect (APE) of solar energy development project in downstate New York in support of Exhibit 20 (Cultural Resources) for Article 10 New York State Public Service Commission environmental documentation.

PROJECT EXPERIENCE (continued)

Architectural History Survey, Gardenville-Dunkirk 141/142 Northern Rebuild and Conductor Project, Erie County, NY (2019)

Fully documented transmission line corridor survey for historic properties and Criteria of Adverse Effect assessment, documented 15 historic properties.

Columbia Gas Transmission, Inc., Crawford Expansion Ohio Storage Project, Hocking, Fairfield, and Jackson Counties, OH (Architectural Historian)

Coordinated multi-county, aboveground Cultural Resources Survey and Inventory project that included photographic documentation, resource mapping, and research to meet state and federal cultural resource survey guidelines.

American Electric Power, Local Transmission Line Siting Study, Delaware County, Ohio (Architectural Historian)

Conducted Cultural Resource Data Collection, historic research, field work, and completed Architectural and Historical Resource Survey.

HUB II Project, Historic Resources Survey, Chemung and Steuben Counties, NY (2007)

Completed a historic resources survey, field work, methodology, and NRHP assessment for natural gas pipeline siting study.

Margaret Street over Dead Creek, Historic Architecture Survey, Plattsburgh, Clinton County, NY (2002)

Supported Phase IA archaeological and historic resource survey with field work, site file research, and photography for a bridge reconstruction project.

Kopperston Historic District Survey for Ralston Branch No. 2 Bridge Replacement Project, Wyoming County, WVDOH (2019)

Completed a comprehensive survey for 277 historic resources, including intensive-level research, field work, methodology, HPI records, NRHP assessment, and criteria of adverse effects recommendation for bridge replacement project. Fully documented Kopperston, a noteworthy, Depression-era, model coal company town built by the Koppers Company of Pittsburgh, Pennsylvania. The bridge was determined not eligible, and the project resulted in no effect to the NRHP-eligible historic district.

Van Voorhis Road Improvements Project, Monongalia County, WVDOH (2019)

Completed a reconnaissance-level survey, including background research, field work, methodology, and three HPI records in a suburban area of Morgantown, resulting in a no effect recommendation for the roadway improvement project.

Historic Architectural Survey for the Raines Corner Slab Bridge Project, Monroe County, WVDOH (2019)

Completed all aspects of background research, field work, methodology, three HPI records, and NRHP recommendations for investigation of a bridge replacement project with no effect on historic architectural resources.

Historic Architectural Survey for the Ruthbelle Slab Bridge Project, Preston County, WVDOH (2019)

Completed all aspects of background research, deed research, field work, methodology, and NRHP recommendations for a bridge replacement project. Survey identified three resources: the Ruthbelle Slab Bridge (PR-0241), the Morgan House (PR-1072), and the Felton House (PR-1073). The bridge had been previously determined not eligible for NRHP listing. The Felton House was recommended not eligible for NRHP listing. The Morgan House was recommended eligible for NRHP listing. The project concluded with no effect on historic properties.

Matoaka Historic District Survey and Bridges Recordation for the WV 10 Operational Improvements Project, US Route 19/Beckley Road near Kegley to Wyoming County Line, Mercer County, WVDOH (2018)

Completed a comprehensive survey of 91 contributing properties and 31 non-contributing resources, including background research, field work, methodology, HPI records, historic district update, and NRHP boundary recommendation, and two state-level bridge recordations, for successful completion of two bridge replacement projects.

Historic Architectural Survey for the Kanawha Falls Bridge Project, Fayette County, WVDOH (2019)

Completed a comprehensive survey, including background research, field work, methodology, and HPI records for 11 historic resources, and an intensive-level, state-level recordation of the Kanawha Falls Bridge for the project.

Historic Architectural Survey for the Kanawha Falls Road Improvement Project, Fayette County, WVDOH (2019)

Completed a comprehensive survey, including background research, field work, methodology, 11 HPI records for a roadway improvement project.

PROJECT EXPERIENCE (continued)

Historic Architectural Survey for the I-70 Bridges Project, Ohio County, WVDOH, 2019

Completed all aspects of background research, field work, methodology, and NRHP recommendations for investigation of historic resources in the APE of three Interstate 70 bridges. Findings of no effect for a historic railroad tunnel and a historic district.

Historic and Architectural Resources Survey and Determination of Eligibility, Twin Branch Truss No. 2 Project, McDowell County, WV - State Project S224-7-5.32 D (2018)

Completed all aspects of background research, field work, methodology, HPI records for 14 resources, including NRHP recommendations for two truss bridges, a tunnel, and two culverts.

West Virginia Department of Highways/West Virginia Division of Culture and History (WVDCH) Coal Heritage Survey Update, McDowell County, WV, for Aurora Research Associates, LLC (2016-2018)

Part of team that surveyed over 2,000 historic coal-related resources.

WVDCH Five County Survey - Mason, Lincoln, Jackson, Pleasants, and Wayne Counties, WV, for Aurora Research Associates, LLC (2017)

Part of a team that surveyed approximately 750 historic resources.

Historic Resource Survey and Determination of Effect, Wiggins Bridge Replacement Project, Summers County, WV (2002)

Wiggins Bridge Replacement Project, State-level Recordation, Summers County, WV (2003)

Historic Structure Report for the General Albert Gallatin Jenkins House, Green Bottom, Cabell County, WV for the US Army Corps of Engineers and its lessee, WVDCH (2006)

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PRE-FILED TESTIMONY OF MICHAEL D. KELLER

ON BEHALF OF

DANSKAMMER ENERGY, LLC

Q. Please state your name, employer, position and business address.

A. My name is Michael D. Keller. I am currently employed by TRC as a Principal – Power Generation and Air Quality and Office Practice Leader. My business address is 1099 Wall Street West, Suite 250B, Lyndhurst, NJ 07071.

Q. How long have you been employed with TRC?

A. I have been employed by TRC since February 2000.

Q. On whose behalf are you testifying?

A. I am testifying on behalf of Danskammer Energy, LLC ("Danskammer" or "the Applicant").

Q. Please describe your educational background and professional experience.

I have a Bachelor of Science degree from North Carolina State University, with a major in Meteorology and minors in Environmental Science and Business Management. My experience has included progressive responsibility for technical analyses and project management encompassing Prevention of Significant Deterioration/New Source Review air quality modeling and permitting, predominantly for fossil fuel-fired power generation clients, including independent power producers and electric utilities. In addition, I have worked as a Senior Project Manager, Project Manager, Air Quality Meteorologist, and Associate Air Quality Scientist during my 19-year career at TRC. A copy of my resume is attached.

Q. Please describe your current responsibilities with TRC.

A. As an Office Practice Leader, my responsibilities include managing a multi-disciplinary team of environmental professionals (located in New Jersey and Pennsylvania) that execute and support projects in the energy sector. In addition to my role as an Office

Practice Leader, I also play a role as a Principal – Power Generation and Air Quality, collaborating with TRC's national Market Directors to support and expand the Power Generation and Air Quality Business lines. Since joining TRC, I have worked with federal (U.S. Environmental Protection Agency) and state (New York State Department of Environmental Conservation, New Jersey Department of Environmental Protection, Pennsylvania Department of Environmental Protection) agencies, and private developers and utilities in the energy sector.

Q. Have you testified in other proceedings before the New York State Public Service Commission or Siting Board on Electric Generation?

A. No.

Q. Have you previously served as an expert witness before any other court, agency, or other body on the subject you plan to offer testimony on today?

A. No.

Q. What is the purpose and scope of your testimony in this proceeding?

A. As the Deputy Project Manager for TRC, Danskammer's environmental consultant for this Project, I have been responsible for assisting the Project Manager for TRC in the preparation and assembly of the Article 10 Application exhibits for the Project.

Q. What portion(s) of the Application is your testimony sponsoring?

A. I am a member of the Panels sponsoring the following Exhibits of Danskammer's Article 10 Application: Exhibits 2, 9, 12, 15, 16, 17, 18, and 37.

Q. Were these portion(s) of the Application mentioned in the paragraph above prepared by you or under your direction and supervision?

A. Yes.

Q. In your testimony, will you refer to, or otherwise rely upon, any studies, publications, data or documents produced by persons other than yourself/your company? If so, please cite these sources.

A. Yes. References to sources of information that have not been directly prepared by me or TRC are referenced in the Article 10 application, where applicable.

Q. Does this complete your testimony?

A. Yes.

Michael D. Keller

Principal – Power Generation and Air Quality
Office Practice Leader

CREDENTIALS

Education:

- B.S., Meteorology, North Carolina State University
- Minors: Environmental Science, Business Management

Michael D. Keller is a Principal - Power Generation and Air Quality and Office Practice Leader with over 19 years of progressive responsibility for technical analyses and project management at TRC encompassing Prevention of Significant Deterioration (PSD)/New Source Review air quality modeling and permitting predominantly for fossil fuel-fired power generation clients. Mr. Keller has been involved in the permitting efforts of over 6,000 megawatts (MW) of simple cycle, combined-cycle, and coal-fired power generation projects in the northeast (NY, NJ, PA) and provided environmental support through critical issues analyses, dispersion modeling, emission estimates, and regulatory outreach for both independent power producers and electric utilities. Mr. Keller also serves as an office practice leader, client services manager, project manager, technical manager, and proposal manager to his clients.

Mr. Keller's recent efforts have been in support of combined-cycle gas turbine projects proceeding before the Pennsylvania Department of Environmental Protection and New Jersey Department of Environmental Protection.

EXPERIENCE

Professional Summary:

- Over 19 years of progressive responsibility for technical analyses and project management

Areas of Expertise:

- Project Management
- Environmental Permitting
- New Source Review - PSD Modeling and Permitting
- Critical Issues Assessments
- Regulatory Outreach
- Ambient Air Quality and Meteorological Monitoring/Meteorological Audits
- Multisource Modeling Emissions Inventory Compilation

PROJECT EXPERIENCE

Confidential Client, PSD Permitting – Middlesex County, NJ (2016 – Present)

Mr. Keller is a team member of an air quality permitting effort for a 630-MW natural gas-fired 1-on-1 combined-cycle electric power generating facility consisting of one General Electric (GE) 7HA.02 combustion turbine, one heat recovery steam generator (HRSG) equipped with a natural gas-fired duct burner for supplementary firing, and one steam turbine generator.

Middlesex Energy Center, LLC, PSD Permitting – Sayreville, NJ (2014 – 2016)

Mr. Keller served as the Project Manager and led the permitting effort for a 560-MW natural gas and ultra-low sulfur diesel-fired 1-on-1 combined-cycle electric power generating facility consisting of one GE 7HA.02 combustion turbine, one HRSG equipped with a natural gas-fired duct burner for supplementary firing, and one steam turbine generator. Air quality dispersion modeling analyses determined insignificant impacts in the local area for CO and SO_2. NO_2, PM-2.5, and PM-10 emissions yielded significant impacts in the local area. Therefore, multisource National Ambient Air Quality Standards (NAAQS) and PSD Class II increment modeling analyses were conducted to show that the proposed facility did not exceed or significantly contribute to an exceedance of the NAAQS or PSD Class II increments. The permitting effort also involved securing the wastewater discharge permit for the Project from the Middlesex County Utilities Authority.

Confidential Client, PSD Permitting – Shamokin Dam, PA (2015 – Present)

Mr. Keller is serving as the Project Manager and leading the air quality permitting effort for a 1,200-MW natural gas-fired combined-cycle electric power generating facility consisting of two H- or J-class combustion turbines, two HRSGs equipped with natural gas-fired duct burners for supplementary firing, and two steam turbine generators.

1099 Wall Street West, Suite 250B, Lyndhurst, New Jersey, USA, 07071
Tel: 201.508.6954 Email: mkeller@trccompanies.com

PROJECT EXPERIENCE (continued)

Caithness Long Island II, LLC, PSD and SEQRA Permitting – Brookhaven, NY (2013 – Present)

Mr. Keller is a team member of an air quality permitting effort for a 752-MW primarily natural gas-fired 2-on-1 combined-cycle electric power generating facility consisting of two GE 7FA.05 combustion turbines, two HRSGs equipped with natural gas-fired duct burners for supplementary firing, and one steam turbine generator. Air quality dispersion modeling analyses determined insignificant impacts in the local area for CO, SO_2, and PM-10. NO_2 and PM-2.5 emissions yielded significant impacts in the local area. Therefore, multisource NAAQS and PSD Class II increment modeling analyses will be conducted to show that the proposed facility does not exceed or significantly contribute to an exceedance of the NAAQS or PSD Class II increments.

Panda Hummel Station, State Permitting – Shamokin Dam, PA (2011 – 2015)

Mr. Keller served as Project Manager and led the air quality permitting effort for a 1,000-MW combined-cycle gas turbine project located at an existing coal-fired power facility site. The permitting effort involved securing an Air Plan Approval. This project consists of three natural gas-fired F-class combustion turbines coupled with three HRSGs, one steam turbine, and a wet mechanical draft cooling tower. The existing coal-fired boilers have been shut down and retired.

KeySpan Energy, Port Jefferson Energy Center, Air Permitting – Village of Port Jefferson, NY (2001)

Mr. Keller was a team member of an air quality permitting effort for a 79.9-MW simple cycle combustion facility consisting of two GE Frame LM6000 Sprint turbines. Various stack heights and operating scenarios were modeled to determine the stack height that would result in insignificant impacts in the local area.

KeySpan Energy, Glenwood Landing Energy Center, Air Permitting – Town of Oyster Bay, NY (2001)

Mr. Keller was a team member of an air quality permitting effort for a 79.9-MW simple cycle combustion facility consisting of two GE Frame LM6000 Sprint turbines. Various stack heights and operating scenarios were modeled to determine the stack height that would result in insignificant impacts in the local area.

New York Power Authority, PSD and Article X Permitting – Astoria, Queens, NY (2000 – 2001)

Mr. Keller was a team member of an air quality permitting effort for a 500-MW combined-cycle cogeneration facility consisting of two GE Frame 7FA turbines. Multiple operating scenarios, stack configurations, and fuel types were modeled to determine the optimum combination to yield insignificant impacts in the local area. The permitting effort also included a human health risk assessment for potential emissions of toxic air pollutants from the proposed facility for the New York State Article X Regulations and an environmental justice study.

KeySpan Energy, PSD and Article X Permitting – Long Island City, Queens, NY (2000)

Mr. Keller was a team member of an air quality permitting effort for a 250-MW combined-cycle cogeneration facility consisting of one GE Frame 7FA turbine. Multiple operating scenarios, stack configurations, and fuel types were modeled to determine the optimum combination to yield insignificant impacts in the local area. The permitting effort also included a human health risk assessment for potential emissions of toxic air pollutants from the proposed facility for the New York State Article X Regulations and an environmental justice study.

Mirant Bowline, PSD and Article X Permitting – Rockland County, NY (2000 – 2001)

Mr. Keller was a team member of an air quality permitting effort for a 750-MW combined-cycle cogeneration facility consisting of three GE Frame 7FA turbines. Multiple operating scenarios, stack configurations, and fuel types were modeled to determine the optimum combination to yield insignificant impacts in the local area. The permitting effort also included a human health risk assessment for potential emissions of toxic air pollutants from the proposed facility for the New York State Article X Regulations and an environmental justice study.

Wawayanda Energy Center, LLC (a subsidiary of Calpine Corporation), PSD and Article X Permitting – Wawayanda, NY (2000 – 2001)

Mr. Keller was a team member of an air quality permitting effort for a 540-MW natural gas-fired combined-cycle electric power generation facility consisting of two GE Frame 7FB combustion turbines. Various operating scenarios were modeled to determine the optimum combination to yield insignificant impacts in the local area.

PUBLICATIONS AND PRESENTATIONS

Keller, Michael, “7 Key Steps to a Successful Combustion Turbine Upgrade”, TRC Blog, May 1, 2018.

Malley, Ed, Keller, Michael, “For Aging Power Plants, Replacement Offers Clear Path Forward”, Pipeline and Gas Journal, April 2016, Vol. 243, No. 4.

Keller, Michael, “Challenges Associated with Adding Dual-Fuel Capability at Existing Combustion Turbine Power Plants”, Presented at the Energy, Utility, and Environment Conference (EUEC2016), San Diego, CA, February 2016.

Shotts, David J., Adduci, Carla M., Keller, Michael, “Air Quality Permitting Factors in Site Selection for Natural Gas Combined Cycle Power Plants”, Presented at the 106th Annual Meeting of the Air and Waste Management Association, Chicago, IL, June 2013.

BEFORE THE
NEW YORK STATE
SITING BOARD ON ELECTRIC GENERATION SITING
AND THE ENVIRONMENT

Application of Danskammer Energy, LLC for a Certificate of Environmental Compatibility and Public Need Pursuant to Article 10 for Approval to Repower its Danskammer Generating Station Site Located in the Town of Newburgh, Orange County	)	Case No.: 18-F-0325

PRE-FILED TESTIMONY OF MATTHEW A. KORN

ON BEHALF OF

DANSKAMMER ENERGY, LLC

Q. Please state your name, employer, position and business address.

A. My name is Matthew A. Korn. I am currently employed by The Chazen Companies as a Principal and Manager of Geotechnical Engineering Services. My business address is 547 River Street, Troy, NY 12180.

Q. How long have you been employed with The Chazen Companies?

A. I have been employed by The Chazen Companies since April 26, 2006.

Q. On whose behalf are you testifying?

A. I am testifying on behalf of Danskammer Energy, LLC ("Danskammer" or "the Applicant").

Q. Please describe your educational background and professional experience.

I obtained a Bachelor of Science in Civil and Environmental Engineering degree from the University of Massachusetts Amherst in 2001. My experience includes preparing and overseeing subsurface programs and preparation of geotechnical interpretive reports, designing retaining walls, and slope stabilization measures. I have gained experience and assumed progressive responsibilities over my career starting as an Assistant Project Engineer, then as a Project Engineer/Project Manager and currently as a Manager of Geotechnical Engineering Services at The Chazen Companies. A copy of my resume is attached.

Q. Please describe your current responsibilities with The Chazen Companies.

A. As a Manager of Geotechnical Engineering Services, my responsibilities include preparation and coordination of field staff to advance subsurface investigations and review and certification of geotechnical interpretive reports prepared by engineers under my supervision. Additionally, I design and prepare construction-level documents for

foundations, retaining walls and slope stabilization measures and prepare related technical specifications. I am licensed by the University of the State of New York Education Department as a geotechnical engineer. Since joining The Chazen Companies, I have worked with federal, state, and local agencies, private developers, commercial entities, utilities, community groups, and stakeholders for various projects, including the repowering project proposed by Danskammer (the "Project").

Q. Have you testified in other proceedings before the New York State Public Service Commission or Siting Board on Electric Generation?

A. No.

Q. Have you previously served as an expert witness before any other court, agency, or other body on the subject you plan to offer testimony on today?

A. No.

Q. What is the purpose and scope of your testimony in this proceeding?

A. As a New York State licensed geotechnical engineer for The Chazen Companies, one of Dansksammer's consultants for the Project, I have been responsible for reviewing the subsurface soil conditions at the Project Site and providing my professional opinion on how to advance the design of the proposed Project facilities from a geotechnical perspective.

Q. What portion(s) of the Application is your testimony sponsoring?

A. I am a member of the Panel sponsoring the following Exhibit of Danskammer's Article 10 Application: Exhibit 21.

Q. Were these portion(s) of the Application mentioned in the paragraph above prepared by you or under your direction and supervision?

A. Yes.

Q. In your testimony, will you refer to, or otherwise rely upon, any studies, publications, data or documents produced by persons other than yourself/your company? If so, please cite these sources.

A. Yes. References to sources of information that have not been directly prepared by me or the Chazen Companies are referenced in Exhibit 21, as applicable.

Q. Does this complete your testimony?

A. Yes.

EDUCATION

B.S., Civil and Environmental Engineering, University of Massachusetts

Graduate Studies, Geotechnical Engineering, University of Massachusetts

REGISTRATION

Professional Engineer
NY: #095161

TRAINING

OSHA Confined Space Entry Training

MATTHEW A. KORN, P.E.

Principal, Manager, Geotechnical Engineering Services

Mr. Korn has over 17 years of experience in the field of geotechnical engineering. As manager of geotechnical engineering services, responsibilities include preparation and coordination of field staff to advance subsurface investigations and review and certification of geotechnical reports prepared by engineers under his supervision. Additionally, he analyses and designs foundations for various structures and pavement sections, slope stability analyses, culverts and bridges, design of retaining walls, dam assessments and excavation support systems.

PROFESSIONAL EMPLOYMENT

The Chazen Companies — **April 2006 – Present**
Principal
Manager, Geotechnical Engineering Services (P.E.)
547 River Street, Troy, NY

Tierra Inc. — **Oct. 2002 – Nov. 2005**
Staff Engineer (E.I.T)
2736 Rowland Road, Raleigh NC

NYS Department of Transportation — **Summers 2000 & 2001**
Transportation Construction Inspector II
84 Holland Avenue, Albany NY

PROFESSIONAL EXPERIENCE SUMMARY

Transportation Construction Inspector – under the direction of a Engineer-in-Charge, experience included observing and verifying Contractors adhered to the certified construction plans prepared by the State. Additional roles including verifying quantiles for payment applications and performing soil compaction and concrete testing.

Geotechnical Engineer – Initial roles and responsibilities as a staff engineer included overseeing subsurface investigation programs and preparing geotechnical interpretive reports under the guidance of professional engineer and performing laboratory soil analyses. As he assumed progressive responsibility and experience, additional roles included designing foundations for various structures, providing pavement design recommendations, analyzing and preparing construction documents for slope stabilization measures and retaining walls, performing dam assessments, designing excavation support systems and preparing technical specification sections. Current roles and responsibilities included preparation and coordination of field staff to advance subsurface investigations and review and certification of geotechnical reports prepared by engineers under his supervision and providing design solutions to various geotechnical related projects at The Chazen Companies..

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BEFORE THE
NEW YORK STATE
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AND THE ENVIRONMENT

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PRE-FILED TESTIMONY OF JOHN LAGOMARSINO

ON BEHALF OF

DANSKAMMER ENERGY, LLC

Q. Please state your name, employer, position and business address.

A. My name is John Lagomarsino. I am currently employed by POWER Engineers, Inc. (POWER) as a Senior Project Manager and Area Lead for the Generation Consulting Group. My business address is 800 Kinderkamack Road, Oradell, New Jersey, 07649.

Q. How long have you been employed with POWER?

A. I have been employed at POWER since 2014. POWER acquired Burns and Roe Enterprises, Inc. in 2014, where I was employed since August 1980.

Q. On whose behalf are you testifying?

A. I am testifying on behalf of Danskammer Energy, LLC ("Danskammer" or "the Applicant").

Q. Please describe your educational background and professional experience.

I have a Master of Science from Columbia University in Mechanical Engineering and a Bachelor of Science from Columbia University in Mechanical Engineering. My experience includes project management, project conception through completion, project development support, owner engineering services, engineering economics and evaluation of technical factors most directly influencing economics, including plant performance and system planning. I have also worked extensively with the operation and maintenance of air pollution control systems. A copy of my resume is attached.

Q. Please describe your current responsibilities with POWER.

A. As a Senior Project Manager, my responsibilities include ensuring POWER's project team works efficiently in providing the advice and deliverables the project requires. In addition to my role as a Senior Project Manager, I also play an active role as POWER's Area Lead for Generation Consulting and oversee the work of several other Consulting

Project Managers. I am certified by the State of New Jersey as a Professional Engineer (PE), license number 24GE03000200. Since joining POWER, I have worked with owners and developers of major power generation facilities.

Q. Have you testified in other proceedings before the New York State Public Service Commission or Siting Board on Electric Generation?

A. No.

Q. Have you previously served as an expert witness before any other court, agency, or other body on the subject you plan to offer testimony on today?

A. No.

Q. What is the purpose and scope of your testimony in this proceeding?

A. As the Project Manager, I am responsible for managing the work of our project team to ensure that our advice and deliverables suit the client's need and are performed cost effectively. I also prepare deliverables and provide advice in areas affecting project economics.

Q. What portion(s) of the Application is your testimony sponsoring?

A. I am a member of the Panel sponsoring the following Exhibits of Danskammer's Article 10 Application: Exhibits 5, 7, and 13.

Q. Were these portion(s) of the Application mentioned in the paragraph above prepared by you or under your direction and supervision?

A. Yes.

Q. In your testimony, will you refer to, or otherwise rely upon, any studies, publications, data or documents produced by persons other than yourself/your company? If so, please cite these sources.

A. References to any such sources are provided in the above-referenced Exhibits, as applicable.

Q. Does this complete your testimony?

A. Yes.

JOHN LAGOMARSINO, P.E.

PROJECT MANAGER

YEARS OF EXPERIENCE
40

EDUCATION
- M.S., Mechanical Engineering, Columbia University, New York
- B.S., Mechanical Engineering, Columbia University, New York

AREAS OF EXPERTISE
- Project Management
- Project Conception Through Completion
- Owner Engineering Services

LICENSING
- P.E., Mechanical: New Jersey

AFFILIATIONS
- American Society of Mechanical Engineers

PUBLICATIONS
- “Design Feedback and Operating Experience of Supercritical 500 MW Korean Standard Plant,” PowerGen Asia 2006. Co-authored with Rey Shim of Korea Midland Power Company.
- "Installation, Operation and Testing of a Variable Pressure Operation Retrofit on Duquesne Light's Cheswich Station," Third International Conference on Coal-Fired Power Plants, 1991.
- "Electrostatic Precipitator Operating and Maintenance Cost Survey", Ninth Annual EPRI Particulate Control Symposium, 1991.

EXPERIENCE SUMMARY

Mr. Lagomarsino has extensive experience in fossil power plant work and currently manages owner engineering services for power projects. His background includes engineering economics and evaluation of technical factors most directly influencing economics, including plant performance and system planning. He has prepared feasibility studies, consulted on international utility projects, and has served as project manager on simple cycle, combined-cycle and supercritical coal-fired plants. He specializes in project development support and owners engineering projects.

Public Service Electric & Gas Company, Fossil System Wide Natural Gas Piping Analysis, NJ and NY

Program Director responsible for overseeing POWER’s overall assessment of the natural gas piping systems for 12 power plants. The scope of work consisted of developing pipe wall thickness calculations to verify compliance with code requirements. Calculations were performed to determine the required minimum wall thickness for straight pipe under internal pressure based on the requirements of the ASME B31.1 Code for Power Piping. The results were compared to ultrasonic measurements taken in the field. The results of the calculations and field measurements were tabulated in a summary report.

NRG Energy, Dunkirk Interconnection Support, NY

Project Manager responsible for overseeing the team that developed the concept of required upgrades to allow interconnection to National Grid. POWER reviewed existing plant drawings and facilities study and recommended equipment replacement and protection updates.

Mirant, Lovett Power Station Environmental Retrofit Study, Tomkins Cove, NY

Project Manager on this project. Mirant’s Lovett Station’s Units 4 and 5 were under a consent decree from the State of New York to reduce SO_2 and NO_x emissions. Each unit had been commissioned in the 1950s with a capacity just under 200 MW, utilizing a reheat steam turbine-generator and a pulverized coal-fired boiler. Air emission controls consisted of previously retrofit low NO_x burners and electrostatic precipitators.

Our team prepared a study of using new CFB boiler technology to bring the plant into compliance and simultaneously solving the reliability problems. Power developed phased arrangement drawings to depict measures that would need to be in place to minimize the tie-in outage. We prepared heat balances, construction schedules, water balances, coal handling, and ash handling flow diagrams, capital cost estimates, O&M cost estimates and provided all other inputs to Mirant’s pro forma economic model.

Keyspan Energy, Spagnoli Road Development

Project manager responsible for the architectural design of this plant, which consists of a GE 7FA combustion turbine in a single-shaft combined-cycle arrangement with a single steam turbine. This project included 3D photorealistic renderings, cost estimating, cycle optimization studies, performance estimating, technical support to environmental permitting, development of the EPC specifications, and EPC contract negotiations.

CP Crane LLC, Middle River PJM Interconnection Support, MD

Project Manager. POWER was responsible for interconnection support for a new simple cycle LM6000 peaker plant and an existing Frame 5 CT. POWER developed one-lines for high-voltage interconnection and provided supporting data based on vendor info and calculations.

First Reserve, Lackawanna Energy Center Owner's Engineer, Jessup, PA

Project Manager responsible for overseeing the owner's engineering services and multidiscipline field engineering support, including civil and mechanical, during construction for the Lackawanna Energy Center. The energy center uses three GE 7HA.02 single shaft engines with 1600 MW output. The fuel gas interconnects to Kinder Morgan’s Tennessee gas pipeline and the electrical interconnect is through PPL at 230 kV. POWER provided monitoring activities for the owner’s field engineering team.

Wolverine Power Supply Cooperative, Alpine Generating Power Plant, Elmira Township, MI

Project Director responsible for support to project development. Prepared project’s conceptual design. Provided technical input to the environmental air permitting process. Subcontracted and directed the work of a noise consultant who produced a noise model of the facility and provided noise emission specifications for key components of the project. Prepared preliminary equipment specifications to solicit budgetary equipment pricing and prepared a project cost estimate. Bid and negotiated the supply of the combustion turbine-generators and step-up transformers. Provided technical support to the MISO interconnection process. POWER provided detailed engineering, design, procurement services, and field engineering support services for the 420-MW Wolverine Alpine Generating Plant. The plant consists of a simple-cycle electric generating station with the design based on two identical power trains supported by certain common balance of plant systems. Each power train consists of a General Electric frame 7FA.05 combustion turbine with a hydrogen-cooled generator. The facility includes air-cooled heat exchangers in the closed cooling water system and is fueled by natural gas.

Sembcorp Utilities Pte Ltd, Sembcorp Java 1 Combined-Cycle Project, Indonesia

Project Manager responsible for all project management functions on this effort. Sembcorp and Adaro are Independent Private Power developers and they teamed to sponsor and bid a proposal to the Indonesian State power company, PLN, for a liquified natural gas-fired combined-cycle power plant. POWER supported the project sponsors by supporting their evaluation of H-Class, 50-Hertz technologies offered by Siemens and GE and by

assembling the Minimum Functional Specification for the 3x(1x1), 1760-MW combined-cycle power plant. The project would use once-through seawater cooling. The sea at the site location is very shallow so the seawater intake line would be nearly 3 kilometers long.

POWER worked with the sponsors' EPC Contractor to ensure the scope met the project's technical and environmental requirements. POWER then prepared the technical portions of the bid to PLN.

City of Lake Worth Electric Utilities, Electric Transmission and Generation Alternatives Evaluation, Lake Worth, FL

Engineering Consultant on a technical and economic evaluation of alternative Energy Portfolios for the City of Lake Worth Electric Utilities. The analysis involved evaluation of both asset value and exposure to risk and consisted of Integrated Resource Planning practices including an examination of existing utility customers, resources and transmission capabilities, existing generating assets condition assessment and electric supply economics. Study results enabled the City of Lake Worth to chart a path to improvements in its electric transmission and generation infrastructure.

Calpine Corporation, York Energy Center Expansion 760-MW Combined-Cycle Power Plant, Peach Bottom Township, PA

Project Manager responsible for overall project management. POWER provided owner engineering, design and related engineering services for one 760-MW combined-cycle power at Calpine's existing York Energy Center. This power block is located adjacent to the existing 3x1 combined cycle power block and includes two GE 7FA.05 combustion turbines. POWER prepared the EPC bid specification and support Calpine in the bid evaluation and negotiation process. POWER developed the conceptual design for the expansion and sharing of existing infrastructure including water treatment systems, fuel oil system, and gas receiving system. Also reviewed adequacy of an existing haul road, which is crossed by underground utilities, to transport the heavy equipment and construction material.

BEFORE THE
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Application of Danskammer Energy, LLC for a Certificate of Environmental Compatibility and Public Need Pursuant to Article 10 for Approval to Repower its Danskammer Generating Station Site Located in the Town of Newburgh, Orange County	)	Case No.: 18-F-0325

PRE-FILED TESTIMONY OF BILL LOUER

ON BEHALF OF

DANSKAMMER ENERGY, LLC

Q. Please state your name, employer, position and business address.

A. My name is Bill Louer. I am currently employed by POWER Engineers, Inc. (POWER) as a Project Manager. My business address is 800 Kinderkamack Road, Oradell, New Jersey, 07649.

Q. How long have you been employed with POWER?

A. I have been employed at POWER since 2014, when it acquired Burns and Roe Enterprises, Inc. I was employed at Burns and Roe since April 2007.

Q. On whose behalf are you testifying?

A. I am testifying on behalf of Danskammer Energy, LLC ("Danskammer" or "the Applicant").

Q. Please describe your educational background and professional experience.

I have a Bachelor of Science from Rutgers University in Mechanical Engineering. My most recent experience over the past 10 years includes development engineering support on combustion turbine-based projects. This work includes the definition of scope, cost, and schedule for combustion turbine and combined-cycle projects. I have experience with conventional technologies such as gas turbine-based projects, coal, natural gas, and biomass combustion and gasification, coal-to-gas conversion studies, CO_2 capture feasibility analysis, and waste heat recovery project technical and economic feasibility. A copy of my resume is attached.

Q. Please describe your current responsibilities with POWER Engineers.

A. As a Project Manager, my responsibilities include coordinating the work of a multi-disciplinary engineering team to define project scope, cost, and schedule of power projects and assisting project owners and developers with front-end development

activities that include permitting, interconnection and contracting. In addition to my role as a project manager, I also play an active role performing feasibility studies for owners and developers that are in the early stages of development to assist them in defining performance, cost, and schedule of competing generation technologies. Since joining POWER, I have worked with owners and developers of major power and industrial facilities.

Q. Have you testified in other proceedings before the New York State Public Service Commission or Siting Board on Electric Generation?

A. No.

Q. Have you previously served as an expert witness before any other court, agency, or other body on the subject you plan to offer testimony on today?

A. No.

Q. What is the purpose and scope of your testimony in this proceeding?

A. As the Mechanical Engineer/Cost Estimating Specialist, I am responsible for coordinating the technical scope definition of the project to support the cost-estimating effort.

Q. What portion(s) of the Application is your testimony sponsoring?

A. I am a member of the Panel sponsoring the following Exhibit of Danskammer's Article 10 Application: Exhibit 14.

Q. Were these portion(s) of the Application mentioned in the paragraph above prepared by you or under your direction and supervision?

A. Yes.

Q. In your testimony, will you refer to, or otherwise rely upon, any studies, publications, data or documents produced by persons other than yourself/your company? If so, please cite these sources.

A. References are provided in the above-referenced Exhibit.

Q. Does this complete your testimony?

A. Yes.

BILL LOUER, P.E.
MECHANICAL ENGINEER

YEARS OF EXPERIENCE
23

EDUCATION
- B.S., Mechanical Engineering, Rutgers College of Engineering, New Brunswick, NJ, 1996

EXPERIENCE SUMMARY

Mr. Louer has experience working on the development of conventional fossil fuel and alternative fuel projects. Projects involved conventional technologies such as gas turbine-based projects, coal, natural gas, and biomass combustion and gasification, coal-to-gas conversion studies, CO_2 capture feasibility analysis, and waste heat recovery project technical and economic feasibility. Most recent work includes natural gas combustion.

Alliance Energy, Hillburn Generation Expansion Project, NY

Project Manager responsible for defining the scope, scheduling the work, and coordinating the conceptual design and cost-estimating activities as well as the environmental division and T&D conceptual design support with POWER's POWER Delivery division. Periodic project updates are provided to the client and external stakeholders when necessary. POWER was contracted by Alliance Energy (Syracuse, NY) to provide preliminary engineering services and environmental consulting services to support the Hillburn expansion project. POWER was contracted by Alliance Energy (Syracuse, New York) to provide preliminary engineering services and environmental consulting services to support the Hillburn expansion project. This project involves Generation turbine-based project development and T&D retrofit/expansion features evaluation of thermal generation power plant technologies.

New York Power Authority Biomass Energy Project, NY

Research and Technology Development Engineer responsible for managing the fossil fuel and biomass energy projects. The work included technical and economic feasibility studies, development of project justification, development of project technical and commercial requirements, selection of contractors, and implementation of projects.

Integrated Gasification Combined Cycle Plant Feasibility Study, NY

Managed the technical and economic feasibility analysis of building an IGCC power plant in NY State. Also, completed plant design basis, site reviews, and evaluations of leading gasification technologies, CO_2 sequestration studies, and co-production market studies.

Wolverine Power Supply Cooperative, Alpine Generating Power Plant, Elmira Township, MI

Project Manager responsible for the development of conceptual design, sensitivity studies, combustion turbine and long lead equipment procurement, environmental permit and MISO interconnection support, and development of plant performance and cost estimates for this advanced "F-class" combined-cycle project development. POWER provided detailed engineering, design, procurement services, and field engineering support services for the 420-MW

Wolverine Alpine Generating Plant. The plant consists of a simple cycle electric generating station with the design based on two identical power trains supported by certain common balance of plant systems. Each power train consists of a General Electric frame 7FA.05 combustion turbine with a hydrogen-cooled generator. The facility includes air-cooled heat exchangers in the closed cooling water system and is fueled by natural gas.

GE Energy Financial Services, Shady Hills Combined-Cycle Facility Owner's Engineering, Spring Hill, FL

Project Manager responsible for supporting the project development of an "H" class combined-cycle project. POWER's scope included preliminary engineering and early conceptual studies to establish configuration for the Shady Hills Combined-Cycle Facility. The natural gas plant is based on a GE 7HA.02 combustion turbine generator, will use reclaimed water for process make-up and will be designed as a Zero Liquid Discharge facility. Services included GE EEP equipment technical review and technical contract negotiation; EPC specification development, permitting support including a 3D rendering of the plant concept using drone photography. Because the project is in Florida, it involves construction in the vicinity of limestone Karst formations. As a result, POWER has been involved in significant geotechnical site characterization efforts to quantify project risks and develop mitigation strategies. POWER's scope includes the EPC contractor proposal reviews and technical negotiation support. POWER also provided cost estimating, interconnection support, and permitting support to the Florida Department of Environmental Protection Site Certification Application and county site approvals.

Schneider Electric, Lonestar Pre-Feasibility Study, TX

Project Manager responsible for overseeing the team in the evaluation of options for the self-generation of three microgrid concepts. Each of the sites required on-site generation to operate in an initial island mode of operation with no grid power. POWER evaluated generation options to serve the electrical distribution reliably. Considerations of availability, redundancy, annual fuel usage, capex, and O&M costs were considered in the evaluation. POWER performed a statistical analysis of various engine sizing and redundancy scenarios to support the selection of a concept that provides adequate reliability of electrical supply during this non-grid connected mode of operation.

BEFORE THE
NEW YORK STATE
SITING BOARD ON ELECTRIC GENERATION SITING
AND THE ENVIRONMENT

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PRE-FILED TESTIMONY OF GEORGE LUCIANO

ON BEHALF OF

DANSKAMMER ENERGY, LLC

Q. Please state your name, employer, position and business address.

A. My name is George Luciano. I am currently employed by POWER Engineers, Inc. (POWER) as a Construction Services Manager. My business address is 800 Kinderkamack Road, Oradell, New Jersey, 07649.

Q. How long have you been employed with POWER?

A. I have been employed at POWER since 2014. Burns and Roe Enterprises, Inc. was acquired by POWER in 2014, where I was employed since April 2006. In between the acquisition, I was briefly employed by EI Associates, Cedar Knolls, NJ, as Chief Estimator/Construction Project Manager.

Q. On whose behalf are you testifying?

A. I am testifying on behalf of Danskammer Energy, LLC ("Danskammer" or "the Applicant").

Q. Please describe your educational background and professional experience.

I have received advanced training in the U.S. Cost Success Estimator estimating software, construction management, project management and scheduling, AACE capital cost estimating, labor relations, and apprenticeship. My experience includes power generation capital cost estimating (fossil/nuclear/renewable), scheduling, subcontractor selection, value engineering, materials management, trade/quantity/unit estimates, budgeting and reporting, and billing reconciliations. In addition, I owned and operated a general contracting firm for over 20 years. A copy of my resume is attached.

Q. Please describe your current responsibilities with POWER.

A. As a Construction Services Manager, my responsibilities include providing project support to project managers and department managers, leading a team of estimating and

procurement specialists to develop cost estimates at various levels of definition for power generation projects, procuring and expediting major and balance of plant equipment, and assigning personnel to support project scheduling. Since joining POWER, I have worked with owners and developers of major power and industrial facilities.

Q. Have you testified in other proceedings before the New York State Public Service Commission or Siting Board on Electric Generation?

A. No.

Q. Have you previously served as an expert witness before any other court, agency, or other body on the subject you plan to offer testimony on today?

A. No.

Q. What is the purpose and scope of your testimony in this proceeding?

A. As the Cost Estimating Specialist, I am responsible for assembling quantities and data provided by engineering to develop a total installed cost and capital cost estimate. The estimate considers manhours to perform the work, construction equipment, bulk material and equipment pricing, contractor indirect costs and fees, inclusion of owner's costs and a basis of estimate document describing the assumptions upon which the cost estimate is based. In addition, I support value engineering and risk analysis.

Q. What portion(s) of the Application is your testimony sponsoring?

A. I am a member of the Panel sponsoring the following Exhibits of Danskammer's Article 10 Application: Exhibit 14.

Q. Were these portion(s) of the Application mentioned in the paragraph above prepared by you or under your direction and supervision?

A. Yes.

Q. In your testimony, will you refer to, or otherwise rely upon, any studies, publications, data or documents produced by persons other than yourself/your company? If so, please cite these sources.

A. References are provided in the above-referenced Exhibits.

Q. Does this complete your testimony?

A. Yes.

GEORGE LUCIANO
COST ESTIMATOR

YEARS OF EXPERIENCE
38

AREAS OF EXPERTISE
- Multidiscipline Cost Estimator
- Combined Cycle and Simple Cycle
- Fossil, Renewable and Nuclear Energy
- Heavy Industrial, Commercial and Government
- Trade/Quantity/Unit Estimates
- Materials Management
- Procurement and Subcontractor Negotiations
- Budgeting and Reporting
- RFP/RFI Management
- Change Orders
- Billing Reconciliations
- Approving Plans and Specifications
- Value Engineering

AFFILIATIONS
- AACE International Member No. 55564

EXPERIENCE SUMMARY

Mr. Luciano is a strategic project and relationship manager with extensive expertise in power generation estimating, scheduling, subcontractor selection, and stakeholder communication. He is adept at developing, leading, and holding teams accountable on energy improvements and capital projects for municipal, Fortune 500, manufacturing, and utility clients. He has successfully managed contracts with Con Edison, NRG, Covanta, VNIIAS, PSE&G, MNES, the US Department of Energy, the US Department of Defense, and others. He has been responsible for directing the day-to-day estimating operations on many large-scale consulting engagements.

Mr. Luciano received advanced training in the U.S. Cost Success Estimator estimating software, construction management, project management and scheduling, AACE capital cost estimating, labor relations and apprenticeship.

Diamond Generating Corporation, North Bergen Generating Project 1200-Megawatt (MW) Combined Cycle OE Project, North Bergen, NJ

Manager of Cost Estimating, responsible for developing managing and maintaining the Engineering, Procurement and Construction (EPC) capital cost estimate, participate in value engineering and risk assessment. POWER was retained by Diamond Generating to perform the preliminary engineering and permitting support for a “brownfield” 2 x 1 – 1200-MW combined-cycle plant. The plant will be interconnected to New York bulk power system via a 7-mile, 345-kV underground and undersea generator lead connected to Consolidated Edison in New York City. As the owner's engineer, POWER’s scope of work includes New York Independent System Operator interconnection support, site plan and general arrangement development, preliminary design and routing of all linears and the necessary engineering to support the permitting process both in New York and New Jersey, development of the initial basis of design criteria including heat and water balances, P&IDs and electrical one-line diagrams. POWER also developed power island equipment and EPC technical specifications, as well as the technical specifications for the generator lead and the 345-kV Gas Insulated Substation switchyard.

Public Service Electric & Gas Company (PSEG), Fossil Hudson Units 4 and 5 Preliminary Engineering for Two LM6000 GTs, Jersey City, NJ

Estimating/Schedule specialist on this project. Preliminary Engineering and Design Services for two LM6000 peaking units to be located at PSEG’s Hudson Generating Station. POWER developed a Design Criteria document that included:

- Site Plan and general arrangement drawings, including grading plan development. Determine utility tie-in points and interfaces with existing generating station.
- Mechanical, electrical, and I&C equipment list.
- Major systems descriptions.
- Develop key one-line diagram and electrical data required for the Pennsylvania Jersey Maryland interconnection application.
- Develop I&C block diagram including BOP I&C design requirements.
- Develop EPC cost estimate and Level II schedule.

Salt River Project, Copper Crossing Energy Center Project, Pinal County, AZ

Estimating Manager responsible for the development of the construction capital cost estimate. POWER was awarded in July 2017. Supported SRP in evaluating options for the CCEC project with permitting support, heat and water balances, general arrangements, cost estimates, schedules, cash flows, and risk evaluations. POWER will support SRP with equipment procurement and EPC scope in the future as well as on-site support. The project will provide up to 1684 MW of peaking power with a combination of large frame and simple cycle gas turbines.

Marathon Petroleum Company LP, Kenai Electric OPEX and LPO Reduction Project

Estimating Manager responsible for an FEL to evaluate a capital project to procure and install a new 7.5- to 10-MW cogeneration unit at its Kenai Refinery to provide supplemental electrical and steam supply in place of its aging boilers. The economic drivers for the project are to reduce the cost of internally generated steam and purchased electricity and improve the reliability of the supply of steam and electricity. POWER performed a front-end loading process to select equipment and complete a Class 3 -15%/+30% cost estimate. Upon client approval, further design was completed and a Class 2 -10%/+10% total installed cost estimate was prepared. Marathon is evaluating a capital project to procure and install a new 7.5- to 10-MW cogeneration unit at its Kenai Refinery to provide supplemental electrical and steam supply in place of its aging boilers. The economic drivers for the project are to reduce the cost of internally generated steam and purchased electricity and improve the reliability of the supply of steam and electricity. POWER has been retained to perform a front-end loading process to select equipment and perform a -15%/+30% cost estimate.

Calpine Corporation, 1038-MW Greenfield Energy Center Combined-Cycle Project, St. Clair, Ontario, Canada

Estimating Specialist on this project. The Greenfield Energy Center Project is a combined-cycle, natural gas-fired power plant located in the Township of St. Clair, Ontario, Canada. POWER's scope of work consisted of engineering and design, procurement, construction management and field support services for the new generating facility project for Calpine Greenfield Limited Partnership. The nameplate capacity of the facility is 1038 MW. The power-generating block consisted of three Siemens Westinghouse 501F combustion turbine generators, three Deltak heat recovery steam generators (HRSGs), a Toshiba steam turbine generator and a GEA wet mechanical draft cooling tower. The power is generated and transmitted to the Ontario

power grid via two separate 230-kV transmission circuits interconnecting approximately 3.5 kilometers north of the plant site.

Bechtel Jacobs Company, 150-MW Motiva Crude Expansion Power Station 4, Port Arthur, TX

Estimating Specialist on this project. POWER provided engineering and design for the Motiva Crude Expansion Power Station 4 (PS-4) Unit, which is part of the Motiva Crude Refinery Expansion project. Our team's scope included all services necessary to provide the front-end design phase followed by the detailed engineering, procurement, and fabrication phase of the power station. Scope included all final designs and equipment and materials needed for construction, commissioning, and start-up of the plant. The plant has four GE Frame 6 combustion turbines and has the capability to produce 150 MW of electricity and over two million pounds-per-hour of steam via four HRSG units.

City of Vernon, 900-MW Vernon Project Combined Cycle, Vernon, CA

Estimating Specialist on this project. POWER provided owner's engineering services to the City of Vernon, a municipal utility, for a combined-cycle power plant with a 3-on-1 configuration and an output of approximately 900 MW.

Wolverine Power Supply Cooperative, Clean Energy Venture 600 MW Coal Project, Rogers City, MI

Estimating Specialist on this project. POWER provided power plant design and related engineering services associated with the development phase of a new coal-fired power station located in a limestone quarry near Rogers City, Michigan. During the permitting phase, POWER developed conceptual design drawings, estimated environmental emission characteristics, identified plant systems and equipment, and developed project schedules and budgets. POWER incorporated the best available emissions controls into the project design and developed a cost-effective zero liquid discharge configuration for the project. In support of permit application, POWER conducted extensive biomass and petroleum coke co-firing and biomass gasification studies and CO_2 sequestration studies for Wolverine.

J-Power/Electric Power Development Company, Peaking Facility, Elwood, IL

Estimating Director responsible for developing and preparing an Add-On “bottoms up” estimate for converting an existing 2 x GE MS7001FA simple-cycle power generation facility into a 2 x 1 combined-cycle facility. Provided pricing for the 2 x HRSGs, 1 x STG, and other BOP equipment and validate as competitive within the US Power Industry. Develop pricing for the remaining engineered equipment, bulk materials, installation cost, engineering, startup, and commissioning. The completed Add-On estimate was delivered as a detailed estimate using the US Cost Success Estimator software.

Eversource Energy, Greenwich Substation, Greenwich, CT

Estimating Director responsible for providing various construction cost estimates for a new, 115-kV enclosed Gas Insulated Substation with multiple building design scenarios to satisfy local zoning, safety, and security concerns. The estimates were prepared using the US Cost Success estimating software and will be the model for future estimates as design progresses.

Con Edison Power Generation, NY

Lead Estimator responsible for generating scopes of work/estimates for metro-New York City area conventional power generation facility maintenance, replacement, and remodel projects.

NRG/Arthur Kill Repower, NY

Led estimating effort for AK-2 "peaker" repowering to combined-cycle trains providing 500 to 600 MW additional generation and alterations at existing facilities. Established conceptual scope for barge landing and relocation of 35-kV transmission line and prepared several design-option estimate studies for client review.

Confidential Client, Construction Services

Lead Estimator and Supervising Estimator responsible for directing the day-to-day estimating operations on large-scale consulting engagements for a leading EPC firm. Mr. Luciano managed power generation efforts for national/international fossil, nuclear and renewable energy plants as well as heavy industrial and commercial projects. He also served as Estimating Manager during department supervisor's absences and delivered proposals and presentations. Estimates prepared included both detailed ("bottoms up") and conceptual estimating approaches:

- MTA: New York City Transit Station Power Upgrade Program for various subway stations.
- PSE&G, New Jersey: Estimated power distribution studies and maintenance and equipment replacement across the State.
- Con Edison, New York: Generated scopes of work/estimates for metro-New York City area conventional power generation facility maintenance, replacement, and remodel projects.
- J-Power, Edgewood, New York: Add on Steam Tail estimates, building out existing simple-cycle units to combined cycle.
- MEPPI: Synchronous Condenser and associated structure.
- Portland: Fuel Conversion Project.

BEFORE THE
NEW YORK STATE
SITING BOARD ON ELECTRIC GENERATION SITING
AND THE ENVIRONMENT

Application of Danskammer Energy, LLC for a Certificate of Environmental Compatibility and Public Need Pursuant to Article 10 for Approval to Repower its Danskammer Generating Station Site Located in the Town of Newburgh, Orange County	)	Case No.: 18-F-0325

PRE-FILED TESTIMONY OF THEODORE MAIN

ON BEHALF OF

DANSKAMMER ENERGY, LLC

Q. Please state your name, employer, position and business address.

A. My name is Theodore Main. I am currently employed by TRC as a Principal Consulting Meteorologist. My business address is 1099 Wall Street West, Suite 250B, Lyndhurst, New Jersey, 07071

Q. How long have you been employed with TRC?

A. I have been employed by TRC since June 1994. I retired from full-time employment in December 2019 and am currently retained as a part-time air quality and environmental consultant by TRC.

Q. On whose behalf are you testifying?

A. I am testifying on behalf of Danskammer Energy, LLC ("Danskammer" or "the Applicant").

Q. Please describe your educational background and professional experience.

I have a Bachelor of Science degree in Meteorology from The Pennsylvania State University. My experience includes air quality assessments, cooling tower plume impact assessments, cooling tower and combustion plume visual impact assessments, project management and expert testimony. In addition, I have worked as an air quality permitting specialist, air quality modeling specialist, and a computer programmer. A copy of my resume is attached.

Q. Please describe your current responsibilities with TRC.

A. As a Principal Consulting Meteorologist, my responsibilities include providing ongoing air quality and meteorological consulting services. Since joining TRC, I have primarily worked with private developers, private corporations, commercial entities, utilities, and

state and federal agencies on various projects, including the repowering project proposed by Danskammer (the "Project").

Q. Have you testified in other proceedings before the New York State Public Service Commission or Siting Board on Electric Generation?

A. Yes. I have testified in the following proceedings, all of which were before the Siting Board: NYPA 500 MW Combined Cycle Facility (99-F-1627), Bowline Point 3 (99-F-1164), KeySpan Spagnoli Road Energy Center (01-F-0761) and Wawayanda Energy Center (00-F-1256).

Q. Have you previously served as an expert witness before any other court, agency, or other body on the subject you plan to offer testimony on today?

A. No.

Q. What is the purpose and scope of your testimony in this proceeding?

A. As the condensed visible combustion plume assessor for TRC, one of Danskammer's consultants for the Project, I have been responsible for performing the visible plume modeling analysis for the Project and preparation of a summary report regarding such analysis, which is appended to Exhibit 24.

Q. What portion(s) of the Application is your testimony sponsoring?

A. I am a member of the Panel sponsoring the following Exhibit of Danskammer's Article 10 Application: Exhibit 24.

Q. Were these portion(s) of the Application mentioned in the paragraph above prepared by you or under your direction and supervision?

A. Yes.

Q. In your testimony, will you refer to, or otherwise rely upon, any studies, publications, data or documents produced by persons other than yourself/your company? If so, please cite these sources.

A. No. The testimony being provided is based on my original work as provided in Exhibit 24.

Q. Does this complete your testimony?

A. Yes.

Theodore Main

Principal Consulting Meteorologist

CREDENTIALS

Education:

- B.S., Meteorology, The Pennsylvania State University, 1978

Theodore Main has extensive experience performing cooling tower and visible plume assessments. He is well versed with the EPRI SACTI model for performing cooling tower fogging and icing studies. He has worked with the SACTI model for assessing wet cooling towers since the development of the model in the mid-1980s and directly interfaced with Mr. Anthony Policastro during the final debugging and model development stages. Mr. Main has performed many cooling tower assessment studies, both in conjunction with air quality permitting (e.g., Environmental Impact Studies), and as standalone analyses.

In a related field, Mr. Main has performed many condensed vapor plumes studies for both cooling towers and combustion exhaust plumes. Mr. Main developed a Fortran program using the dispersion characteristics of the emission sources and the water emissions which calculates the frequency at which the water vapor in the exhaust plumes will condense to form a visible plume. This post-processing program uses the output from the current air quality dispersion model – AERMOD. Additionally, Mr. Main has adapted his visible plume model to account for the thermodynamic heat balance of a wet and plume abated cooling tower to extend its function to evaporative cooling towers. This is accomplished by calculating the water vapor emissions, equilibrium temperature and exhaust velocity and with using the HOUREMIS option in AERMOD. Both the cooling tower and condensed combustion plumes are then modeled on an hour-by-hour basis using hourly emissions data and hour meteorology.

EXPERIENCE

Professional Summary:

- Over 40 years of experience as an Air Quality Specialist and Principal Consulting Meteorologist

Areas of Expertise:

- Project Management
- Air Quality Dispersion Modeling
- Cooling Tower and Visible Plume Studies
- Air Quality Permitting
- Air Quality/New Source Review Permitting
- Title V Permitting
- New York Article 10 and Article X Permitting
- Environmental Impact Studies
- EPA Program Management
- Air Quality/Environmental Due Diligence
- Air Quality Monitoring
- Expert Testimony
- Air Quality/Meteorology Computer Applications
- Computer Programming
- Technical Consultant for Software Applications

RECENT RELEVANT PROJECT EXPERIENCE

Miron Construction & Green Bay Packaging, Plume Visibility Study – Green Bay, WI (September 2018)

Assessed impact of visible condensed plumes on nearby interstate and bridge.

Sun Bio Material (US) Company, Plume Visibility Study Sun Bio Arkadelphia, AR (August 2017)

Assessed impact of visible condensed plumes on nearby airport and flight operations.

National Grid, Island Park Energy Center – Island Park, Long Island, NY (November 2014)

Evaluated cooling tower fogging and icing frequency from cooling tower, and visible plume from combustion stacks for proceeding under New York Public Service Law, Article 10.

TRC 1099 Wall Street West, Suite 250B, Lyndhurst, New Jersey, USA, 07071
Tel: 201.508.6960 Email: tmain@trccompanies.com

BEFORE THE
NEW YORK STATE
SITING BOARD ON ELECTRIC GENERATION SITING
AND THE ENVIRONMENT

Application of Danskammer Energy, LLC for a Certificate of Environmental Compatibility and Public Need Pursuant to Article 10 for Approval to Repower its Danskammer Generating Station Site Located in the Town of Newburgh, Orange County	)	Case No.: 18-F-0325

PRE-FILED TESTIMONY OF EDWARD J. MALLEY

ON BEHALF OF

DANSKAMMER ENERGY, LLC

Q. Please state your name, employer, position and business address.

A. My name is Edward J. Malley. I am currently employed by TRC as a Vice President, Power Generation. My business address is 1099 Wall Street West, Suite 250B, Lyndhurst, New Jersey 07071.

Q. How long have you been employed with TRC?

A. I have been employed by TRC since April 2001.

Q. On whose behalf are you testifying?

A. I am testifying on behalf of Danskammer Energy, LLC ("Danskammer" or "the Applicant").

Q. Please describe your educational background and professional experience.

I have a Bachelor's degree from Catholic University in Chemical Engineering, a Master's Degree from Seton Hall University in Business Administration, and a Juris Doctorate Degree from Seton Hall School of Law. My experience includes engineering, environmental consulting, procurement, construction management, contract administration, and dispute resolution. In addition, I have worked as a Director of Engineering and Restructuring in the past. A copy of my resume is attached.

Q. Please describe your current responsibilities with TRC.

A. As a Vice President of Power Generation, Business Development, my responsibilities include identifying opportunities, developing proposals, negotiating agreements and providing executive leadership during project execution. One of my focus areas is assisting clients in transforming aging power plants through retirement, retrofit, replacement, or redevelopment. In addition to my role as a Senior Program Manager, I also play an active role in managing TRC's power plant decommissioning program. I am

admitted to practice law in the States of New Jersey and New York. Since joining TRC, I have worked with applicable stakeholders, United States Environmental Protection Agency, New York State Department of Environmental Protection, New Jersey Department of Environmental Protection, independent power producers, private developers, commercial entities, utilities, community groups, and stakeholders for various projects, including the repowering project proposed by Danskammer (the "Project").

Q. Have you testified in other proceedings before the New York State Public Service Commission or Siting Board on Electric Generation?

A. No.

Q. Have you previously served as an expert witness before any other court, agency, or other body on the subject you plan to offer testimony on today?

A. No.

Q. **What is the purpose and scope of your testimony in this proceeding?**

A. As the subject matter expert in power plant decommissioning for TRC, one of Danskammer's consultants for the Project, I have been responsible for developing responses to be included in Exhibit 29 regarding decommissioning of the Project.

Q. What portion(s) of the Application is your testimony sponsoring?

A. I am a member of the Panel sponsoring the following Exhibit of Danskammer's Article 10 Application: Exhibit 29.

Q. Were these portion(s) of the Application mentioned in the paragraph above prepared by you or under your direction and supervision?

A. Yes.

Q. In your testimony, will you refer to, or otherwise rely upon, any studies, publications, data or documents produced by persons other than yourself/your company? If so, please cite these sources.

A. No.

Q. Does this complete your testimony?

A. Yes.

Ed Malley

Vice President, Power Generation & RE POWER™ Program Manager

CREDENTIALS

Education:

- J.D. Seton Hall Law School, Newark NJ
- M.B.A., Finance, Seton Hall University, South Orange, NJ
- B.Ch.E., Chemical Engineering, Catholic University, Washington, DC

Professional Registrations/Certifications/ Training:

- Attorney at Law, New Jersey and New York

Ed Malley Vice President, Power and Utility Development for TRC. Working with professionals from across the firm to serve the needs of the power, petroleum and chemical, and infrastructure sectors. Ed provides senior leadership for numerous initiatives, including TRC's RE POWER™ Program for transforming aging power plants or other industrial facilities through retirement, retrofit, replacement, or redevelopment. Ed also works closely with TRC's Transaction Advisory Service team in support of purchases and sales of power generation assets. Ed has over 30 years of industry experience representing owners and operators of power generation projects across the U.S.

EXPERIENCE

Professional Summary:

- 18 years of generation industry experience
- Broad range of leadership experience with Investor Owned Utilities, Independent Power Producers, Energy Developers, Petroleum and Chemical Companies
- Strategic planning, operations, engineering, procurement and construction, real estate, environmental affairs, government affairs, public relations, stakeholder engagement
- Involved in acquisition and development of over 30 energy projects
- Extensive experience leading new and existing business venture initiatives by evaluating risks and through value creation

Areas of Expertise:

- Program Development and Management
- Corporate Business Development
- Environmental Risk and Compliance Due Diligence
- Legislative and Regulatory Advocacy
- Marketing and Communications

Skills and Interests:

- Strategic Planning
- Playbooks
- Engineering, Consulting, and Construction Management
- Project Development
- Contract Negotiations
- Dispute Resolution
- Program Management
- Brownfield Development
- Restructuring
- Public Policy
- Marketing
- Stakeholder Engagement

Employment:

- Vice President and RE POWER™ Program Manager, TRC
- Vice President, Exit Strategy Program Manager, TRC
- Director of Engineering and Restructuring, Witco Corporation
- Operations Engineer, BASF

Professional Organizations (current and historic):

- New York City Bar Association, Environmental Law Committee
- New York State Bar Association, Executive Committee, Environmental Law Section

How will your expertise solve the challenges of the Power and Generation Industry?

For more than 20 years, I have been actively involved in transforming aging power plants through retirement, retrofit, replacement, and sale for redevelopment. Projects include transactions of single sites and portfolios on behalf of sellers and purchasers. Services include adding value and managing risk through due diligence, allocation, insurance, and assurance.

1099 Wall Street West, Suite 250B, Lyndhurst, New Jersey, USA, 07071
Tel: 664.522.6488 Email: emalley@trccompanies.com

BEFORE THE
NEW YORK STATE
SITING BOARD ON ELECTRIC GENERATION SITING
AND THE ENVIRONMENT

Application of Danskammer Energy, LLC for a Certificate of Environmental Compatibility and Public Need Pursuant to Article 10 for Approval to Repower its Danskammer Generating Station Site Located in the Town of Newburgh, Orange County	)	Case No.: 18-F-0325

PRE-FILED TESTIMONY OF KAITLIN MCCORMICK

ON BEHALF OF

DANSKAMMER ENERGY, LLC

Q. Please state your name, employer, position and business address.

A. My name is Kaitlin McCormick. I am currently employed by TRC as a Senior Project Manager. My business address is currently 2801 Wehrle Drive, Suite 8, Williamsville, NY 14221 and will continue to be until December 20, 2019, when our office will be relocated. After December 20, 2019, my business address will be 1090 Union Road, Suite 280, West Seneca, NY 14224.

Q. How long have you been employed with TRC?

A. I have been employed by TRC since September 2018.

Q. On whose behalf are you testifying?

A. I am testifying on behalf of Danskammer Energy, LLC ("Danskammer" or "the Applicant").

Q. Please describe your educational background and professional experience.

I have a Bachelor's degree from Allegheny College in Environmental Science. I have a Master's degree from the Johns Hopkins University in Environmental Science and Policy. I have a Master's of Business Administration degree from the University at Buffalo. My experience has included progressive responsibility for environmental and regulatory compliance with particular expertise in coastal and energy projects. In addition, I have worked as a project manager and environmental scientist, with progressive responsibility, over the last 14 years. A copy of my resume is attached.

Q. Please describe your current responsibilities with TRC.

A. As a Senior Project Manager, my responsibilities include the management of utility scale and community scale energy projects, as well as the permitting of infrastructure, remediation, and other projects. In addition to my role as a Senior Project Manager, I also

play an active role as the office lead for my business unit in TRC's Buffalo-area office where I manage a staff of environmental professionals. I am a Certified Environmental Professional certified by the Academy of Board Certified Environmental Professionals. I am also a Project Management Professional certified by the Project Management Institute. Since joining TRC, I have worked with the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, New York State Department of Environmental Conservation, New York State Department of State, New York Natural Heritage Program, as well as various municipal governments across the State. Prior to joining TRC, I have also worked with the Federal Energy Regulatory Commission, the U.S. Environmental Protection Agency, and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service, as well as agencies in the District of Columbia and multiple other states, including: Maryland, Ohio, Maine, Michigan, Minnesota, South Carolina, and Virginia

Q. Have you testified in other proceedings before the New York State Public Service Commission or Siting Board on Electric Generation?

A. No

Q. Have you previously served as an expert witness before any other court, agency, or other body on the subject you plan to offer testimony on today?

A. No

Q. What is the purpose and scope of your testimony in this proceeding?

A. As the Project Manager for TRC, the environmental consultant to Danskammer on its proposed repowering project (the "Project"), I have been responsible for the overall

preparation of the Article 10 Application. I have also assisted in drafting portions of multiple Exhibits.

Q. What portion(s) of the Application is your testimony sponsoring?

A. I am a member of the Panels sponsoring the following Exhibits of Danskammer's Article 10 Applications: Exhibit 3, 12, 15, 16, 18, 21, 22, and 23. I am also sponsoring Exhibits 4, 26, 31, 32, 33 and 40.

Q. Were these portion(s) of the Application mentioned in the paragraph above prepared by you or under your direction and supervision?

A. Yes.

Q. In your testimony, will you refer to, or otherwise rely upon, any studies, publications, data or documents produced by persons other than yourself/your company? If so, please cite these sources.

A. Yes. References to sources of information that have not been directly prepared by me or TRC are referenced in the above-referenced Exhibits, as applicable.

Q. Does this complete your testimony?

A. Yes.

Kaitlin E. McCormick, CEP, PMP

Senior Project Manager

CREDENTIALS

Education:

- M.B.A., Executive Program, University at Buffalo, 2016
- M.S., Environmental Science and Policy, Johns Hopkins University, 2008
- B.S., Environmental Science, Allegheny College, 2005

Professional Registrations/Certifications/ Training:

- CEP - Certified Environmental Professional
- PMP – Project Management Professional
- OSHA 40-Hour HAZWOPER Training, 2005
- OSHA Supervisor HAZWOPER, 2008
- CPR/First Aid/AED, 2017
- FERC Environmental Review and Compliance for Natural Gas Facilities, 2012
- Project Manager Training, 2012
- National Environmental Policy Act Training, 2014

Kaitlin E. McCormick has over 14 years of experience and progressive responsibility in the environmental consulting industry, with particular focus on supporting clients in the natural gas industry. She has supported natural gas clients with small compressor station and tap upgrades, led the completion of resource reports for FERC filings, and guided the FERC licensing and permitting for new liquefaction facilities associated with liquefied natural gas (LNG) export. Her experience includes extensive hands-on planning, critical issues evaluation, environmental impact assessment, permitting, agency coordination, public and stakeholder outreach, and project management. She currently serves as a Senior Project Manager in TRC's Planning, Permitting, and Licensing Group.

EXPERIENCE

Professional Summary:

- 14 Years of Permitting, Licensing, and Environmental Impact Assessment Experience

Areas of Expertise:

- Natural Resource Permitting and Regulatory Compliance for Energy Facilities
- Environmental Impact Assessment/New York State Environmental Quality Review
- Coastal Zone Management Act Compliance
- Endangered Species Consultation
- Essential Fish Habitat Consultation
- National Environmental Policy Act Compliance
- Clean Water Act Section 404 Compliance
- Rivers and Harbors Act Section 10 Compliance
- Public and Stakeholder Outreach

PROJECT EXPERIENCE

Danskammer Energy, LLC, Danskammer Energy Center Project – Orange County, New York (Project Manager: 2019 – Present) Responsible for the preparation of application materials to support the Article 10 process for an approximate 500 MW combined-cycle generating station located in Orange County, New York. Leading the preparation of the Application and played a key role in the stipulations process. Managing agency consultation, stakeholder outreach, and responses to agency comments, tracking of meetings to support the public involvement process, and coordinates field crews to assess onsite natural resources. Responsible for managing the budget, monthly invoicing and client coordination.

Confidential Client, Article 10 Solar Project – Genesee County, New York (Project Manager: 2019 – Present) Responsible for the preparation of application materials to support the Article 10 process for a 280 MW solar project located in Genesee County, New York. Manages agency consultation and responses to agency comments, tracking of meetings to support the public involvement process, and coordinates field crews to assess onsite natural resources. Responsible for managing the budget, monthly invoicing and client coordination.

Confidential Client, 5 MW Solar Projects – Western and Central, New York (Program Manager: 2019 – Present) Serves as the client's primary point-of-contact to coordinate proposal and project efforts to support community scale (~5 MW) solar projects throughout Western and Central New York. Responsible for leading biweekly client update calls and overall tracking of resources to support a suite of new solar projects. Projects require wetland delineations, civil survey, State Environmental Quality Review Act (SEQRA) Compliance, municipal permitting/site plan review, civil design support, stormwater modeling and calculations, and preparation of the stormwater pollution prevention plan.

Green Street Power Partners, Riley Road Solar Environmental Assessment – New Windsor, New York (Project Manager: 2018-2019) Ms. McCormick served as the Project Manager for development of an Environmental Assessment to support a request for grant funding for a solar project in New Windsor, New York. She directed staff and provided technical review for development of the National Environmental Policy Act compliant

PROJECT EXPERIENCE (continued)

document and for agency consultation. This included development of consultation materials for the U.S. Fish and Wildlife Service and coordination with the New York State Historic Preservation Office.

NYC Parks, Red Hook Bulkhead Permitting – New York City, New York (Senior Permitting Expert: 2018-2018) Ms. McCormick served as the technical and permitting lead for the replacement of an existing bulkhead at a New York City Parks facility. This work included an expansion of the bulkhead into tidal waters associated with an inlet surrounding by waterfront industrial facilities. Ms. McCormick coordinated the development of a permit application package to the U.S. Army Corps of Engineers and New York State Department of Environmental Conservation, as well as agency consultation with U.S. Fish and Wildlife Service, National Marine Fisheries Service, and the New York State Historic Preservation Office. Additionally, she led the preparation of a package for Coastal Zone Consistency Review with the New York State Department of State and Local Waterfront Revitalization Approval with the City of New York.

Colonial Pipeline, Arthur Kill Linear Anode Project – Staten Island, New York (Project Manager: 2018-Ongoing) Ms. McCormick served as the project manager and permitting expert for a linear anode mitigation project associated with an existing pipeline located on Staten Island, New York. This work would be completed within an existing New York State regulated buffer of tidal wetlands (Article 25). Ms. McCormick coordinated the development of a permit application package to the U.S. Army Corps of Engineers and New York State Department of Environmental Conservation, as well as agency consultation with U.S. Fish and Wildlife Service, National Marine Fisheries Service, and the New York State Historic Preservation Office. Additionally, she led the preparation of a package for Coastal Zone Consistency Review with the New York State Department of State and Local Waterfront Revitalization Approval with the City of New York.

Mott MacDonald, Parallel Thimble Shoal Tunnel Permitting Support – Chesapeake Bay, Virginia (Senior Permitting Specialist: 2016 – 2018) Ms. McCormick served as the permitting and regulatory compliance leader for a proposed new parallel tunnel segment to the existing Thimble Shoal Tunnel in Virginia. She was responsible for development of a National Environmental Policy Act Re-Evaluation and summary of Project changes for submission to the Federal Highway Administration; prepared a Virginia Coastal Zone Consistency Certification evaluating the Project relative to Virginia's enforceable coastal zone policies; led development of the Joint Permit Application and supplemental submittals to the State of Virginia, and the U.S. Army Corps of Engineers; served as technical expert for agency consultation; provided technical review of an Essential Fish Habitat Assessment, Evaluation of Impacts to Federally Listed Species, and Evaluation of Impacts to State-Listed Species.

Dominion, Transco to Charleston Project – Columbia, SC (Project Manager: 2015 - 2017) Ms. McCormick served as the Project Manager for the Transco to Charleston Project. She led the development of environmental resource reports to evaluate impacts associated with the development of two new pipeline segments, a new compressor station, modifications to two existing compressor stations, and associated facilities. She was responsible for developing responses to comments and data requests from the Federal Energy Regulatory Commission as they developed their environmental assessment for the Project.

NYS Parks Recreation and Historic Preservation, Buffalo Outer Harbor SEQR Compliance — Buffalo, New York (Senior Scientist, 2014-2014) Coordinated preparation of the State Environmental Quality Review Act Environmental Assessment Form for modifications and work at the Buffalo Outer Harbor Marina in support of both in-water and terrestrial upgrades. Work included excavation of sediment, repair of the existing breakwater, and grading/development on top of a former confined disposal facility. Prepared a review of Coastal Zone policies.

Williams Transcontinental Gas Pipeline Company, Lower New York Bay Lateral Project, New Jersey — (Deputy Project Manager, 2013-2014) As deputy project manager for Williams Transcontinental Gas Pipe Line Company's Lower New York Bay Lateral Project, coordinated agency meetings with the U.S. Army Corps of Engineers, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, and the New Jersey Department of Environmental Protection. Based on agency input, identified appropriate permits and approvals for the project and coordinated the preparation of a biological assessment (Section 7) for sea turtles, Atlantic sturgeon, and three species of whales. Also coordinated the preparation of an application for an incidental harassment authorization.

Dominion, Cove Point Liquefaction Project Environmental Support – Lusby, MD (Deputy Project Manager: 2012 - 2013) Managed the preparation of Resource Reports that evaluated environmental impacts associated with the development of liquefaction facilities and export of LNG from the existing Cove Point LNG Facility. Led the preparation of essential fish habitat support materials and agency consultation letters. Served as a lead permitting specialist to help guide preparation of permit applications for wetland and waterbody impacts.

Dominion Resources Services, Sherman-Seneca Falls Tap Interconnection Project — New York (Senior Scientist, 2014) Managed a wetland delineation and habitat survey at the site of Dominion's tap interconnection with a Minard gathering line. Prepared agency consultation letters and worked with Minard's contractor to modify the existing Nationwide Permit and New York State Department of Environmental Conservation Wetland Permit to include Dominion's work area. The interconnection site is located within a wetland. The Project was completed on-time and on budget, to allow the project to meet a narrow construction window.

BEFORE THE
NEW YORK STATE
SITING BOARD ON ELECTRIC GENERATION SITING
AND THE ENVIRONMENT

Application of Danskammer Energy, LLC for a Certificate of Environmental Compatibility and Public Need Pursuant to Article 10 for Approval to Repower its Danskammer Generating Station Site Located in the Town of Newburgh, Orange County	Case No.: 18-F-0325

PRE-FILED TESTIMONY OF STEVEN D. MEERSMA, PE

ON BEHALF OF

DANSKAMMER ENERGY, LLC

Q. Please state your name, employer, position and business address.

A. My name is Steven D. Meersma, P.E. I am currently employed by TRC as a Principal Engineer. My business address is 1430 Broadway, 10th Floor, New York, NY 10018.

Q. How long have you been employed with TRC?

A. I have been employed by TRC since July 1998.

Q. On whose behalf are you testifying?

A. I am testifying on behalf of Danskammer Energy, LLC ("Danskammer" or "the Applicant").

Q. Please describe your educational background and professional experience.

I have a Bachelor of Science degree from the University of Michigan in Civil Engineering. My experience includes engineering design, stormwater management, regulatory compliance and permitting, environmental health and safety auditing and assessments, construction management, underground storage tank management, solid waste management, remedial design and construction, and quality assurance/quality control. In addition, I have worked as an engineer for several other engineering/environmental firms since 1985. A copy of my resume is attached.

Q. Please describe your current responsibilities with TRC.

A. As a Principal Engineer, my responsibilities include managing a staff of engineers and scientists, project management, technical advisory, and engineering consulting. In addition to my role as a Principal, I also play an active role as an Office Quality Coordinator where I support employee training and office, regional, and corporate quality initiatives. Finally, I co-lead an environmental sector technical and business development team focused on stormwater management. I am certified by the States of New Jersey,

New York, and Delaware as a Professional Engineer. Since joining TRC, I have worked with many public and private entities including but not limited to New York City Department of Parks and Recreation, New York City School Construction Authority, Consolidated Edison, New York Power Authority, New Jersey Transit, Port Authority of New York and New Jersey, and Enbridge/Spectra Energy. I have worked on various energy projects, including the repowering project proposed by Danskammer (the "Project").

Q. Have you testified in other proceedings before the New York State Public Service Commission or Siting Board on Electric Generation?

A. No.

Q. Have you previously served as an expert witness before any other court, agency, or other body on the subject you plan to offer testimony on today?

A. No.

Q. What is the purpose and scope of your testimony in this proceeding?

A. As an Environmental Engineer for TRC, one of Danskammer's consultants for the Project, I have been responsible for developing a Facility Response Plan for the Project and for providing senior review and oversight of the preparation of a draft SPDES Industrial Discharge Permit modification application for the Project.

Q. What portion(s) of the Application is your testimony sponsoring?

A. I am a member of the Panels sponsoring the following Exhibits of Danskammer's Article 10 Application: Exhibits 23 (which includes the draft SPDES Industrial Discharge Permit modification application) and 37 (which includes the Facility Response Plan).

Q. Were these portion(s) of the Application mentioned in the paragraph above prepared by you or under your direction and supervision?

A. Yes.

Q. In your testimony, will you refer to, or otherwise rely upon, any studies, publications, data or documents produced by persons other than yourself/your company? If so, please cite these sources.

A. Yes. References to sources of information that have not been directly prepared by me or TRC are referenced in the above-referenced Exhibits, as applicable.

Q. Does this complete your testimony?

A. Yes.

Steven D. Meersma, PE

Principal Engineer

CREDENTIALS

Education:

- B.S., Civil Engineering, University of Michigan, 1985

Professional Registrations/Certifications/ Training:

- Professional Engineer, New York, (#076572), 1999
- Professional Engineer, New Jersey, (#GE37355), 1992
- Professional Engineer, Delaware, (#8200), 1991

Steven D. Meersma, PE has over 34 years, 21 with TRC, of experience and progressive responsibility in Environmental Engineering.

EXPERIENCE

Professional Summary:

Mr. Steven D. Meersma, P.E. has a 34-year record of providing high-quality consulting services to a broad range of government agencies and private sector concerns primarily in New York and New Jersey. Mr. Meersma is Principal in TRC's New York City office, manages a staff of engineers and scientists. He has participated in many multi-phase environmental, health and safety (EH&S) compliance projects and audits in New York, New Jersey, Ohio, and Jamaica.

Areas of Expertise:

- Engineering Design
- Stormwater Management
- Regulatory Compliance and Permitting
- EH&S Auditing and Assessments
- Construction Management
- Underground Storage Tank Management
- Solid Waste Management
- Remedial Design and Construction
- Quality Assurance/Quality Control

PROJECT EXPERIENCE

New York City Department of Parks & Recreation, Ferry Point Park Golf Course Development – Bronx, NY

Mr. Meersma provided over 10 years of continuous, ongoing technical and managerial services in connection with the solid waste permitting, remediation, site/civil and environmental engineering, and construction oversight at Ferry Point Park, a 220-acre former landfill being developed into a $100 million golf course and community and waterfront parks in the Bronx, New York. Mr. Meersma served as the Program Manager for multiple contracts with the New York City Department of Parks and Recreation valued at $12 million related to New York State Department of Environmental Conservation (NYSDEC) Part 360 Permit compliance and cover material fill import, engineering design, and construction management. Mr. Meersma oversaw the design and construction of an approximately 2-mile-long vent trench to isolate landfill gases from the neighboring community. He developed the Soil Management Program and other environmental aspects of the Engineering Plan, detailing the sampling, analytical laboratory testing, and on-site management of two million cubic yards of imported fill material and cover layer material to re-grade and cover the landfill. Mr. Meersma also supervised the investigations and design of a site-wide landfill gas control system and sub-slab depressurization systems for several park-related buildings being constructed on the former landfill. Mr. Meersma also oversaw the geotechnical and site/civil aspects of the investigations and design, as well as the ongoing golf course construction.

BQ Energy LLC, Patterson Landfill Solar Project - Patterson, NY

Mr. Meersma serves as the Engineer-of-Record for the site/civil design plans and Stormwater Pollution Prevention Plan (SWPPP) associated with the construction of a 2.3-megawatt (MW) direct current (DC) solar array being constructed on the face of a closed sanitary waste landfill located in the New York City watershed. Met with New York City Department of Environmental Protection (NYCDEP) and NYSDEC to discuss and negotiate the project requirements. Prepared detailed work plans and reports to obtain required regulatory approvals for the construction activities and changed end use of the landfill. Developed a SWPPP in accordance with NYSDEC and NYCDEP requirements. Overseeing related issues through the construction phase of the project. Preparing a certification report to document the completion of construction in accordance with the NYSDEC approval conditions.

PROJECT EXPERIENCE (continued)

Engineering Services during Decommissioning and Deconstruction: New York Power Authority (NYPA) Charles Poletti Power Plant – Astoria, NY

Mr. Meersma served as the Engineer of Record for the engineering design and the construction phase for the abatement, decommissioning, and deconstruction of the Charles Poletti Power Plant. The Charles Poletti Power Plant was a steam-electric 825 MW facility capable of firing natural gas and fuel oil. NYPA purchased Poletti from Con Edison in 1974 while it was still under construction. NYPA ceased operations at Poletti in January 2010. In June 2010, TRC was contracted to provide engineering services during the decommissioning of the Charles Poletti Power Plant. Decommissioning services provided to NYPA by TRC have included:

- Asbestos/regulated materials survey;
- Coordination and oversight of asset recovery;
- Pre-demolition structural assessment of buildings and cooling water intake and discharge structures;
- Preparation of specifications and drawings;
- Preparation of engineer's cost estimate and bid documents; and
- Bid phase and construction phase services.

Consolidated Edison, Waterside Steam Station – Manhattan, NY

Mr. Meersma served as the Regulatory Compliance Officer for the $103 million decommissioning, demolition, and soil and groundwater remediation of the four individual properties in Midtown Manhattan, totaling 9 acres, comprising the former Consolidated Edison Waterside Steam Station, which has been slated for residential and commercial redevelopment. Mr. Meersma was responsible for the review and approval of detailed task-specific work plans for all elements of the work and regulatory and safety management of the program. This program was implemented consistent with United States Sentencing Commission Guidelines imposed on Consolidated Edison. Site uses included a 100-year old steam generating station, a manufactured gas plant, a petroleum storage terminal, a fleet fueling depot, and an office building.

NJ Transit, Comprehensive Environmental Services for the Design and Construction of the New Jersey Transit Hudson-Bergen Light Rail Transit System – Jersey City, Bayonne and Hoboken, NJ

Mr. Meersma served as the Project Manager for the hazardous materials aspects of the design and construction of the New Jersey Transit (NJT) Hudson-Bergen Light Rail Transit System (H-BLRTS). In this capacity, Mr. Meersma was responsible for the day-to-day management of a large multi-disciplined professional staff and a multi-million-dollar budget. The 20-mile long project corridor is located in a highly urbanized area and involved construction of a large maintenance and storage facility, thirteen passenger stations, and six bridges. Historic waste disposal activities had resulted in widespread soil and groundwater contamination of the project corridor. Under a Memorandum of Agreement, NJT was responsible for remediating the areas impacted by the construction of the H-BLRTS. During the Initial Operating Segment construction phase of the project, Mr. Meersma was responsible for the oversight of all hazardous materials remediation activities including closure of approximately 25 underground storage tanks, remediation of soil and groundwater impacted by leaking underground storage tanks, decontamination and demolition of over 40 buildings and structures, management of contaminated groundwater, and management of over 500,000 cubic yards of hazardous and contaminated soil and debris.

Preparation of Spill Control and Countermeasures Plans, Multiple Locations – NY and CT

Professional Engineer responsible for the preparation and certification for SPCC Plans in accordance with United States Environmental Protection Agency (EPA) regulations for power plants, office buildings, airports, a wastewater treatment plant, battery energy storage systems, and a wood recycling facility. The Plans addressed the presence and management of petroleum products associated with fuel oil above ground storage tanks, transformers, standby generators, and other containers. Also evaluated related compliance issues with respect to state regulations and local codes and made recommendations for necessary corrective actions.

Facility Response Plan Development for Three Electrical Power Plants – NY and CT

Mr. Meersma served as the Task Manager and Engineer of Record for the preparation of Facility Response Plans for three electrical power plants. TRC utilized GIS-based information to develop release discharge projections and response equipment and resource planning. Assisted with EPA, local response organization, and spill response contractor coordination. Developed and provided site-specific SPCC Plan and FRP training to facility staff.

Preparation of SWPPP for Construction Operations, Various New York State Locations

Professional Engineer responsible for the preparation and certification for the SWPPP associated with construction and demolition projects including power plants, natural gas pipelines and above-ground facilities, airports, parklands, office buildings, landfill disruptions, and soil remediation in accordance with New York State Department of Environmental Conservation requirements and standards and the General Permit associated with Construction Projects. Was also responsible for the certification of regular inspections in accordance with the General Permit.

Preparation of SWPPPs for Industrial Operations, Various New York, New Jersey Locations

Project Manager and Engineer of Record for SWPPP development under the SPDES Multi-Sector General Permit for Industrial Operations including a cosmetics production facility, an electrical power plant, an airport fixed base operator.

Spectra Energy Partners, Algonquin Gas Transmission, LLC, Algonquin Incremental Market and Atlantic Bridge Pipeline Facility Projects, SWPPPs – Rockland and Westchester Counties, NY

Mr. Meersma served as the Task Manager and Engineer of Record for the preparation of SWPPPs for the construction of below ground pipeline and above ground natural gas transmission facilities in Rockland, Westchester, and Putnam Counties, New York. SWPPPs addressed erosion and sediment control practices to be employed during construction and through permanent stabilization and included comprehensive post-construction stormwater management practices for a total of ten permanent above ground facilities. The two projects include the removal of approximately 20 miles of existing 26-inch diameter pipeline and installation of 42-inch diameter pipeline. Total soil disturbance of the two projects is estimated at approximately 275 acres, much of it in hilly and rocky terrain. Specific supplementary measures were developed for approximately 6 miles of the projects located within New York City's East of Hudson Watershed that provides drinking water to over 8 million New Yorkers. Reviewed and certified twice-weekly construction inspection reports. Provided technical support to the Environmental Lead.

United States Army Corps of Engineers, Spill Plan Preparation, Defense Preparedness Support Center Facility – Philadelphia, PA

Project Manager and Professional Engineer of Record for the preparation of a Spill Plan for a large and diverse military support facility located in a major urban center. Reviewed available information provided by the facility. Planned site inspections and personal interviews, reviewed the results of the site investigations, and evaluated the regulatory requirements for the Plan. Identified deficient on-site activities and recommended possible compliance scenarios. Coordinated and critically reviewed the preparation of draft and final versions of the Plan.

Public Service Electric and Gas, Linden Generating Station Wastewater Treatment Study – Linden, NJ

Performed a sludge production and disposal cost minimization for a major New Jersey utility company. He evaluated the current sludge production rates and associated disposal costs, and the potential savings of more effective dewatering technologies. Recommendation to the client resulted in a low cost modification to the existing treatment train, which greatly reduced total sludge disposal cost.

Jersey Central Power and Light, Water Resources Environmental Audit – Ocean County, NJ

Project Manager for a wastewater discharge investigation to characterize the nature of historic and present discharges to the environment form two electric utility regional maintenance facilities located in New Jersey. Reviewed the applicable regulations to determine requirements, if any, to bring the discharges into regulatory compliance. Mr. Meersma reviewed historical data such as correspondence, site plans, and reports to identify potential discharges. He supervised a site inspection to verify known discharges emanating from the sites. Prepared summary reports to the client with recommendations for required compliance activities including subsurface sampling and permitting.

Consolidated Edison, On-Call-As Needed Subject Matter Expert and Corporate Procedures Support Contract – New York, NY

Mr. Meersma serves as Program Manager for multiple EH&S services contracts with Consolidated Edison. The On-Call Subject Matter Expert (SME) contract involved providing senior-level technical specialists for a wide variety of assignments including Safety Inspection Program Assessment and Development, EH&S support at the 54th Street and 79th Street generating facilities, SEQR EAF Long Form completion for divestiture of the Mid-Hudson properties, property acquisition, and divestiture support. Assignments on the Corporate Procedures Support contract included updating existing Corporate Environmental Procedures (CEP), development of DOT Hazardous Materials Management CEPs, developing a reportable quantity matrix for common hazardous substances, developing training materials and assisting facilities and organizations in developing compliance documents and programs. Participated in high-level scoping and development meetings, develop assignment scopes of work and budgets, administer the contract financial aspects, identify and mobilize SMEs, and provide senior-level review of project deliverables.

New York Organic Fertilizer Company, Sludge Processing Facility, Odor Monitoring – Hunt's Point, Bronx, NY

Mr. Meersma served as the NYSDEC-approved Odor Response Monitor and Project Manager for development and implementation of an Odor Monitoring System in accordance with NYSDEC Air and Solid Waste Management Permits. Developed a fact sheet and conducted a presentation introducing the program at a public meeting. The Team was responsible to log complaints and conduct odor inspections within a 1-mile radius of the facility with a 30-minute response time on a 24 hour per day, 7 days per week, 365 days per year basis. Set up and staffed a local field office. Filed completed Odor Inspector Response Forms within 24 hours of complaints. Developed and maintained electronic database of complaint information for quarterly summary reporting to NYSDEC. Mr. Meersma reported directly to NYSDEC and participated as an active member of the community-based Hunts Point Monitoring Committee.

L'Oréal USA, Inc., Audit Services – North America and Caribbean
Mr. Meersma served as Project Manager and Lead Consulting auditor for the evaluation of EH&S practices for newly acquired manufacturing and distribution facilities in New York, New Jersey, California, Ohio, and Jamaica. Audits typically involved multiple day of study and interviews at the facilities and preparation of Audit Findings Reports in both draft and final forms. The Reports included detailed budgetary cost estimates for implementing required actions to bring the facilities into compliance with federal and state regulations and laws and L'Oréal's corporate EH&S Policies.

Pfizer, UST System and Transfer Facility Design and Construction Management – Parsippany, NJ
Prepared construction drawings and specifications for a flammable liquid underground storage tank and contained transfer facility for a major pharmaceutical facility. The double-walled UST system incorporated state-of-the-art inventory controls, leak detection, overfill protection, and corrosion prevention systems. Dedicated piping systems allowed the liquids to be routed to the USTs, process tanks, or a spill collection tank.

BEFORE THE
NEW YORK STATE
SITING BOARD ON ELECTRIC GENERATION SITING
AND THE ENVIRONMENT

Application of Danskammer Energy, LLC for a Certificate of Environmental Compatibility and Public Need Pursuant to Article 10 for Approval to Repower its Danskammer Generating Station Site Located in the Town of Newburgh, Orange County	)	Case No.: 18-F-0325

PRE-FILED TESTIMONY OF DENNIS MORRISSEY

ON BEHALF OF

DANSKAMMER ENERGY, LLC

Q. Please state your name, employer, position and business address.

A. My name is Dennis Morrissey. I am currently employed by POWER Engineers, Inc. (POWER) as a Principal Engineer. My business address is 800 Kinderkamack Road, Oradell, New Jersey, 07649.

Q. How long have you been employed with POWER ?

A. I have been employed at POWER since 2014 when it acquired Burns and Roe Enterprises, Inc. I was employed by Burns and Roe for 37 years prior to its acquisition by POWER..

Q. On whose behalf are you testifying?

A. I am testifying on behalf of Danskammer Energy, LLC ("Danskammer" or "the Applicant").

Q. Please describe your educational background and professional experience.

I have a Master of Science degree from Manhattan College in Civil Engineering and a Bachelor of Science degree from Manhattan College in Civil Engineering. My experience includes civil/structural engineering and design for new and renovated buildings and industrial facilities. A copy of my resume is attached.

Q. Please describe your current responsibilities with POWER.

A. As a Principal Engineer, my responsibilities include the civil/structural engineering and design efforts for new and renovated buildings and facilities, which involve structural steel and reinforced concrete design for building systems, architectural design, preparation of technical specifications, site planning and development (including implementation of applicable state/federal environmental regulations), plant drainage systems, railroad layout, and highway design. I am also responsible for preparation of

complete contract construction packages, including project cost control, manpower scheduling, and technical supervision of the project team. I am certified by the states of New York, Georgia, Rhode Island, Kentucky, and Michigan as a Professional Engineer (PE). Since joining POWER, I have worked with owners and developers of major power and industrial facilities

Q. Have you testified in other proceedings before the New York State Public Service Commission or Siting Board on Electric Generation?

A. No.

Q. Have you previously served as an expert witness before any other court, agency, or other body on the subject you plan to offer testimony on today?

A. Yes. I provided testimony in 2016 to the Borough of Sayreville Planning Board for the Middlesex Energy Center, LLC, a proposed 560-megawatt combined cycle power plant located in Sayreville, New Jersey.

Q. What is the purpose and scope of your testimony in this proceeding?

A. As the Lead Civil/Structural/Architectural Engineer, I am responsible for development of the Project Civil Site Drawings and the Plant Building Drawings contained in the Article 10 Application.

Q. What portion(s) of the Application is your testimony sponsoring?

A. I am a member of the Panel sponsoring the following Exhibits of Danskammer's Article 10 Applications: Exhibit 11.

Q. Were these portion(s) of the Application mentioned in the paragraph above prepared by you or under your direction and supervision?

A. Yes.

Q. In your testimony, will you refer to, or otherwise rely upon, any studies, publications, data or documents produced by persons other than yourself/your company? If so, please cite these sources.

A. References are provided in the above-referenced Exhibits.

Q. Does this complete your testimony?

A. Yes.

DENNIS MORRISSEY, P.E.

LEAD CIVIL/ARCHITECTURAL ENGINEER

YEARS OF EXPERIENCE

43

EDUCATION

- M.S., Civil Engineering, Manhattan College
- B.S., Civil Engineering, Manhattan College

LICENSING

- P.E., Civil: Georgia
- P.E., Civil: Rhode Island
- P.E., Civil: Kentucky
- P.E., Civil: New York
- P.E., Civil: Michigan

SPECIAL TRAINING

- OSHA Training

EXPERIENCE SUMMARY

Mr. Morrissey is a Civil/Structural/Architectural Principal Engineer. As a Lead Engineer, he is responsible for the civil/structural engineering and design efforts for new and renovated buildings and facilities. His assignments have involved structural steel and reinforced concrete design for building systems, architectural design, preparation of technical specifications, site planning and development including implementation of applicable state/federal environmental regulations, plant drainage systems, railroad layout, and highway design.

Mr. Morrissey is responsible for preparation of complete contract construction packages, including project cost control, manpower scheduling, and technical supervision of the project team. Previously, he served as a Field Construction Supervisor on various projects. His responsibilities included field services inspection of existing buildings/structures and construction supervision for structural/architectural renovation.

Nextera/National Grid 970-Megawatt (MW) Island Park Energy Center, Barrett Repowering, Hempstead, NY

Lead Engineer responsible for preliminary civil/structural Plant designs supporting development of the EPC Specifications and submission of the NY Article 10 regulatory permit. POWER performed the preliminary engineering and permitting support for the Plant. Which included 6 – GE LM 6000 PC Sprint CTGs and a 2 x1 combined cycle plant, based on a GE 7FA.05 CTG. POWER developed all supporting drawings and documents for the Article 10 permit and the plant EPC specification.

Diamond Generating Corporation, North Bergen Generating Project 1200-MW Combined-Cycle OE Project, North Bergen, NJ

Lead Engineer responsible for preliminary civil/structural Plant and linear utility designs, supporting development of both the EPC Specifications and submission of the NJ LURP and NY Article 7 regulatory permits. POWER performed the preliminary engineering and permitting support for the 2 x 1 – 1200-MW combined-cycle plant. The plant will be interconnected to New York bulk power system via a 7-mile, 345-kV underground and undersea generator lead connected to Consolidated Edison in New York City. POWER's scope of work includes NYISO interconnection support, site plan and general arrangement development, preliminary design and routing of all linears, development of the initial basis of design criteria including heat and water balances, P&IDs and electrical one-line diagrams, development of the power island equipment and EPC technical specifications and development of technical specifications for the generator lead and the 345-kV GIS switchyard.

Lansing Board of Water & Light, 110 MW REO Town Cogeneration Power Plant, Lansing, MI

Lead Engineer responsible for the complete structural and architectural design of the REO Town Combined-Cycle Power Project. The Plant location within the City of Lansing presented significant challenges with respect to spatial limitations and permit restrictions. The project consists of two CTG/HRSG trains and one steam turbine. The structural scope of work included complete design of the superstructure and foundation systems. Foundations for major equipment included Steam Turbine-Generator, Combustion Turbine-Generator, HRSG, Black Start Generator, Packaged Boiler System, and Ancillary Plant Equipment. Exterior yard systems included Step-Up Transformer and Switchyard Foundations, a complete Fuel Gas Compressor Building, and Gas Metering Station Foundations. The Plant included elevated deaerator systems, a Second Floor Maintenance and Storage Areas and a Third Floor Control Room/Administration Area.

POWER provided detailed engineering, design, procurement and field support services for a new combined cycle cogeneration facility which produces 300,000 pounds-per-hour of steam and 110 MW of electrical power.

Princeton University, 15-MW Gas Turbine Cogeneration Plant, Princeton, NJ

Lead Engineer for the design of a 23,000-square foot cogeneration facility, including foundations, superstructure, and an architectural design, which dictated that the facility will blend with the surrounding campus environment. POWER provided engineering, design, and construction support services to Princeton University for the installation of a 15-MW gas turbine cogeneration plant that included new HRSG. The cogeneration plant included a European Gas Turbine, LM 1600 gas turbine and an ERI Waste Heat Recovery Boiler.

Merck & Co., West Point Boiler and Cogeneration Project, West Point, PA

Lead Engineer for the expansion of Building No. 2 to support installation of Boiler No. 7 including structural/architectural design of the 8,400-square foot plant addition, design of the main steam header support system (interior and exterior), and upgrade/modification of the existing plant roadway and drainage system. The new facility was designed to include a 210,000 pph gas-fired package boiler. It will also include a 40-MW gas turbine/HRSG system, a bundled stack, ammonia system, selective catalytic reduction systems, boiler feedwater systems, exhaust steam and blowdown system, plant steam system, boiler system, natural gas system, new electric substations, and a plant condensate return system.

Albert Einstein College of Medicine, Replacement of Boilers 1 and 2, Bronx, NY

Lead Engineer responsible for the complete structural and architectural renovation of the Albert Einstein College Central Steam Plan. Extensive demolition within the existing facility was required to support installation of the new boiler and ancillary equipment within the existing building. To avoid upgrade of the existing building structure for current codes requirements,

elevated equipment was supported on structural systems independent from the existing building structure. Plant architectural modification included installation of replacement wall louvers (interlocked with the boiler operation), installation of new roof penetrations, repair of existing roof areas affected by the construction and enlargement of the existing wall openings to accommodate new breeching. POWER provided engineering, design, construction support, and commissioning for the central steam plant boiler replacement project, which included two 25,000 lbs./hr. 150 psig field erected steam boilers with two 82,000 lbs./hr. 150 psig shop fabricate D-type package boilers.

Dormitory Authority of the State of New York, TDDSO Boiler and Chiller Plants Upgrade, Wassaic, NY

Lead Engineer responsible for design, bid, and construction support services for the installation of the existing Boiler/Chiller Plant Upgrade. The project includes the design of plant modifications for installation of two 1,200 BHP high-pressure boilers and two 400-ton electric centrifugal chillers, including all associated support equipment. Civil scope included selective demolition, concrete foundations, structural steel support framing, and architectural improvements to the existing building facade.

Stonegate Power LLC, 560-MW Middlesex Energy Center Owner's Engineer, Sayreville, NJ

Lead Engineer responsible for owners engineering support services for the conceptual design, permitting support, and EPC Specification development for a greenfield 1x1 combined-cycle power plant, located in Sayreville, New Jersey. The unit is based upon GE's 7HA.02 combustion turbine generator.

Vistra Energy (formerly Dynegy), 500-MW Heard County Power Simple Cycle Project, Franklin, GA

Lead Engineer for the complete civil/structural/architectural design. This “grass roots” project required development of a 30-acre site, including site development/drainage system design, foundation design for all plant equipment, and structural/architectural design for plant administrative and equipment support buildings. The project consists of a merchant peaking plant that uses three Siemens/Westinghouse 501F combustion turbines in simple cycle arrangement to generate 500 MW of electricity.

Vistra Energy (formerly Dynegy), 500-MW Riverside Generating Simple Cycle Peaking Plant, Louisa, KY

Lead Engineer for the complete civil/structural/architectural design. This “grass roots” project required development of a 25-acre site including site development/drainage system design, foundation design for all plant equipment, and structural/architectural design for plant administrative and equipment support buildings. The project consists of a merchant peaking plant which utilizes three Siemens/Westinghouse 501F combustion turbines in simple cycle arrangement to generate 500 MW of electricity.

Colorado Energy Management, 550-MW Combined-Cycle Hobbs Generating Station, NM

Lead Engineer responsible for the complete site development/design of a 60-acre “grass-roots” Cogeneration Facility, including temporary construction facilities, site access, roads, stormwater management, evaporation ponds, and a liquid waste disposal system. POWER provided engineering and design services for Colorado Energy Management, LLC. The design featured clean-burning, natural gas-fired turbine technology in a combined-cycle configuration that generates 550 MW of electricity.

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PRE-FILED TESTIMONY OF KIRSTEN MYERS

ON BEHALF OF

DANSKAMMER ENERGY, LLC

Q. Please state your name, employer, position and business address.

A. My name is Kirsten Myers. I am currently employed by TRC as a Senior Project Manager. My business address is 1430 Broadway; 10th Floor; New York, NY 10018.

Q. How long have you been employed with TRC Companies, Inc.?

A. I have been employed by TRC since August 23, 2010.

Q. On whose behalf are you testifying?

A. I am testifying on behalf of Danskammer Energy, LLC ("Danskammer" or "the Applicant").

Q. Please describe your educational background and professional experience.

I have a Bachelor of Science degree in Civil Engineering from Cornell University. My experience includes project and construction management within environmental consulting. In addition, I have worked as a project manager and field engineer. A copy of my resume is attached.

Q. Please describe your current responsibilities with TRC Companies, Inc.

A. As a Senior Project Manager, my responsibilities include managing complex environmental projects related to construction of public infrastructure, demolition of industrial facilities, and remediation of contaminated properties in accordance with local, state, and federal requirements. I am licensed by the State of Massachusetts and the State of New York as a Professional Engineer. Since joining TRC, I have worked with federal, state and local agencies, private developers, commercial entities, utilities, community groups, and stakeholders on a variety of projects, including the repowering project proposed by Danskammer (the "Project").

Q. Have you testified in other proceedings before the New York State Public Service Commission or Siting Board on Electric Generation?

A. No.

Q. Have you previously served as an expert witness before any other court, agency, or other body on the subject you plan to offer testimony on today?

A. No.

Q. What is the purpose and scope of your testimony in this proceeding?

A. I am the demolition and cost estimating lead for the Project. As such, I have been responsible for completing the cost estimate and decommissioning plan included in Exhibit 29.

Q. What portion(s) of the Application is your testimony sponsoring?

A. I am a member of the Panel sponsoring the following Exhibit of Danskammer's Article 10 Application: Exhibit 29.

Q. Were these portion(s) of the Application mentioned in the paragraph above prepared by you or under your direction and supervision?

A. Yes.

Q. In your testimony, will you refer to, or otherwise rely upon, any studies, publications, data or documents produced by persons other than yourself/your company? If so, please cite these sources.

A. Yes, I will refer to American Metals Market for current and anticipated value of scrap metals. Any other such references are provided in Exhibit 29, as applicable.

Q. Does this complete your testimony?

A. Yes.

Kirsten Myers, P.E.

Senior Project Manager

CREDENTIALS

Education:

- B.S., Civil Engineering, Cornell University, 2004

Professional Registrations/Certifications/ Training:

- Professional Engineer, Massachusetts, (# 48184)
- Professional Engineer, New York, (# 089236)

As a Senior Project Manager, **Kirsten Myers'** responsibilities include managing complex environmental projects related to construction of public infrastructure, demolition of industrial facilities, and remediation of contaminated properties in accordance with local, state, and federal requirements.

EXPERIENCE

Professional Summary:

- Over 15 years of experience and progressive responsibility in civil and environmental engineering.

Areas of Expertise:

- Remedial Construction Inspection and Management
- Remedial Design
- Groundwater and Soil Remediation
- Remedial Investigation and Site Assessment

PROJECT EXPERIENCE

LS Power, Professional and Technical Services for Decommissioning, Ravenswood Generating Facility – Queens, NY (Project Manager: 2019)

Ms. Myers served as the project manager and lead cost estimator for engineering and consulting services in support of abatement, decommissioning, demolition and limited remediation of the existing gas turbine facilities located in Queens, New York. Ms. Myers developed cost estimates related to the demolition, soil and subgrade removals, and fill importation.

National Grid, Engineering and Consulting Services for Abatement, Decommissioning, and Demolition, Northport Power Station – Northport, NY (Lead Cost Estimator: 2019)

Ms. Myers served as the lead cost estimator for engineering and consulting services in support of abatement, decommissioning, demolition and limited remediation of the Northport Power Station located in Northport, New York. Ms. Myers developed cost estimates based on inputs from the client regarding possible phased demolition of existing facilities.

National Grid, Engineering Services during Decommissioning, Glenwood and Far Rockaway Power Stations – Glenwood Landing and Far Rockaway, NY (Project Engineer/Owner's Engineer: 2011-2015)

Ms. Myers served as the project engineer for engineering during decommissioning of the Glenwood and Far Rockaway Power Stations. The Glenwood Power Station was a 210-megawatt (MW) natural gas-fired steam electric generating peaking facility and Far Rockaway Power Station was a 100-MW natural gas-fired steam electric generating peaking facility. Ms. Myers served as the project engineer for the following decommissioning services provided to National Grid by TRC: pre-demolition assessment of structures, buildings and cooling water intake and discharge structures; preparation of specifications and drawings for hazardous materials removal, structure demolition, and site restoration; preparation of engineer's cost estimate and bid documents. Additionally, between October 2013 and June 2015, Ms. Myers served as the on-site owner's engineer, and was responsible for confirming compliance with all permits and regulatory agency requirements, review of construction submittals, oversight of spill closure contractor, investigation and closure of underground injection control wells, coordination with the utility company, and all required notifications and reporting related to deviations from approved construction documents and plans during the active decommissioning at both Power Stations.

PROJECT EXPERIENCE (continued)

National Grid, Engineering and Consulting Services for Abatement, Decommissioning, and Demolition, E.F. Barrett Power Station, Island Park, NY and Port Jefferson Power Station, Port Jefferson, NY (Technical Expert: 2013-2014)

Ms. Myers served as the technical expert for engineering and consulting services in support of abatement, decommissioning, demolition, and limited remediation of the E.F. Barrett Power Station located in the Village of Island Park, Nassau County, New York and the Port Jefferson Power Station located in the Village of Port Jefferson, Suffolk County, New York. Ms. Myers provided technical support during topographic surveys; asbestos and regulated material surveys; structural evaluations; Phase I Environmental Site Assessments; drawings and specifications for abatement, decommissioning and demolition; engineer's cost estimates and schedules; and preparation of bid documents.

New York Power Authority, Engineering Services during Deconstruction, Charles Poletti Power Plant – Astoria, NY (Project Engineer: 2011-2015)

Ms. Myers served as the project engineer for engineering during deconstruction of the Charles Poletti Power Plant. The Charles Poletti Power Plant was a steam-electric 825-MW facility capable of firing natural gas and fuel oil. Ms. Myers served as the project engineer for the following deconstruction services provided by TRC to New York Power Authority: pre-demolition hazardous materials assessment of buildings and cooling water intake and discharge structures, preparation of specifications and drawings, oversight of on-site subcontractors and asset recovery, and preparation of engineer's cost estimates and bid documents.

Engineering Services during Demolition, City of Glen Cove Incinerator – Glen Cove, NY (2014)

Ms. Myers served as the project engineer for engineering during deconstruction of the City of Glen Cove Incinerator. The City of Glen Cove Incinerator was a municipal solid waste and sludge co-disposal and energy recovery facility. Ms. Myers served as the project engineer for the following services provided to the City of Glen Cove by TRC: preparation of specifications and drawings and bid documents.

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PRE-FILED TESTIMONY OF DARIN OMETZ

ON BEHALF OF

DANSKAMMER ENERGY, LLC

Q. Please state your name, employer, position and business address.

A. My name is Darin Ometz. I am currently employed by TRC as a Senior Air Quality Project Manager. My business address is 1099 Wall Street West, Suite 250B, Lyndhurst, NJ.

Q. How long have you been employed with TRC?

A. I have been employed by TRC since April 2001.

Q. On whose behalf are you testifying?

A. I am testifying on behalf of Danskammer Energy, LLC ("Danskammer" or "the Applicant").

Q. Please describe your educational background and professional experience.

I have a Bachelor of Science degree in Meteorology from The Pennsylvania State University. My experience includes air quality consulting services for the energy sector. A copy of my resume is attached.

Q. Please describe your current responsibilities with TRC.

A. As a Senior Air Quality Project Manager, my responsibilities include supervising the preparation of major and minor New Source Review air quality permit applications, Title V air quality permit applications, and environmental impact statements. Since joining TRC, I have worked on matters involving numerous regulatory agencies, including the United States Environmental Protection Agency, the New York State Department of Environmental Conservation, the New Jersey Department of Environmental Protection and the Federal Energy Regulatory Commission, and with private developers within the energy sector, including Danskammer in connection with its proposed repowering project (the "Project").

Q. Have you testified in other proceedings before the New York State Public Service Commission or Siting Board on Electric Generation?

A. No.

Q. Have you previously served as an expert witness before any other court, agency, or other body on the subject you plan to offer testimony on today?

A. No.

Q. What is the purpose and scope of your testimony in this proceeding?

A. As the Senior Air Quality Project Manager for TRC, one of Danskammer's consultants for the Project, I am responsible for preparing portions of Exhibit 17 and Exhibit 28, which were prepared by me or under my direct supervision. I was also responsible for preparing the draft NYSDEC Part 201/231 air permit application for the Project.

Q. What portion(s) of the Application is your testimony sponsoring?

A. I am a member of the Panel sponsoring Exhibit 17 of Danskammer's Article 10 Application. I am sponsoring Exhibit 28.

Q. Were these portion(s) of the Application mentioned in the paragraph above prepared by you or under your direction and supervision?

A. Yes.

Q. In your testimony, will you refer to, or otherwise rely upon, any studies, publications, data or documents produced by persons other than yourself/your company? If so, please cite these sources.

A. Yes. References to sources of information that have not been directly prepared by either TRC or me have been set forth in Exhibits 17 and 28, as applicable.

Q. Does this complete your testimony?

Darin Ometz

Senior Air Quality Project Manager

CREDENTIALS

Education:

- Graduate Studies in Meteorology, The Pennsylvania State University
- B.S., Meteorology, The Pennsylvania State University, 2000

Darin Ometz is a senior scientist and air quality project manager with over 18 years of experience in air quality permitting, dispersion modeling, engineering, and project management. His qualifications include extensive hands-on air quality modeling, emission calculations and regulatory assessments, permit application and Environmental Impact Statement (EIS) development, and project management. Mr. Ometz has conducted air quality analyses for numerous electric power generating facilities, as well as for the natural gas distribution industry. He has managed the preparation of air quality sections of Federal Energy Regulatory Commission (FERC) EISs for large natural gas pipelines and liquified natural gas (LNG) export projects, including assessing compliance with air quality general conformity and environmental justice regulations. He provides project management, dispersion modeling, and air quality engineering services for a variety of industrial clients, including independent power/cogeneration development, natural gas pipeline and LNG development, manufacturing, and retail development.

EXPERIENCE

Professional Summary:

- Over 18 years of experience in air quality permitting, dispersion modeling, engineering and project management

Areas of Expertise:

- New Source Review – Prevention of Significant Deterioration (PSD) Modeling and Permitting
- EISs
- Construction Permits and Operating Permit Applications
- General Conformity Assessments
- Greenhouse Gas Emission Assessments
- Air Emission Inventories and Regulatory Assessments
- Mobile Source Modeling (Roadway Assessments)
- Environmental Justice Assessments
- Risk Management Plan and Toxic Air Pollutant Modeling

PROJECT EXPERIENCE

Millennium, Eastern System Upgrade Project, FERC and Air Permitting - NY (2015-2017)

Conducted air quality project management, engineering calculations, and dispersion modeling analyses and led the development of the FERC environmental impact statement (EIS air quality section and New York State Department of Environmental Conservation (NYSDEC) air permit applications for the project. The compressor stations were subject to NYSDEC air permitting requirements.

Dominion, Eastern Market Access Project, FERC and Air Permitting – MD (2016-Present)

Prepared the FERC Resource Report 9 air quality environmental assessment and prepared the Maryland Department of the Environment air permit application for the Charles Compressor Station.

CPV Shore, LLC, PSD Permitting – Woodbridge, NJ (Project Permitter: 2011-2012)

Manager of air quality permitting and modeling effort for a 700-MW combined-cycle electric generating facility currently in operation. This permitting effort included performing a PSD-level dispersion modeling analysis, along with off-site facilities, to demonstrate compliance with the air quality standards. In addition, a human-health risk assessment for potential emissions of toxic air pollutants from the proposed facility was conducted. Other assessments included an Environmental Justice assessment and an analysis of impact to threatened and endangered species.

1099 Wall Street West, Suite 250B, Lyndhurst, New Jersey, USA, 07071
Tel: 201.508.6954 Email: dometz@trccompanies.com

PROJECT EXPERIENCE (continued)

Delta Air Lines, Inc., LaGuardia Airport East Side Reconfiguration – NY (Project Manager: 2016-2017)

Manager of air quality permitting and modeling effort for modifications to the LaGuardia Airport in Queens, NY. Conducted air quality project management, engineering calculations, dispersion modeling analyses, and led the development of NYSDEC air permit application for the project.

TransGas Energy LLC, PSD Permitting – Brooklyn, NY (Project Permitter: 2001-2004)

Lead air quality modeler of an air quality permitting effort for a 1,100-MW natural gas-fired with low-sulfur distillate oil backup combined-cycle electric power generation facility consisting of four Siemens Westinghouse 501F combustion turbines. Various operating scenarios were modeled to determine the optimum combination to yield insignificant impacts in the local area. This permitting effort also included a human-health risk assessment for potential emissions of toxic air pollutants from the proposed facility for the New York State Article X Regulations. Other assessments included a multi-source air quality impact analysis for the New York City Department of Environmental Protection and a net air quality benefit analysis for the New York State Article X application.

Keyspan, PSD Permitting – Huntington, NY (Project Permitter: 2001-2002)

Team member of an air quality permitting effort for a 250-MW natural gas-fired combined-cycle electric power generation facility consisting of one General Electric (GE) Frame 7FA combustion turbine. Various operating scenarios were modeled to determine the optimum combination to yield insignificant impacts in the local area. This permitting effort also included a human-health risk assessment for potential emissions of toxic air pollutants from the proposed facility for the New York State Article X Regulations.

Caithness Long Island II, LLC, PSD and State Environmental Quality Review Act Permitting – Brookhaven, NY (Project Air Quality Engineer and Modeler: 2013 – Present)

Team member of an air quality permitting effort for a 752-MW primarily natural gas-fired 2-on-1 combined-cycle electric power generating facility consisting of two GE 7FA.05 combustion turbines, two heat recovery steam generators (HRSGs) equipped with natural gas-fired duct burners for supplementary firing, and one steam turbine generator. Air quality dispersion modeling analyses determined insignificant impacts in the local area.

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PRE-FILED TESTIMONY OF JASON PHILHOWER

ON BEHALF OF

DANSKAMMER ENERGY, LLC

Q. Please state your name, employer, position and business address.

A. My name is Jason Philhower. I am currently employed by POWER Engineers, Inc. (POWER) as a Senior Engineer. My business address is 800 Kinderkamack Road, Oradell, New Jersey, 07649.

Q. How long have you been employed with POWER?

A. I have been employed at POWER since June 2015.

Q. On whose behalf are you testifying?

A. I am testifying on behalf of Danskammer Energy, LLC ("Danskammer" or "the Applicant").

Q. Please describe your educational background and professional experience.

I am currently a Ph.D. Candidate at the University of Connecticut in Electrical Engineering. I hold a Masters of Engineering from Worcester Polytechnic Institute in Electrical Engineering, and a Bachelors of Science degree from the University of Hartford in Electrical Engineering. My experience includes balance of plant (BOP) electrical equipment design specifications, power system calculations, and the arrangement of BOP electrical distribution infrastructure. I have design engineer and owners engineer experience in both the generation side and high voltage (HV) substation side for combined-cycle and simple-cycle projects. I hold specific expertise in relay protection systems and distributed generation. In addition, I have worked as an Electrical Engineering Manager for an Engineering, Procurement, and Construction (EPC) firm. A copy of my resume further detailing my 26 years of professional experience as an Electrical Engineer is attached.

Q. Please describe your current responsibilities with POWER.

A. As a Senior Engineer, my responsibilities include quality review and approval of power system design documents and drawings. I am certified by the States of New York, Connecticut, Massachusetts, Minnesota, North Carolina, New Hampshire, Ohio, Texas, and West Virginia as a Professional Engineer (PE). Since joining POWER, I have worked with owners and developers of major power and industrial facilities.

Q. Have you testified in other proceedings before the New York State Public Service Commission or Siting Board on Electric Generation?

A. Yes, I provided testimony in 2019 to the State of New York Public Service Commission on behalf of North Bergen Liberty Generating LLC, a proposed 1,200-megawatt combined-cycle power plant located in North Bergen, NJ. My testimony supported the 345-kV cables that interconnected into Consolidated Edison, Inc. (ConEd's) W. 49th St. substation located in New York.

Q. Have you previously served as an expert witness before any other court, agency, or other body on the subject you plan to offer testimony on today?

A. No.

Q. What is the purpose and scope of your testimony in this proceeding?

A. As the Lead Electrical Engineer, I am responsible for engineering the BOP electrical design.

Q. What portion(s) of the Application is your testimony sponsoring?

A. I am a member of the Panel sponsoring the following Exhibits of Danskammer's Article 10 Application: Exhibits 11 and 34. I am sponsoring Exhibit 35.

Q. Were these portion(s) of the Application mentioned in the paragraph above prepared by you or under your direction and supervision?

A. Yes.

Q. In your testimony, will you refer to, or otherwise rely upon, any studies, publications, data or documents produced by persons other than yourself/your company? If so, please cite these sources.

A. References are provided in the above-referenced Exhibits.

Q. Does this complete your testimony?

A. Yes.

JASON PHILHOWER, P.E.

LEAD ELECTRICAL ENGINEER

YEARS OF EXPERIENCE

26

EDUCATION

- B.S., Electrical Engineering, University of Hartford, Hartford, CT
- M.E., Electrical Engineering, Worcester Polytechnic Institute, Worcester, MA
- PhD Candidate, Electrical Engineering, University of Connecticut, Storrs, CT

LICENSING

- P.E., Electrical: Connecticut
- P.E., Electrical: Massachusetts
- P.E., Electrical: Minnesota
- P.E., Electrical: North Carolina
- P.E., Electrical: New Hampshire
- P.E., Electrical: New York
- P.E., Electrical: Ohio
- P.E., Electrical: Texas
- P.E., Electrical: West Virginia

SPECIAL TRAINING

- Schweitzer Engineering Laboratories Distributed Generation, Generator Protection Courses/Training
- International Union of Elevators Constructors (Cincinnati, OH) - four-year Apprenticeship Program

CERTIFICATION

- Protective Relay Theory and Applications Certificate – Georgia Institute of Technology

HARDWARE/SOFTWARE

- PLC (IEC 1131-3)
- AutoCAD
- ETAP
- MATLAB
- MathCad
- RSCAD

EXPERIENCE SUMMARY

Mr. Philhower is a results-focused engineering leader who uses his strong management capabilities to lead technical projects. He is one of POWER's foremost electrical engineering experts for large combined-cycle plants.

He has design engineering and owners engineer experience in both the generation side and HV substation side for combined-cycle and simple-cycle projects. He holds specific expertise in distributed generation.

GE Energy Financial Services, Shady Hills Combined-Cycle Facility Owner's Engineering, Spring Hill, FL

Lead Electrical Engineer on this project. POWER's scope included preliminary engineering and early conceptual studies to establish configuration for the Shady Hills Combined-Cycle Facility. The natural gas plant is based on a GE 7HA.02 combustion turbine generator, will use reclaimed water for process make-up, and will be designed as a Zero Liquid Discharge facility. Services included GE EEP equipment technical review and technical contract negotiation; EPC specification development, permitting support including a 3D rendering of the plant concept using drone photography. Because the project is in Florida, the project involves construction of the project in vicinity of limestone Karst formations. As a result, POWER has been involved in significant geotechnical site characterization efforts to quantify project risks and develop mitigation strategies. POWER's scope includes the EPC contractor proposal reviews and technical negotiation support. POWER is also provided cost estimating, interconnection support, and permitting support to the Florida Department of Environmental Protection Site Certification Application and county site approvals.

Gemma Power Systems, 805 MW Combined Cycle Power Plant, Towantic Energy Center, Oxford, CT

Senior Electrical Engineer responsible for balance of plant specifications, CT/ST generation protection single line diagrams and ETAP model. POWER provided detailed engineering and design services for the CPV Towantic Energy Center located in Oxford, Connecticut. The plant is a 785-MW combined-cycle electric generating station based on a 2x1 plant configuration and featuring GE 7HA.01 combustion turbine and steam turbine technology. The facility includes an air-cooled condenser and dual-fuel operational capabilities and supplies power to more than 800,000 Connecticut homes. POWER also provided engineering and design of the associated 14-breaker utility switchyard to the switchyard contractor.

AFFILIATIONS

- IEEE Senior Member
- IEEE, Region 1 Chairman Power and Energy Society, Connecticut Chapter

PUBLICATIONS

- "Active fault management for microgrids," W. Wan, Y. Li, B. Yan, M. A. Bragin, J. Philhower, P. Zhang, P. B. Luh, and G. Warner, IEEE PESGM 2019
- "Review of static risk-based security assessment in power system" Md Bhuiyan, G. Anders, J. Philhower, and S. Du, IET Journal, Cyber-Physical Systems: Theory & Applications, 2019
- "Distributed and asynchronous active fault management for networked microgrids," IEEE Transaction on Power Systems, submitted, 2019

CONFERENCES

"Microgrid Fault Stability and Protection Considerations," J. Philhower, T. Morrell, Cigre 2019 Grid of the Future Symposium.

Diamond Generating Corporation, North Bergen Generating Project 1200-MW Combined-Cycle OE Project, North Bergen, NJ

Lead Electrical Engineer on this project. POWER was retained by Diamond Generating to perform the preliminary engineering and permitting support for a "brownfield" 2 x 1 – 1200-MW combined-cycle plant. The plant will be interconnected to New York bulk power system via a 7-mile, 345-kV underground and undersea generator lead connected to Consolidated Edison in New York City. As the owner's engineer, POWER's scope of work includes NYISO interconnection support, site plan and general arrangement development, preliminary design and routing of all linears and the necessary engineering to support the permitting process both in New York and New Jersey, development of the initial basis of design criteria including heat and water balances, P&IDs and electrical one-line diagrams. POWER also developed power island equipment and EPC technical specifications for the as well as the technical specifications for generator lead and the 345 kV GIS switchyard.

Siemens Energy, Lincoln County 400 MW Simple Cycle Project, Lincoln County, NC

Lead Electrical Engineer responsible for balance of plant specifications, station protection, single-line and three-line diagrams, and power systems studies. The Siemens Lincoln County Project is a simple-cycle dual-fuel single SGT6-9000HL gas turbine that is approximately 400 MW. The unit is installed in a test/demonstration facility configuration as the current base unit with planned subsequent gas turbine upgrades. The plant is part of Duke Energy's Lincoln Combustion Turbine Station in Stanley, North Carolina, and includes a dilution SCR and a turbine building with an overhead crane. After testing and removal of test equipment, the upgraded plant will be turned over to Duke Energy. POWER is Engineer of Record on the project. The architect/engineer for the project is Siemens Power Engineers located in Delhi, India.

U.S. Government, (RESTRICTED USE) Backup Generator Microgrid Conceptual Design, Undisclosed

Lead Electrical Engineer responsible for evaluating existing utility radial fed 13.2-kV campus distribution for islanded microgrid design to be used for emergency backup. POWER performed engineering analysis evaluating existing 13.2-kV distribution and emergency generation assets for optimal microgrid architecture. POWER developed one-line diagrams, electrical arrangements, design basis document, functional description, and project estimate to be used for client engineering and management approval. POWER was awarded the detailed design phase that includes four new generation assets and switchgear that will provide the campus with 10 MW of power during utility blackout. This project entailed the development of a 13-kV microgrid utilizing existing standby generators and transformers with the addition of new generators as required. The microgrid will provide back-up power to the entire Army base in the event of a loss of utility power to maintain operations over an extended period.

The project involved a detailed engineering study to assess and provide recommendations to the client for viable options as well as detailed construction costs for each option. Upon analysis of multiple options, the client then requested POWER provide further engineering design for the

options of interest. POWER's critical infrastructure team developed a basis of design document with drawings for the selected options as well as a detailed construction schedule. Based upon the selected options, POWER will be moving forward with the detailed design phase of the project.

Upon completion, the project design will enable this Army base to island themselves off commercial power and back feed all critical site activities as well as the housing loop, training loop, and offices/administrative areas using the microgrid.

Confidential Client, Backup Generator Microgrid Conceptual Design, Undisclosed Location

This confidential project will entail the development of a 13-kV microgrid utilizing existing standby generators and transformers with the addition of new generators as required.

POWER completed the conceptual design phase that included two options for alternate generator backup designs and estimated construction costs of the two proposed options. Our team developed a Design Basis document with drawings and a schedule. Two of the options have been selected and POWER will soon be released to begin the detailed design phase.

POWER’s complete projects services will include:

- Detailed construction schedule, including mobilization, demolition, new generator configuration, commissioning, and turnover/demobilization.
- Electrical design drawings.
- Construction costs.
- Engineering support for permitting.
- Equipment specifications.

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PRE-FILED TESTIMONY OF WILLIAM REID

ON BEHALF OF

DANSKAMMER ENERGY, LLC

Q. Please state your name, position and business address.

A. My name is William Reid. I currently serve as Danskammer Energy, LLC's Chief Executive Officer. My business address is 994 River Road, Newburgh, NY.

Q. How long have you held this position with Danskammer Energy, LLC?

A. I have served in this position since December 2017.

Q. On whose behalf are you testifying?

A. I am testifying on behalf of Danskammer Energy, LLC ("Danskammer" or "the Applicant").

Q. Please describe your educational background and professional experience.

I have a Bachelor of Arts in History from Yale College and a Master of Business Administration from the Stanford University Graduate School of Business. My experience includes over 30 years of involvement in energy, finance, and private equity investments, particularly in energy infrastructure. A copy of my bio is attached.

Q. Please describe your current responsibilities with Danskammer.

A. As a CEO, my responsibilities include general management, finance, and strategy for the repowering and replacement of the Danskammer generating facility (the "Project"). In addition to my role as CEO, I act as CEO of Agate Power, a privately owned investment independent power company focused on developing, acquiring, and managing investments in the power sector. Since joining Danskammer, I have worked with Danskammer's investors, as well as state and local agencies, other private developers, commercial entities, utilities, community groups, and stakeholders with respect to the Project.

Q. Have you testified in other proceedings before the New York State Public Service Commission or Siting Board on Electric Generation?

A. No.

Q. Have you previously served as an expert witness before any other court, agency, or other body on the subject you plan to offer testimony on today?

A. No.

Q. What is the purpose and scope of your testimony in this proceeding?

A. As the CEO, I am responsible for the overall direction and oversight of the Project.

Q. What portion(s) of the Application is your testimony sponsoring?

A. I am a member of the panels sponsoring Exhibits 1 and 2.

Q. Were these portion(s) of the Application mentioned in the paragraph above prepared by you or under your direction and supervision?

A. Yes.

Q. In your testimony, will you refer to, or otherwise rely upon, any studies, publications, data or documents produced by persons other than yourself/your company? If so, please cite these sources.

A. Yes. References to sources of information that have not been directly prepared by me or the Danskammer's team of service providers are referenced in the above-referenced Exhibits, as applicable.

Q. Does this complete your testimony?

A. Yes.

William Reid
Executive Leadership, Redevelopment and Expansion, Strategy and Financing

- Involved in the development and construction of two greenfield gas fired generation projects: NTE Middletown and NTE Kings Mountain
- Board member of NTE Ohio, NTE North Carolina and Sentinel Energy Center
- Former Head of Infrastructure for Guggenheim Partners
- Former Head of North America for RREEF Infrastructure
- Co-Managing Partner of Chartwell Investments, a middle market private equity firm.
- Global Head of Financial Sponsor Coverage for Morgan Stanley & Co. and Head of High Yield Finance for Credit Suisse First Boston
- BA from Yale University and MBA from Stanford Graduate School of Business

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SITING BOARD ON ELECTRIC GENERATION SITING
AND THE ENVIRONMENT

Application of Danskammer Energy, LLC for a Certificate of Environmental Compatibility and Public Need Pursuant to Article 10 for Approval to Repower its Danskammer Generating Station Site Located in the Town of Newburgh, Orange County	)	Case No.: 18-F-0325

PRE-FILED TESTIMONY OF DIANE E. REILLY

ON BEHALF OF

DANSKAMMER ENERGY, LLC

Q. Please state your name, employer, position and business address.

A. My name is Diane E. Reilly. I am currently employed by TRC as an Economist. My business address is 4155 Shackleford Road, Suite 225, Norcross, GA 30093.

Q. How long have you been employed with TRC?

A. I have been directly employed by TRC since 2012. For several years prior to that time, I provided sub-consulting services to TRC.

Q. On whose behalf are you testifying?

A. I am testifying on behalf of Danskammer Energy, LLC ("Danskammer" or "the Applicant").

Q. Please describe your educational background and professional experience.

I have a Bachelor of Arts degree in Economics and Spanish from Furman University. I have a Master of Arts degree in Economics from the University of Georgia, and I completed additional studies specializing in Finance and Public Finance. My experience includes over 20 years in environmental consulting, focusing on the evaluation of socioeconomic and recreation issues. A copy of my resume is attached.

Q. Please describe your current responsibilities with TRC.

A. As an Economist for TRC, my responsibilities include providing socioeconomic and recreation analysis for a variety of energy projects, including the repowering project proposed by Danskammer (the "Project").

Q. Have you testified in other proceedings before the New York State Public Service Commission or Siting Board on Electric Generation?

A. Yes. I have provided testimony before the Siting Board in connection with an application submitted pursuant to Public Service Law Article 10 by Eight Point Wind, LLC, Case No. 16-F-0062.

Q. Have you previously served as an expert witness before any other court, agency, or other body on the subject you plan to offer testimony on today?

A. No.

Q. What is the purpose and scope of your testimony in this proceeding?

A. As an Economist for TRC, one of Danskammer's consultants for the Project, I have been responsible for evaluating potential socioeconomic impacts for Exhibit 27 of Danskammer's Article 10 Application.

Q. What portion(s) of the Application is your testimony sponsoring?

A. I am a member of the Panel sponsoring Exhibit 27 of Danskammer's Article 10 Application.

Q. Were these portion(s) of the Application mentioned in the paragraph above prepared by you or under your direction and supervision?

A. Yes.

Q. In your testimony, will you refer to, or otherwise rely upon, any studies, publications, data or documents produced by persons other than yourself/your company? If so, please cite these sources.

A. Yes. Yes. References to sources of information that have not been directly prepared by me or TRC are referenced in the above-referenced Exhibits, as applicable.

Q. Does this complete your testimony?

A. Yes.

Diane E. Reilly

Economist

CREDENTIALS

Education:

- M.A., Economics, University of Georgia, 1993
- B.A., Economics and Spanish, Furman University, 1991

Diane Reilly has over 24 years of economic consulting experience. She is experienced in providing economic modeling and analyses for the permitting of various energy projects, including wind, solar, and other power generating facilities. She also evaluates socioeconomic and recreation issues for the Federal Energy Regulatory Commission (FERC) in the areas of hydropower licensing and license compliance. Ms. Reilly provides analyses of socioeconomic, recreational, and land use impacts for Environmental Assessments (EAs), Environmental Impact Statements (EISs), and other environmental assessment documents.

EXPERIENCE

Professional Summary:

- 24 years of providing economic consulting

Areas of Expertise:

- Economic Impact Modeling for Solar and Wind Energy Projects
- FERC Hydroelectric Licensing & Compliance
- Economic/Socioeconomic Studies
- Recreation Use Studies
- Environmental Justice Analysis
- Environmental Impact Statements and Environmental Assessments
- New York Public Service Law Article 10 Permitting Documents

PROJECT EXPERIENCE

NextEra Energy Resources, East Point and High River Solar Projects – NY (Economist: 2018-2019)

Calculated economic impacts of the proposed solar power projects during the projects' construction phases and the operation and maintenance phases using the JEDI wind model. Evaluated potential effects in terms of jobs, earnings, and output. Provided demographic, housing, and employment analyses for the project area and evaluated Environmental Justice issues. The projects culminated in Exhibits for the Article10 filing with New York State.

Dominion Energy, Conway Pipeline Routing – Conway, SC (Economist: 2018)

Analyzed two potential pipeline routes. The effort included identifying minority and low-income populations in the vicinity of the routes using US Census data and the EPA's EJScreen. Additional analysis provided data on potential Environmental Justice Areas.

NextEra Energy Resources, Eight Point Wind Energy Center – Greenwood and West Union, NY (Economist: 2017-2019)

Calculated the economic impacts of the proposed wind energy center during the project's construction phase and the operation and maintenance phase using the JEDI wind model. Evaluated potential impacts effects in terms of jobs, earnings, and output. Provided demographic, housing, and employment analyses for the project area. Developed the Environmental Justice analysis. The analyses were presented as Exhibits for the Article 10 filing with New York State. Provided expert testimony and ongoing support as part of the Rebuttal Panel.

Eagle Creek Renewable Energy, Mongaup River Projects – Sullivan County, NY (Economist: 2018-2019)

Developed recreation use estimates by activity type and season for three hydropower projects on the Mongaup River in New York. Evaluated the results of a year-long user perception survey. As part of the project, previously analyzed whitewater boating on two reaches of the Mongaup River.

4155 Shackleford Road, Suite 225, Norcross, Georgia, USA, 30093
Tel: 770.316.4906 Email: dreilly@trccompanies.com

PROJECT EXPERIENCE (continued)

NextEra Energy Resources, Solar Power Projects – ME, NH, NY, RI (Economist: 2018)

Evaluated the economic effects of multiple proposed solar power projects using the JEDI solar voltaic model. The effort included calculating impacts in terms of jobs, earnings, and output for the construction phase and the operation and maintenance phase.

Tennessee Valley Authority (TVA), Rock Island State Park – Rock Island, TN (Economist: 2018)

Evaluated the anticipated socioeconomic effects of a proposed road construction project and the renovation of an historic mill into lodging and a restaurant. The project involved calculating direct impacts in terms of jobs, earnings, and output for the construction phase and the operation and maintenance phase. Addressed potential recreation-related spending associated with the proposed inn and restaurant. Analyzed area demographic, housing, and employment.

New York Power Authority (NYPA), Blenheim-Gilboa Pumped Storage Project – Blenheim and Gilboa, NY (Technical Lead, Economics: 2012-2017)

Served as technical lead for the socioeconomic issues related to the relicensing of NYPA's 1,160-MW Blenheim-Gilboa Pumped Storage Power Project. Authored the socioeconomic portion of the Pre-Application Document, the Socioeconomic Study, and portions of the Draft License Application. As the technical lead, managed the REMI analysis and participated in public meetings. Her recreation efforts included analyzing recreation use, activity data, and recreation user survey data.

FirstLight, Turners Falls/Northfield Mountain Hydropower Projects – Northfield and Turners Falls, MA (Economist: 2015-2017)

Developed seasonal and annual recreational use, recreation use by activity type, and future demands at each recreation site. Analyzed capacity use by recreation site. Supported the development of the relicense application and FERC Form 80s.

Exelon Power, Conowingo Project and Muddy Run Pumped Storage Project – PA and MD (Economist: 2011-2015)

Provided recreation analysis to support Exelon Generation Company, LLC (Exelon) during its FERC Form 80 filings and the relicensing process for its 573-MW Conowingo Project and its 800-MW Muddy Run Storage Project, with a total of 21 formal recreation sites. Estimated specific use level, activity types, and capacity information for each of the projects' recreation facilities included in the study. The project also required forecasting future recreation demand and capacity by recreation site.

Georgia Power Company, Bartletts Ferry Hydropower Project – GA and AL (Recreation Technical Lead: 2008-2009)

Served as the technical lead for recreation during the FERC relicensing of Georgia Power's 173-MW Bartletts Ferry Project on the Chattahoochee River along the Georgia/Alabama border. The project includes eight recreation sites along 156 miles of shoreline. Calculated existing and future recreational demands and activity patterns from data collected during the FERC-approved recreation study. The resulting recreation study report served as the basis for the recreation portion of the license application.

Georgia Power Company, Morgan Falls Hydropower Project – GA (Recreation Technical Lead: 2005-2008)

Served as the technical lead for recreation and socioeconomics during the FERC relicensing of Georgia Power's 16.8-MW Morgan Falls Project located in metropolitan Atlanta. The project was one of the first to use the Integrated Licensing Process (ILP). Developed the recreational use characterization for the project and the population and recreation demand projections. Addressed future capacity issues, evaluating the need for additional facilities.

NYPA, Niagara Power Project – Niagara Falls, NY (Technical Lead, Economics: 2002-2005)

Assisted in the development of the Scope of Services, managed the REMI modeling, and authored sections of the socioeconomic report for the relicensing of the Niagara Power Project (2,755 MW). The project required the development of a new license application and a settlement structure to meet the needs of NYPA and the more than 100 interested parties.

BEFORE THE
NEW YORK STATE
SITING BOARD ON ELECTRIC GENERATION SITING
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PRE-FILED TESTIMONY OF JUDAH L. ROSE

ON BEHALF OF

DANSKAMMER ENERGY, LLC

Q. Please state your name, employer, position and business address.

A. My name is Judah L. Rose. I am an Executive Director of ICF. My business address is 9300 Lee Highway, Fairfax, Virginia 22031.

Q. How long have you been employed with ICF?

A. I have worked at ICF for nearly 38 years.

Q. On whose behalf are you testifying?

A. I am testifying on behalf of Danskammer Energy, LLC ("Danskammer" or "the Applicant").

Q. Please describe your educational background and professional experience.

I have a Bachelor's degree in economics from the Massachusetts Institute of Technology and a Master's degree in Public Policy from the John F. Kennedy School of Government at Harvard University. A copy of my resume is attached.

Q. Please describe your current responsibilities with ICF.

A. I am Chair of ICF's Energy Advisory and Solutions practice. I have also served as a member of the Board of Directors of ICF and am one of three people among ICF's roster of 6,000 professionals to have received ICF's honorary title of Distinguished Consultant. In addition, I have authored numerous articles in industry journals and spoken at scores of industry conferences. In the power and energy space, ICF's clients cover the full spectrum of possible clients including utilities, government agencies, Independent Power Producers (IPPs), law firms, financial investors such as private equity firms, consumers, industry associations (e.g., Edison Electric Institute), environmental interest groups and Regional Transmission Organizations (RTOs) and Independent System Operators (ISO).

Q. Have you testified in other proceedings before the New York State Public Service Commission or Siting Board on Electric Generation?

A. Yes, I testified in the Application of Eight Point Wind Center for a Certificate under Article 10 of the Public Service Law, Case No. 16-F0062, New York State Board on Electric Generation Siting and the Environment. I also testified in a proceeding entitled Interim Pricing Report on New York State's Independent System Operator, New York State Public Service Commission, January 5, 2001.

Q. Have you previously served as an expert witness before any other court, agency, or other body on the subject you plan to offer testimony on today?

A. I have testified as an expert nearly 140 times in approximately 45 venues. I have testified before or made presentations to the FERC, an international arbitration tribunal, numerous courts, arbitration panels, and before state regulators and legislators in 24 U.S. states and Canadian provinces: Arizona, Arkansas, California, Connecticut, Florida, Indiana, Kentucky, Louisiana, Manitoba, Massachusetts, Minnesota, Missouri, Nevada, New Jersey, New York, North Carolina, Ohio, Oklahoma, Pennsylvania, Quebec, Rhode Island, South Carolina, Texas, and West Virginia. I have testified extensively on electric power prices and markets, air emissions and compliance, utility planning, and the development, permitting, and acquisition of new generation resources and transmission. I have set forth references to these proceedings in the resume attached hereto.

Q. What is the purpose and scope of your testimony in this proceeding?

A. The purpose of my engagement is to assess the impacts of the proposed Danskammer Energy Center repowering project and its consistency with state energy goals. I am responsible for directing computer modeling and analysis of the project.

Q. What portion(s) of the Application is your testimony sponsoring?

A. I am sponsoring Exhibit 10 of Danskammer's Article 10 Application. I am a member of the Panel sponsoring Exhibit 8.

Q. Were these portion(s) of the Application mentioned in the paragraph above prepared by you or under your direction and supervision?

A. Yes.

Q. In your testimony, will you refer to, or otherwise rely upon, any studies, publications, data or documents produced by persons other than yourself/your company? If so, please cite these sources.

A. The following sources were used for Exhibit 8:

1. New York Independent System Operator (NYISO), "2019 Load & Capacity Report (Gold Book)."
2. NYISO, "2018 CARIS Phase 2 Base Case Assumptions and Preliminary Results." (August 8, 2018)
3. ABB PROMOD IV Production Cost Modeling Software
4. U.S. Environmental Protection Agency Continuous Emission Monitoring System (CEMS) Data

The following sources were used for Exhibit 10:

1. New York State Energy Planning Board, "The Energy to Lead. 2015 New York State Energy Plan." (2015)
2. New York State Energy Planning Board, "Biennial Report to the 2015 State Energy Plan." (2017)

3. New York State Department of Public Service (NYSDPS), Case 11-E-0593 “Petition of Cricket Valley Energy Center, LLC for an Original Certificate of Public Convenience and Necessity and for an Order Providing for Lightened Regulation.”
4. New York State Energy Research and Development Authority (NYSERDA), “New York State Greenhouse Gas Inventory: 1990-2016” (July 2019)
5. Verdolini, Vona and Popp, “Bridging the Gap: Do Fast Reacting Fossil Technologies Facilitate Renewable Energy Diffusion?,” National Bureau of Economic Research Working Paper 22454 at 26 (July 2016).
6. Bird, Milligan and Lew, “Integrating Variable Renewable Energy: Challenges and Solutions,” National Renewable Energy Laboratory Technical Report NREL/TP-6A20-60451 at 3 (2013)
7. NYISO, “Reliability and Market Considerations For a Grid in Transition.” (May 2019)
8. State of New York, Senate Bill S6599 “Climate Leadership and Community Protection Act.” (June 18, 2019)
9. NYSDPS, Case 12-T-0502 “Proceeding on Motion of the Commission to Examine Alternating Current Transmission Upgrades.”
10. NYISO, “NYISO Review of the System Reliability Impact Study for Danskammer Energy Center Project Interconnection Queue #791.” (July 23, 2019)
11. NYISO, “Power Trends 2019 – Reliability and a Greener Grid,” (2019)
12. NYISO, “2019-2028 Comprehensive Reliability Plan,” (July 16, 2019)

13. New York State Department of Environmental Conservation (NYSDEC), "Proposed Subpart 227-3, Ozone Season Oxides of Nitrogen (NOx) Emission Limits for Simple Cycle and Regenerative Combustion Turbines."
14. NYSDPS, Case 18-E-0130 "In The Matter of Energy Storage Deployment, Order Establishing Energy Storage Goal and Deployment Policy." (December 13, 2019)
15. Potomac Economics, "2018 State of the Market Report for the New York ISO Markets." (May 2019)
16. Federal Energy Regulatory Commission (FERC), Case ER13-1380-000, "Order Accepting Proposed Tariff Revisions and Establishing a Technical Conference," Docket No. ER13-1380-000 (August 13, 2013)
17. NYISO, "Locational Minimum Installed Capacity Requirements Study for the 2019-2020 Capability Year." (January 17, 2019)
18. NYISO, "Tailored Availability Metric." (May 9, 2019)
19. NYSDEC, "Potential Environmental Justice Areas in Orange County, NY."
20. NYSDPS, Case 08-T-1245, "Order Adopting The Terms Of A Joint Proposal And Granting Certificate of Environment Compatibility And Public Need, With Conditions, And Clean Water Act §401 Water Quality." (November 12, 2009)
21. NYISO, "IPPTF Carbon Pricing Proposal." (December 7, 2018)

Q. Does this complete your testimony?

A. Yes.

Judah L. Rose

ICF

Executive Vice President, Managing Director

Education

- M.P.P., John F. Kennedy School of Government, Harvard University, 1982
- S.B., Economics, Massachusetts Institute of Technology, 1979

Awards and Recognition

- One of ICF's Distinguished Consultants, an honorary title given to only three of ICF's 5,000 employees

Experience Overview

Judah L. Rose joined ICF in 1982 and currently serves as an Executive Director of ICF. He chairs its Energy Advisory practice.

Accomplishment Highlights

- Close to 40 years of experience in the energy industry
- Testimony in over 130 instances in scores of state, federal, international, and other legal proceedings
- Frequent counselor on restructuring and financing of new and existing power plants

Mr. Rose has approximately 40 years of experience in the energy industry including in electricity market design, power generation, power fuels – coal, natural gas, renewables, environmental compliance, planning, market monitoring, finance, forecasting, and transmission. His clients include electric utilities, financial institutions, law firms, government agencies, fuel companies, consumers and Independent Power Producers. Mr. Rose is one of ICF's Distinguished Consultants, an honorary title given to three of ICF's 6,000 employees, and has served on the Board of Directors of ICF International as the Management Shareholder Representative.

Mr. Rose frequently provides expert testimony and litigation support. He has provided testimony in over 130 instances in 45 venues including scores of state, federal, international, and other legal proceedings. Mr. Rose has testified in over 24 states and provinces, at the Federal Energy Regulatory Commission, in numerous court settings and internationally.

Mr. Rose has supported the financing of tens of billion dollars of new and existing power plants and is a frequent counselor to the financial community in restructuring and financing.

Mr. Rose has also addressed approximately 100 major energy conferences, authored numerous articles published in Public Utilities Fortnightly, the Electricity Journal, Project Finance International, and written numerous company studies. He has also appeared in TV interviews.

Selected Press Interviews

Television

- "The Most With Allison Stewart," MSNBC, "Blackouts in NY and St. Louis & ongoing Energy Challenges in the Nation," July 25, 2006
- CNBC Wake-Up Call, August 15, 2003

- Wall Street Journal Report, July 25, 1999
- Back to Business, CNBC, September 7, 1999

Journals:
- Electricity Journal
- Energy Buyer Magazine
- Public Utilities Fortnightly
- Power Markets Week

Magazines:
- Business Week
- Power Economics
- Costco Connection

Newspapers:
- Denver Post
- Rocky Mountain News
- Financial Times Energy
- LA Times
- Arkansas Democratic Gazette
- Galveston Daily News
- The Times-Picayune
- Pittsburgh Post-Gazette
- Power Markets Week

Wires:
- Associated Press
- Bridge News
- Dow Jones Newswires

Testimony

138. Supplemental Testimony and Exhibits, Docket 19-014-U, on behalf of Oklahoma Gas and Electric, Before the Arkansas Public Service Commission, May 30, 2019.

137. Rebuttal Testimony, Case No. PUD 201800159, on behalf of Oklahoma Gas and Electric, Preapproval Pursuant to 17 O.S. Section 286 (C) For Acquisition of Capacity Through Asset Purchase, March 1 , 2019

136. Direct Testimony, Case No. PUD 201800159, on behalf of Oklahoma Gas and Electric, Preapproval Pursuant to 17 O.S. Section 286 (C) For Acquisition of Capacity Through Asset Purchase, December 28, 2018.

135. Supplemental Testimony, Case No. 17-872-EL-RDR, On behalf of Duke Energy Ohio, June 6, 2018.

134. Expert Declaration, Case No. 18-50757, On behalf of FirstEnergy Solutions Corp., Chapter 11, April 1, 2018.

133. Application of Eight Point Wind Center for a Certificate under Article 10 of the Public Service Law, Case No. 16-F0062, New York State Board on Electric Generation Siting and the Environment, November 28, 2017

132. Direct Testimony, Case No. 17-872-EL-RDR, On behalf of Duke Energy Ohio, March 31, 2017.

131. Affidavit, In Answer to Complaint of Next Era and PSEG Companies, FERC Docket No. EL16-93-000, Testimony on New Gas Pipelines, and Wholesale Gas and Power Market Design, July 28, 2016. On behalf of Eversource.

130. Rebuttal Testimony, Support for an Electric Security Plan Filing, on behalf of Ohio Edison Company, The Cleveland Electric illuminating Company, The Toledo Edison Company, Case No. 14-1297-EL-SSO, October 20, 2015.

129. Demand Resource Pricing Testimony on behalf of P3, Docket ER15-852-000, February, 13, 2016

128. Damages Testimony on behalf of Duke Energy Indiana, Inc. Plaintiff v. Cause No. 1:13-cv-1984-SEB/TAB, Benton County Wind Farm LLC, January 5, 2015.

127. Responsive Testimony of Judah L. Rose on Behalf of Oklahoma Energy Results, LLC December 16, 2014, CAUSE NO. PUD 201400229

126. Rebuttal Testimony on behalf of Duke Energy Indiana, Inc. Plaintiff v. Cause No. 1:13-cv-1984-SEB/TAB, Benton County Wind Farm LLC, November 26, 2014.

125. Statement of Opinions on behalf of Duke Energy Indiana, Inc. Plaintiff v. Cause No. 1:13-cv-1984-SEB/TAB, Benton County Wind Farm LLC, October 30, 2014.

124. Direct Testimony, CO_2 price forecasts provided to IPL for use in their compliance analysis, as well as, support for the probabilities assigned to the Coal Combustion Residuals ("CCR"), 316 (b) and Effluent Limitation Guidelines ("ELG") regulations for use in IPL analysis in support of their Compliance Project, Indianapolis Power & Light Company, IURC Cause No. 44540, October 14, 2014.

123. Direct Testimony, Support for an Electric Security Plan Filing, Ohio Edison Company (FirstEnergy), August 4, 2014.

122. Rebuttal Testimony, Valuation of Mad River Power Plant, FirstEnergy, February 27, 2014.

121. Expert Report, Computation of Future Damages, Breach of Wolf Run Coal Sales Agreement, prepared for Meyer, Unkovic, and Scott, LLP, filed February 12, 2014.

120. Supplemental Direct Testimony of Judah Rose on behalf of National Grid and Northeast Utilities, Petition of New England Power Company d/b/a/ National Grid for Approval to Construct and Operate a New 345 kV Transmission Line and to Modify an Existing Switching Station Pursuant to G.L. c. 164, § 69J, August 8, 2013.

119. Rebuttal Testimony of Judah Rose on Behalf of Monongahela Power Company, The Potomac Edison Company, Petition for Approval of a Generation Resource Transaction and Related Relief, Case No. 12-1571 – E – PC, May 17, 2013.

118. Direct Testimony of Judah Rose on behalf of New England Power Company d/b/a National Grid before the Commonwealth Of Massachusetts Energy Facilities Siting Board and Department Of Public Utilities, Petition of New England Power Company d/b/a National Grid for Approval to Construct and Operate a New 345kV Transmission Line and to Modify an Existing Switching Station Pursuant to G.L. c. 164, § 69, Docket EFSB 12-1/D.P.U. 12-46/47, November 21, 2012.

117. Direct Testimony for the Narragansett Electric Company d/b/a National Grid (Interstate Reliability Project), Before the State of Rhode Island Public Utilities Commission, Energy Facility Siting Board ("Siting Board") Notice of Designation to Public Utilities Commission ("PUC") to Render an Advisory Opinion on need and cost-justification for Narragansett Electric d/b/a National Grid's proposal to construct and alter major energy facilities in RI, the "Interstate Reliability Project", RIPUC Docket No. 4360, November 21, 2012

116. Sur-Surrebuttal Testimony, In the Matter of Southwestern Electric Power Company's Petition for a Declaratory Order Finding That Installation of Environmental Controls at the Flint Creek Power Plant is in the Public Interest, Docket No. 12-008-U, September 21, 2012.

115. Rebuttal Testimony, In the Matter of Southwestern Electric Power Company's Petition for a Declaratory Order Finding That Installation of Environmental Controls at the Flint Creek Power Plant is in the Public Interest, Docket No. 12-008-U, July 30, 2012.

114. Direct Testimony, The Connecticut Light & Power Company, Application for a Certificate of Environmental Compatibility and Public Need for the Connecticut Portion of the Interstate Reliability Project that traverses the municipalities of Lebanon, Columbia, Coventry, Mansfield, Chaplin, Hampton, Brooklyn, Pomfret, Killingly, Putnam, Thompson, and Windham, which consists of (a) new overhead 345-kV electric transmission lines and associated facilities extending between CL&P's Card Street Substation in the Town of Lebanon, Lake Road Switching Station in the Town of Killingly, and the Connecticut/Rhode Island border in the Town of Thompson; and (b) related additions at CL&P's existing Card Street Substation, Lake Road Switching Station, and Killingly Substation, Docket No. 424, July 17, 2012.

113. Direct Testimony, Southwestern Electric Power Company, In the Matter of Southwestern Electric Power Company's Petition for a Declaratory Order Finding That Installation of Environmental Controls at the Flint Creek Power Plant is in the Public Interest, Docket No. 12-008-U, February 9, 2012.

112. Rebuttal Testimony, Otter Tail Power Company, Before the Office of administrative Hearings, for the Minnesota Public Utilities Commission, In The Matter of Otter Tail Power Company's Petition for an Advance Determination of Prudence for its Big Stone Air Quality Control System Project, September 7, 2011.

111. Rebuttal Testimony, on behalf of Arizona Public Service, In the Matter of the Application of Arizona Public Service Company for Authorization for the Purchase of Generating Assets from Southern California Edison, and for an Accounting Order, Docket No. E-01345A-10-0474, June 22, 2011.

110. Direct Testimony, Duke Energy Ohio, Inc., Application of Duke Energy Ohio for Authority to Establish a Standard Service Offer Pursuant to Section 4928.143, Revised Code, in the Form of an Electric Security Plan, Accounting Modifications and Tariffs for Generation Service, Case No. 11-XXXX-EL-SSO. Application of Duke Energy Ohio for Authority to Amend its Certified Supplier Tariff, P.U.C.O. No. 20. Case No. 11-XXXX-EL-ATA. Application of Duke Energy Ohio for Authority to Amend its Corporate Separation Plan. Case No. 11-XXXX-EL-UNC, June 20, 2011.

109. Direct Testimony, Manitoba Hydro Power Sales Contracting Strategy, U.S. Power Markets, Manitoba Hydro Drought Risks, Modeling, Forecasting and Planning, Selected Risk and Financial Issues, Governance, Trading and Risk Related Comments Before the Public Utilities Board of Manitoba, February 22, 2011.

108. Surrebuttal Testimony – Revenue Requirement of Judah Rose on Behalf of Dogwood Energy, LLC, In the Matter of the Application of KCP&L Greater Missouri Operations Company for Approval to Make Certain Changes to its Charges for Electric Service, Case No. ER-2010-0356, January 12, 2011.

107. Rebuttal Report Concerning Coal Price Forecast for the Harrison Generation Facility, Meyer, Unkovic and Scott, LLP, filed December 6, 2010.

106. Direct Testimony of Judah Rose on behalf of Duke Energy Ohio In the Matter of the Application of Duke Energy Ohio for Approval of a Market Rate Offer to Conduct a Competitive Bidding Process for Standard Service Offer Electric Generation Supply, Accounting Modifications, and Tariffs for Generation Service, Case No. 10-2586-EL-SSO, filed November 15, 2010.

105. Updated Forecast, Coal Price Report for the Harrison Generation Facility, Meyer, Unkovic and Scott, LLP, filed October 18, 2010.

104. Declaration of Judah Rose in re: Boston Generating LLC, et al., Chapter 11, Case No. 10-14419 (SCC) Jointly Administered, September 29, 2010.

103. Declaration of Judah Rose in re: Boston Generating LLC, et al., Chapter 11, Case No. 10-14419 (SCC) Jointly Administered, September 16, 2010.

102. Direct Testimony of Judah Rose on behalf of Plains and Eastern Clean Line LLC, in the Matter of the Application of Plains and Eastern Clean Line Oklahoma LLC to conduct Business as an Electric Utility in the State of Oklahoma, Cause No.PUD 201000075, July 16, 2010.

101. Direct Testimony of Judah Rose on behalf of Plains and Eastern Clean Line LLC, in the Matter of the Application of Plains and Eastern Clean Line LLC for a Certificate of Public Convenience and Necessity to Operate as an Electric Transmission Public Utility in the State of Arkansas, Docket No. 10-041-U, June 4, 2010.

100. Supplemental Testimony on Behalf of Entergy Arkansas, Inc., In the Matter of Entergy Arkansas, Inc., Request for a Declaratory Order Approving the Addition of the Environmental Controls Project at the White Bluff Steam Electric Station Near Redfield, Arkansas, Docket No. 09-024-U, July 6, 2009.

99. Rebuttal Testimony on Behalf of TransEnergie, Canada, Province of Quebec, District of Montreal, No.: R-3669-2008-Phase 2, FERC Order 890 and Transmission Planning, July 3, 2009.

98. Surrebuttal Testimony – Revenue Requirement of Judah Rose on Behalf of Dogwood Energy, LLC, before the Missouri Public Service Commission, In the Matter of the Application of KCP&L GMO, Inc. d/b/a KCP&L Greater Missouri Operations Company for Approval to Make Certain Changes to its Charges for Electric Service, Case No. ER-2009-0090, April 9, 2009.

97. Hawaii Structural Ironworkers Pension Trust Fund v. Calpine Corporation, Case No. 1-04-CV-021465, Assessment of Calpine's April 2002 Earnings Projections, March 25, 2009.

96. Coal Price Report for Harrison Coal Plant, Allegheny Energy Supply Company, LLS and Monongahela Power Company versus Wolf Run Mining Company, Anker Coal Group, etc., Civil Action. No. GD-06-30514, In the Court of Common Pleas, Allegheny County, Pennsylvania, February 6, 2009.

95. Supplemental Direct Testimony of Judah Rose, on behalf of Southwestern Electric Power Company, In the Matter of the Application of Southwestern Electric Power Company for Authority to Construct a Natural-Gas Fired Combined Cycle Intermediate Generating Facility in the State of Louisiana, Docket No. 06-120-U, December 9, 2008.

94. Rebuttal Testimony of Judah Rose on behalf of Kelson Transmission Company, LLC re: Application of Kelson Transmission Company, LLC For A Certificate of Convenience and Necessity For the Amended Proposed Canal To Deweyville 345 kV Transmission Line Within Chambers, Hardin, Jasper, Jefferson, Liberty, Newton, And Orange Counties, SOAH Docket No. 473-08-3341, PUCT Docket No. 34611, October 27, 2008.

93. Testimony of Judah Rose, on behalf of Redbud Energy, LP, in Support of Joint Stipulation and Settlement Agreement, In the Matter of the Application of Oklahoma Gas and Electric Company for an Order of the Commission Granting Pre-Approval of the Purchase of the Redbud Generating Facility and Authorizing a Recovery Rider, Cause No. PUD 200800086, September 3, 2008.

92. Direct Testimony of Judah L. Rose on behalf of Duke Energy Carolinas, In the Matter of Advance Notice by Duke Energy Carolinas, LLC, of its Intent to Grant Native Load Priority to the City of Orangeburg, South Carolina, and Petition of Duke Energy Carolinas, LLC and City of Orangeburg, South Carolina for Declaratory Ruling With Respect to Rate Treatment of Wholesale Sales of Electric Power at Native Load Priority, Docket No. E-7, SUB 858, August 15, 2008.

91. Affidavit filed on behalf of Public Service of New Mexico pertaining to the Fuel Costs of Southwest Public Service for Cost-of-Service and Market-Based Customers, August 11, 2008.

90. Direct Testimony of Judah L. Rose on behalf of Duke Energy Ohio, Inc., Before the Public Utilities Commission of Ohio, In the Matter of the Application of Duke Energy Ohio, Inc. for Approval of an Electric Security Plan, July 31, 2008.

89. Rebuttal Testimony, Judah L. Rose on Behalf of Duke Energy Carolinas, in re: Application of Duke Energy Carolinas, LLC for Approval of Save-A-Watt Approach, Energy Efficiency Rider and Portfolio of Energy Efficiency Programs, Docket No. E-7, Sub 831, July 21, 2008.

88. Updated Analysis of SWEPCO Capacity Expansion Options as Requested by Public Utility Commission of Texas, on behalf of SWEPCO, June 27, 2008.

87. Direct Testimony of Judah L. Rose on Behalf of Nevada Power/Sierra Pacific Electric Power Company, Docket No. 1, Public Utilities Commission of Nevada, Application of Nevada Power/Sierra Pacific for Certificate of Convenience and Necessity Authorization for a Gas-Fired Power Plant in Nevada, May 16, 2008.

86. Rebuttal Testimony of Judah L. Rose on Behalf of the Advanced Power, Commonwealth of Massachusetts, Before the Energy Facilities Siting Board, Petition of Brockton Power Company, LLC, EFSB 07-7, D.P.U. 07-58 & 07-59, May 16, 2008.

85. Supplemental Rebuttal Testimony on Commissioner's Issues of Judah L. Rose for Southwestern Electric Power Company, on behalf of Southwestern Electric Power Company, PUC Docket No. 33891, Public Utilities Commission of Texas, May 2008.

84. Supplemental Direct Testimony on Commissioners' Issues of Judah Rose for Southwestern Electric Power Company, for the Application of Southwestern Electric Power Company for Certificate of Convenience and Necessity Authorization for a Coal-Fired Power Plant in Arkansas, SOAH Docket No. 473-07-1929, PUC Docket No. 33891, Public Utility Commission of Texas, April 22, 2008.

83. Rebuttal Testimony of Judah Rose, In the Matter of the Application of Tucson Electric Power Company for the Establishment of Just and Reasonable Rates and Charges Designed to Realize A Reasonable Rate of Return on the Fair Value of Its Operations Throughout the State of Arizona, Estimation of Market Value of Fleet of Utility Coal Plants, April 1, 2008.

82. Rebuttal Report of Judah Rose, Ohio Power Company and AEP Power Marketing Inc. vs. Tractebel Energy Marketing, Inc. and Tractebel S.A. Case No. 03 CIV 6770, 03 CIV 6731 (S.D.N.Y.), January 28, 2008.

81. Proposed New Gas-Fired Plant, on behalf of AEP SWEPCO, 2007.

80. Rebuttal Report, Calpine Cash Flows, on behalf of Unsecured Creditor's Committee, November 21, 2007.

79. Expert Report. Calpine Cash Flows, on behalf of Unsecured Creditor's Committee, November 19, 2007.

78. Application of Duke Energy Carolina, LLC for Approval of Energy Efficiency Plan Including an Energy Efficiency Rider and Portfolio of Energy, Docket No. 2007-358-E, Public Service Commission of South Carolina, December 10, 2007.

77. Independent Transmission Cause No. PUD200700298, Application of ITC, Public Service of Oklahoma, December 7, 2007.

76. Verified Petition of Duke Energy Indiana, Inc. Requesting the Indiana Utility Regulatory Commission to Approve an Alternative Regulatory Plan Pursuant to Ind. Code š8-1-2.5-1, et. Seq. for the Offering of Energy Efficiency Conservation, Demand Response, and Demand-Side Management Programs and Associated Rate Treatment Including Incentives Pursuant to a Revised Standard Contract Rider No. 66 in Accordance With Ind. Code šš8-1-2.5-1 et seq. and 8-1-2-42(a); Authority

to Defer Program Costs Associated with its Energy Efficiency Portfolio of Programs; Authority to Implement New and Enhanced Energy Efficiency Programs, Including the PowerShare® Program in its Energy Efficiency Portfolio of Programs; and Approval of a Modification of the Fuel Adjustment Cause Earnings and Expense Tests, Indiana Utility Regulatory Commission, Cause No. 43374, October 19, 2007.

75. Rebuttal Testimony, Docket No. U-30192, Application of Entergy Louisiana, LLC For Approval to Repower the Little Gypsy Unit 3 Electric Generating Facility and for Authority to Commence Construction and for Certain Cost Protection and Cost Recovery, October 4, 2007.

74. Direct Testimony of Judah Rose on Behalf of Tucson Electric Power Company, In the matter of the Application of Tucson Electric Power Company for the Establishment of Just and Reasonable Rates and Charges Designed to Realize a Reasonable Rate of Return on the Fair Value of Its Operations Throughout the State of Arizona, Estimation of Market Value of Fleet of Utility Coal Plants, July 2, 2007.

73. Supplemental Testimony on behalf of Southwestern Electric Power Company before the Arkansas Public Service Commission, In the Matter of Application of Southwestern Electric Power Company for a Certificate of Environmental Compatibility and Public Need for the Construction, Ownership, Operation, and Maintenance of a Coal-Fired Base Load Generating Facility in the Hempstead County, Arkansas, dated June 15, 2007, Docket No. 06-154-U.

72. Rebuttal Testimony, Causes No. PUD 200500516, 200600030, and 20070001 Consolidated, on behalf of Redbud Energy, before the Corporation Commission of the State of Oklahoma, June 2007.

71. Rebuttal Testimony on behalf of Duke Energy Indiana, IGCC Coal Plant CPCN, Cause No. 43114 before the Indiana Utility Regulatory Commission, May 31, 2007.

70. Responsive Testimony, Causes No. PUD 200500516, 200600030, and 200700012 Consolidated, on behalf of Redbud Energy, before the Corporation Commission of the State of Oklahoma, May 2007.

69. Rebuttal Testimony on behalf of Florida Power & Light Company In Re: Florida Power & Light Company's Petition to Determine Need for FPL Glades Power Park Units 1 and 2 Electrical Power Plant, Docket No. 070098-EL, March 30, 2007.

68. Rebuttal Testimony, Electric Utility Power Hedging, on behalf of Duke Energy Indiana, Cause No. 38707-FAC6851, May 2007.

67. Direct Testimony for Southwestern Electric Power Company, Before the Louisiana Public Service Commission, Docket No. U-29702, in re: Application of Southwestern Electric Power Company for the Certification of Contracts for the Purchase of Capacity for 2007, 2008, and 2009 and to Purchase, Operate, Own, and Install Peaking, Intermediate and Base Load Coal-Fired Generating Facilities in Accordance with the Commission's General Order Dated September 20, 1983. Consolidated with Docket No. U-28766 Sub Docket B in re: Application of Southwestern Electric Power Company for Certification of Contracts for the Purchase of Capacity in Accordance with the Commission's 'General Order of September 20, 1983, February 2007.

66. Second Supplemental Testimony on Behalf of Duke Energy Ohio Before the Public Utility Commission of Ohio, Case No. 03-93-EL-ATA, 03-2079, EL-AAM, 03-2081, EL-AAM, 03-2080, EL-ATA, February 28, 2007.

65. Electric Utility Power Hedging, on behalf of Duke Energy Indiana, Cause No. 38707-FAC6851, February 2007.

64. Supplemental Testimony on behalf of Duke Energy Carolinas before the North Carolina Utilities Commission in the Matter of Application of Duke Energy Carolinas, LLC for Approval for an Electric Generation Certificate of Public Convenience and Necessity to Construct Two 800 MW State of Art Coal Units for Cliffside Project, Docket No. E7, SUB790, December 2006.

63. Expert Report, Chapter 11, Case No. 01-16034 (AJG) and Adv. Proc. No. 04-2933 (AJG), November 6, 2006.

62. IGCC Coal Plant, Testimony on behalf of Duke Energy Indiana, Cause No. 43114, October 2006.

61. Market Power and the PSEG Exelon Merger on Behalf of the NJBPU Staff, NJBPU, BPU Docket No. EM05020106 OAL Docket No. PUC-1874-05, Supplemental Testimony March 20, 2006.

60. Market Power and the PSEG Exelon Merger on Behalf of the NJBPU Staff, NJBPU, BPU Docket No. EM05020106, OAL Docket No. PUC-1874-05, Surrebuttal Testimony December 27, 2005.

59. Market Power and the PSEG Exelon Merger on Behalf of the NJBPU Staff, NJBPU, BPU Docket No. EM05020106, OAL Docket No. PUC-1874-05, November 14, 2005.

58. Brazilian Power Purchase Agreement, confidential international arbitration, October 2005.

57. Cost of Service and Fuel Clause Issues, Rebuttal Testimony on behalf of Public Service of New Mexico, Docket No. EL05-151, November 2005.

56. Cost of Service and Peak Demand, FERC, Testimony on behalf of Public Service of New Mexico, September 19, 2005, Docket No. EL05-19.

55. Cost of Service and Fuel Clause Issues, Testimony on behalf of Public Service of New Mexico, FERC Docket No. EL05-151-000, September 15, 2005.

54. Cost of Service and Peak Demand, FERC, Responsive Testimony on behalf of Public Service of New Mexico, August 23, 2005, Docket No. EL05-19.

53. Prudence of Acquisition of Power Plant, Testimony on behalf of Redbud, September 12, 2005, No. PUD 200500151.

52. Proposed Fuel Cost Adjustment Clause, FERC, Docket Nos. EL05-19-002 and ER05-168-001 (Consolidated), August 22, 2005.

51. Market Power and the PSEG Exelon Merger on Behalf of the NJBPU, FERC, Docket EC05-43-000, May 27, 2005.

50. New Air Emission Regulations and Investment in Coal Power Plants, rebuttal testimony on behalf of PSI, April 18, 2005, Causes 42622 and 42718.

49. Rebuttal Report: Damages due to Rejection of Tolling Agreement Including Discounting, February 9, 2005, CONFIDENTIAL.

48. New Air Emission Regulations and Investment in Coal Power Plants, supplemental testimony on behalf of PSI, January 21, 2005, Causes 42622 and 42718.

47. Damages Due to Rejection of Tolling Agreement Including Discounting, January 10, 2005, CONFIDENTIAL.

46. Discount rates that should be used in estimating the damages to GTN of Mirant's bankruptcy and subsequent abrogation of the gas transportation agreements Mirant had entered into with GTN, December 15, 2004. CONFIDENTIAL

45. New Air Emission Regulations and Investment in Coal Power Plants, testimony on behalf of PSI, November 2004, Causes 42622 and 42718.

44. Rebuttal Testimony of Judah Rose on behalf of PSI, "Certificate of Purchase as of yet Undetermined Generation Facility" Cause No. 42469, August 23, 2004.

43. Rebuttal Testimony of Judah Rose on behalf of the Hopi Tribe, Case No. A.02-05-046, Mohave Coal Plant Economics, June 4, 2004.

42. Supplemental Testimony "Retail Generation Rates, Cost Recovery Associated with the Midwest Independent Transmission System Operator, Accounting Procedures for Transmission and Distribution System, Case No. 03-93-EL-ATA, 03-2079, EL-AAM, 03-2081, EL-AAM, 03-2080, EL-ATA for Cincinnati Gas & Electric, May 20, 2004.

41. "Application of Southern California Edison Company (U338-E) Regarding the Future Disposition of the Mohave Coal-Fired Generating Station," May 14, 2004.

40. "Appropriate Rate of Return on Equity (ROE) TransAlta Should be Authorized For its Capital Investment Related to VAR Support From the Centralia Coal-Fired Power Plant", for TransAlta, April 30, 2004, FERC Docket No. ER04-810-000.

39. "Retail Generation Rates, Cost Recovery Associated with the Midwest Independent Transmission System Operator, Accounting Procedures for Transmission and Distribution System, Case No. 03-93-EL-ATA, 03-2079, EL-AAM, 03-2081, EL-AAM, 03-2080, EL-ATA for Cincinnati Gas & Electric, April 15, 2004.

38. "Valuation of Selected MIRMA Coal Plants, Acceptance and Rejection of Leases and Potential Prejudice to Leasors" Federal Bankruptcy Court, Dallas, TX, March 24, 2004 CONFIDENTIAL.

37. "Certificate of Purchase as of yet Undetermined Generation Facility", Cause No. 42469 for PSI, March 23, 2004.

36. "Ohio Edison's Sammis Power Plant BACT Remedy Case", In the United States District Court of Ohio, Southern Division, March 8, 2004.

35. "Valuation of Power Contract," January 2004, confidential arbitration.

34. "In the matter of the Application of the Union Light Heat & Power Company for a Certificate of Public Convenience and Necessity to Acquire Certain Generation Resources, etc.", before the Kentucky Public Service Commission, Coal-Fired and Gas-Fired Market Values, July 21, 2003.

33. "In the Supreme Court of British Columbia", July 8, 2003. CONFIDENTIAL

32. "The Future of the Mohave Coal-Fired Power Plant – Rebuttal Testimony", California P.U.C., May 20, 2003.

31. "Affidavit in Support of the Debtors' Motion", NRG Bankruptcy, Revenues of a Fleet of Plants, May 14, 2003. CONFIDENTIAL

30. "IPP Power Purchase Agreement," confidential arbitration, April 2003.

29. "The Future of the Mohave Coal-Fired Power Plant", California P.U.C., March 2003.

28. "Power Supply in the Pacific Northwest," contract arbitration, December 5, 2002. CONFIDENTIAL

27. "Power Purchase Agreement Valuation", Confidential Arbitration, October 2002.

26. "Cause No. 42145 - In support of PSI's petition for authority to acquire the Madison and Henry County plants, rebuttal testimony on behalf of PSI. Filed on 8/23/02."

25. "Cause No. 42200 - in support of PSI's petition for authority to recover through retail rates on a timely basis. Filed on 7/30/02."

24. "Cause No. 42196 - in support of PSI's petition for interim purchased power contract. Filed on 4/26/02."

23. "Cause No. 42145 - In support of PSI's petition for authority to acquire the Madison and Henry County plants. Filed on 3/1/2002."

22. "Analysis of an IGCC Coal Power Plant", Minnesota state senate committees, January 22, 2002.

21. "Analysis of an IGCC Coal Power Plant", Minnesota state house of representative committees, January 15, 2002

20. "Interim Pricing Report on New York State's Independent System Operator", New York State Public Service Commission (NYSPSC), January 5, 2001

19. "The need for new capacity in Indiana and the IRP process", Indiana Utility Regulatory Commission, October 26, 2000

18. "Damage estimates for power curtailment for a Cogen power plant in Nevada", August 2000. CONFIDENTIAL

17. "Valuation of a power plant in Arizona", arbitration, July 2000. CONFIDENTIAL

16. Application of FirstEnergy Corporation for approval of an electric Transition Plan and for authorization to recover transition revenues, Stranded Cost and Market Value of a Fleet of Coal, Nuclear, and Other Plants, Before PUCO, Case No. 99-1212-EL-ETP, October 4, 1999 and April 2000.

15. "Issues Related to Acquisition of an Oil/Gas Steam Power plant in New York", September 1999 Affidavit to Hennepin County District Court, Minnesota

14. "Wholesale Power Prices, A Cost Plus All Requirements Contract and Damages", Cajun Bankruptcy, July 1999. Testimony to U.S. Bankruptcy Court.

13. "Power Prices." Testimony in confidential contract arbitration, July 1998.

12. "Horizontal Market Power in Generation." Testimony to New Jersey Board of Public Utilities, May 22, 1998.

11. "Basic Generation Services and Determining Market Prices." Testimony to the New Jersey Board of Public Utilities, May 12, 1998.

10. "Generation Reliability." Testimony to New Jersey Board of Public Utilities, May 4, 1998.

9. "Future Rate Paths and Financial Feasibility of Project Financing." Cajun Bankruptcy, Testimony to U.S. Bankruptcy Court, April 1998.

8. "Stranded Costs of PSE&G." Market Valuation of a Fleet of Coal, Nuclear, Gas, and Oil-Fired Power Plants, Testimony to New Jersey Board of Public Utilities, February 1998.

7. "Application of PECO Energy Company for Approval of its Restructuring Plan Under Section 2806 of the Public Utility Code." Market Value of Fleet of Nuclear, Coal, Gas, and Oil Power Plants, Rebuttal Testimony filed July 1997.

6. "Future Wholesale Electricity Prices, Fuel Markets, Coal Transportation and the Cajun Bankruptcy." Testimony to Louisiana Public Service Commission, December 1996.

5. "Curtailment of the Saguaro QF, Power Contracting and Southwest Power Markets." Testimony on a contract arbitration, Las Vegas, Nevada, June 1996.

4. "Future Rate Paths and the Cajun Bankruptcy." Testimony to the U.S. Bankruptcy Court, June 1997.

3. "Fuel Prices and Coal Transportation." Testimony to the U.S. Bankruptcy Court, June 1997.

2. "Demand for Gas Pipeline Capacity in Florida from Electric Utilities." Testimony to Florida Public Service Commission, May 1993.

1. "The Case for Fuel Flexibility in the Florida Electric Generation Industry." Testimony to the Florida Department of Environmental Regulation (Der), Hearings on Fuel Diversity and Environmental Protection, December 1992.

Selected Speaking Engagements

115. Rose, J.L., The Polar Vortex, System Reliability and Recent PJM Developments, American Municipal Power Conference, October 28, 2014.

114. Rose, J.L., Wholesale power Market Price Projection in California, Infocast, California Energy Summit, San Francisco, CA, May 28, 2014.

113. Rose, J.L., The Polar Vortex and Future Power system Trends, National Coal Council, 2014 Annual Spring Meeting, May 14, 2014.

112. Rose, J.L., The Polar Vortex and System Reliability, The Energy Authority (TEA), Jacksonville, FL, April 30, 2014.

111. Rose, J.L., Utility and Transco Plans and Transmission Projects to Deal with the Changing Generation Resource Mix, Panel Moderator, Transmission Summit Panel Discussion, March 14, 2014.

110. Rose, J.L., Examining Natural Gas and Power Price Dynamics During the Polar Vortex, APPA, March 10, 2014.

109. Rose, J.L., Polar Vortex – Skating too Close to the Edge, First Friday Club, March 7, 2014.

108. Rose, J.L., New Developments in the California Power Market, Infocast California Energy Summit, San Francisco, CA, December 3, 2013.

107. Rose, J.L., Financial Issues in Determining the Disposition of Fossil Power Plants, Managing the Power Plant Decommissioning, Decontamination, and Demolition Process, November 7, 2013.

106. Rose, J.L, Reality and Impacts of Plant Retirements, Reading Tea Leaves – The Future of America's Installed Power Plants, July 25, 2013.

105. Rose, J.L., Financial issues in Determining the Disposition of Fossil Power Plants, Plant Decommissioning, Decontamination, and Demolition, May 9, 2013.

104. Rose, J.L., Financial Issues in Determining the Disposition of Plant Decommissioning, Decontamination & Demolition Summit, Infocast, May 1, 2013.

103. Rose, J.L., Implications of Current Low Natural Gas Price Environment on Wholesale Power, Edison Electric Institute, May 3, 2012.

102. Rose, J.L., Anticipating the Next Turn in a Gas-Rich Environment, Key Pricing Drivers, and Outlook, Houlihan and Lokey Merchant Energy Conference, April, 24, 2012.

101. Rose, J.L., CREPC/SPSC Natural Gas – Electricity in West Panel, San Diego, April 3, 2012

100. Rose, J.L., EUCI Financing Transmission Expansion, San Diego, CA, March 8-9, 2011.

99. Rose, J.L., Vinson & Elkins Conference, Houston, TX, November 11, 2010.

98. Rose, J.L., Fundamentals of Electricity Transmission, EUCI, Crystal City, Arlington, VA, June 29-30, 2010.

97. Rose, J.L., Economics of PC Refurbishment, Improving the Efficiency of Coal-Fired Power Generation in the U.S., DOE-NETL, February 24, 2010.

96. Rose, J.L., Fundamentals of Electricity Transmission, EUCI, Orlando, FL, January 25-26, 2010.

95. Rose, J.L., CO_2 Control, "Cap & Trade", & Selected Energy Issues, Multi-Housing Laundry Association, October 26, 2009.

94. Rose, J.L., Financing for the Future – Can We Afford It?, 2009 Bonbright Conference, October 9, 2009.

93. Rose, J.L., EEI's Transmission and Market Design School, Washington, D.C., June 2009.

92. Rose, J.L., ICF's New York City Energy Forum - Market Recovery in Merchant Generation Assets, June 10, 2008.

91. Rose, J.L., Southeastern Electric Exchange – Integrated Resource Planning Task Force Meeting, Carbon Tax Outlook Discussion, February 21-22, 2008.

90. Rose, J.L., AESP, NEEC Conference, Rising Prices and Failing Infrastructure: A Bleak or Optimistic Future, Marlborough, MA, October 23, 2006.

89. Rose, J.L., Infocast Gas Storage Conference, "Estimating the Growth Potential for Gas-Fired Electric Generation," Houston, TX, March 22, 2006.

88. Rose, J.L., "Power Market Trends Impacting the Value of Power Assets," Infocast Conference, Powering Up for a New Era of Power Generation M&A, February 23, 2006.

87. Rose, J.L., "The Challenge Posed by Rising Fuel and Power Costs", Lehman Brothers, November 2, 2005.

86. Rose, J.L., "Modeling the Vulnerability of the Power Sector", EUCI – Securing the Nation's Energy Infrastructure, September 19, 2005

85. Rose, J.L., "Fuel Diversity in the Northeast, Energy Bar Association, Northeast Chapter Meeting, New York, NY, June 9, 2005.

84. Rose, J.L., "2005 Macquarie Utility Sector Conference", Macquarie Utility Sector Conference, Vail, CO, February 28, 2005.

83. Rose, J.L., "The Outlook for North American Natural Gas and Power Markets", The Institute for Energy Law, Program on Oil and Gas Law, Houston, TX, February 18, 2005.

82. Rose, J.L. "Assessing the Salability of Merchant Assets – What's on the Horizon?" Infocast – The Market for Power Assets, Phoenix, AZ, February 10, 2005.

81. Rose, J.L. "Market Based Approaches to Transmission – Longer-Term Role", National Group of Municipal Bond Investors, New York, NY, December 10, 2004.

80. Rose, J.L. "Supply & Demand Fundamentals – What is Short-Term Outlook and the Long-Term Demand? Platt's Power Marketing Conference, Houston, TX, October 11, 2004.

79. Rose, J.L. "Assessing the Salability of Merchant Assets – When Will We Hit Bottom?, Infocast's Buying, Selling, and Investing in Energy Assets Conference, Houston, TX, June 24, 2004.

78. Rose, J. L. "After the Blackout – Questions That Every Regulator Should be Asking," NARUC Webinar Conference, Fairfax, VA, November 6, 2003.

77. Rose, J. L., "Supply and Demand in U.S. Wholesale Power Markets," Lehman Brothers Global Credit Conference, New York, NY, November 5, 2003.

76. Rose, J.L., “Assessing the Salability of Merchant Assets – When Will We Hit Bottom?”, Infocast’s Opportunities in Energy Asset Acquisition, San Francisco, CA, October 9, 2003.

75. Rose, J.L., “Asset Valuation in Today’s Market”, Infocast’s Project Finance Tutorial, New York, NY, October 8, 2003.

74. Rose, J.L., “Forensic Evaluation of Problem Projects”, Infocast’s Project Finance Workouts: Dealing With Distressed Energy Projects, September 17, 2003.

73. Rose, J.L., National Management Emergency Association, Seattle, WA, September 8, 2003.

72. Rose, J.L., “Assessing the Salability of Merchant Assets – When Will We Hit Bottom?”, Infocast’s Buying, Selling & Investing in Energy Assets, Chicago, IL, July 24, 2003.

71. Rose, J.L., CSFB Leveraged Finance Independent Power Producers and Utilities Conference, New York, NY, “Spark Spread Outlook”, July 17, 2003.

70. Rose, J.L., Multi-Housing Laundry Association, Washington, D. C., “Trends in U.S. Energy and Economy”, June 24, 2003.

69. Rose, J.L., “Power Markets: Prices, SMD, Transmission Access, and Trading”, Bechtel Management Seminar, Frederick, MD, June 10, 2003.

68. Rose, J.L., Platt’s Global Power Market Conference, New Orleans, LA, “The Outlook for Recovery,” March 31, 2003.

67. Rose, J.L., “Electricity Transmission and Grid Security”, Energy Security Conference, Crystal City, VA, March 25, 2003.

66. Rose, J.L., “Assessing the Salability of Merchant Assets – When Will We Hit Bottom?, Infocast’s Buying, Selling & Investing in Energy Assets, New York City, February 27, 2003.

65. Rose, J.L., Panel Discussion, “Forensic Evaluation of Problem Projects”, Infocast Conference, NY, February 24, 2003.

64. Rose, J.L., PSEG Off-Site Meeting Panel Discussion, February 6, 2003 (April 13, 2003).

63. Rose, J.L., “The Merchant Power Market—Where Do We Go From Here?” Center for Business Intelligence’s Financing U.S. Power Projects, November 18-19, 2002.

62. Rose, J.L., “Assessing U.S. Regional and the Potential for Additional Coal-Fired Generation in Each Region,” Infocast’s Building New Coal-Fired Generation Conference, October 8, 2002.

61. Rose, J.L., “Predicting the Price of Power for Asset Valuation in the Merchant Power Financings, ”Infocast’s Product Structuring in the Real World Conference, September 25, 2002.

60. Rose, J.L., “PJM Price Outlook,” Platt’s Annual PJM Regional Conference, September 24, 2002.

59. Rose, J.L., “Why Investors Are Zeroing in on Upgrading Our Antiquated Power Grid Rather Than Exotic & Complicated Technologies,” New York Venture Group’s Investing in the Power Industry—Targeting The Newest Trends Conference, July 31, 2002.

58. Rose, J.L., Panel Participant in the Salomon Smith Barney Power and Energy Merchant Conference 2002, May 15, 2002.

57. Rose, J.L., "Locational Market Price (LMP) Forecasting in Plant Financing Decisions," Structured Finance Institute, April 8-9, 2002.

56. Rose, J.L., "PJM Transmission and Generation Forecast", Financial Times Energy Conference, November 6, 2001.

55. Rose, J.L., "U.S. Power Sector Trends", Credit Suisse First Boston's Power Generation Supply Chain Conference, Web Presented Conference, September 12, 2002.

54. Rose, J.L., "Dealing with Inter-Regional Power Transmission Issues", Infocast's Ohio Power Game Conference, September 6, 2001

53. Rose, J.L., "Where's the Next California", Credit Suisse First Boston's Global Project Finance Capital Markets Conference, New York NY, June 27 2001

52. Rose, J.L, "U.S. Energy Issues: What MLA Members Need to Know," Multi-housing Laundry Association, Boca Raton Florida, June 25, 2001

51. Rose, J.L., "How the California Meltdown Affects Power Development", Infocast's Power Development and Finance Conference 2001, Washington D.C., June 12, 2001

50. Rose, J.L., "Forecasting 2001 Electricity Prices" presentation and workshop, What to Expect in western Power Markets this Summer 2001 Conference, Denver, Colorado, May 2, 2001

49. Rose, J.L., "Power Crisis in the West" Generation Panel Presentation, San Diego, California, February 12, 2001

48. Rose, J.L., "An Analysis of the Causes leading to the Summer Price Spikes of 1999 & 2000" Conference Chair, Infocast Managing Summer Price Volatility, Houston, Texas, January 30, 2001.

47. Rose, J. L., "An Analysis of the Power Markets, summer 2000" Generation Panel Presentation, Financial Times Power Mart 2000 conference, Houston, Texas, October 18, 2000.

46. Rose, J.L., "An Analysis of the Merchant Power Market, Summer 2000" presentation, Conference Chair, Merchant Power Finance Conference, Atlanta, Georgia, September 11 to 15, 2000

45. Rose, J.L., "Understanding Capacity Value and Pricing Firmness" presentation, Conference Chair, Merchant Plant Development and Finance Conference, Houston, Texas, March 30, 2000.

44. Rose, J.L., "Implementing NYPP's Congestion Pricing and Transmission Congestion Contract (TCC)", Infocast Congestion Pricing and Forecasting Conference, Washington D.C., November 19, 1999.

43. Rose, J.L., "Understanding Generation" Pre-Conference Workshop, Powermart, Houston, Texas, October 26-28, 1999.

42. Rose, J.L., "Understanding Capacity Value and Pricing Firmness" presentation, Conference Chair Merchant Plant Development and Finance Conference, Houston, Texas, September 29, 1999.

41. Rose, J.L., “Comparative Market Outlook for Merchant Assets” presentation, Merchant Power Conference, New York, New York, September 24, 1999.

40. Rose, J.L., “Transmission, Congestion, and Capacity Pricing” presentation, Transmission The Future of Electric Transmission Conference, Washington, DC, September 13, 1999.

39. Rose, J.L., “Effects of Market Power on Power Prices in Competitive Energy Markets” Keynote Address, The Impact of Market Power in Competitive Energy Markets Conference, Washington, DC, July 14, 1999.

38. Rose, J.L., “Peak Price Volatility in ECAR and the Midwest, Futures Contracts: Liquidity, Arbitrage Opportunity” presentation at ECAR Power Markets Conference, Columbus, Ohio, June 9, 1999.

37. Rose, J.L., “Transmission Solutions to Market Power” presentation, Do Companies in the Energy Industry Have Too Much Market Power? Conference, Washington, DC, May 24, 1999.

36. Rose, J.L., “Repowering Existing Power Plants and Its Impact on Market Prices” presentation, Exploiting the Full Energy Value-Chain Conference, Chicago, Illinois, May 17, 1999.

35. Rose, J.L., “Transmission and Retail Issues in the Electric Industry” Session Speaker, Gas Mart/Power 99 Conference, Dallas, Texas, May 10, 1999.

34. Rose, J.L., “Peak Price Volatility in the Rockies and Southwest” presentation at Repowering the Rockies and the Southwest Conference, Denver, Colorado, May 5, 1999.

33. Rose, J.L., “Understanding Generation” presentation and Program Chairman at Buying & Selling Power Assets: The Great Generation Sell-Off Conference, Houston, Texas, April 20, 1999.

32. Rose, J.L., “Buying Generation Assets in PJM” presentation at Mid-Atlantic Power Summit, Philadelphia, Pennsylvania, April 12, 1999.

31. Rose, J.L., “Evaluating Your Generation Options in Situations With Insufficient Transmission,” presentation at Congestion Management Conference, Washington, D.C., March 25, 1999.

30. Rose, J.L., “Will Capacity Prices Drive Future Power Prices?” presentation at Merchant Plant Development Conference, Chicago, Illinois, March 23, 1999.

29. Rose, J.L., “Capacity Value – Pricing Firmness,” presentation at Market Price Forecasting Conference, Atlanta, Georgia, February 25, 1999

28. Rose, J.L., “Developing Reasonable Expectations About Financing New Merchant Plants That Have Less Competitive Advantage Than Current Projects,” presentation at Project Finance International’s Financing Power Projects in the USA conference, New York, New York, February 11, 1999.

27. Rose, J.L., “Transmission and Capacity Pricing and Constraints,” presentation at Power Fair 99, Houston, Texas, February 4, 1999.

26. Rose, J.L., “Peak Price Volatility: Comparing ERCOT With Other Regions,” presentation at Megawatt Daily’s Trading Power in ERCOT conference, Houston, Texas, January 13, 1999.

25. Rose, J.L., “The Outlook for Midwest Power Markets,” presentation to The Institute for Regulatory Policy Studies at Illinois State University, Springfield, Illinois, November 19, 1998.

24. Rose, J.L., “Developing Pricing Strategies for Generation Assets,” presentation at Wholesale Power in the West conference, Las Vegas, Nevada, November 12, 1998.

23. Rose, J.L., “Understanding Electricity Generation and Deregulated Wholesale Power Prices,” a full-day pre-conference workshop at Power Mart 98, Houston, Texas, October 26, 1998.

22. Rose, J.L., “The Impact of Power Generation Upgrades, Merchant Plant Developments, New Transmission Projects and Upgrades on Power Prices,” presentation at Profiting in the New York Power Market conference, New York, NY, October 22, 1998.

21. Rose, J.L., “Capacity Value – Pricing Firmness,” presentation to Edison Electric Institute Economics Committee, Charlotte, NC, October 8, 1998.

20. Rose, J.L., “Locational Marginal Pricing and Futures Trading,” presentation at Megawatt Daily’s Electricity Regulation conference, Washington, D.C., October 7, 1998.

19. Rose, J.L., Chairman’s opening speech and “The Move Toward a Decentralized Approach: How Will Nodal Pricing Impact Power Markets?” at Congestion Pricing and Tariffs conference, Washington, D.C., September 25, 1998.

18. Rose, J.L., “The Generation Market in MAPP/MAIN: An Overview,” presentation at Megawatt Daily’s MAIN/MAPP – The New Dynamics conference, Minneapolis, Minnesota, September 16, 1998.

17. Rose, J.L., “Capacity Value – Pricing Firmness,” presentation at Market Price Forecasting conference, Baltimore, Maryland, August 24, 1998.

16. Rose, J.L., “ICF Kaiser’s Wholesale Power Market Model,” presentation at Market Price Forecasting conference, New York, New York, August 6, 1998.

15. Rose, J.L., Campbell, R., Kathan, David, “Valuing Assets and Companies in M&A Transactions,” full-day workshop at Utility Mergers & Acquisitions conference, Washington, D.C., July 15, 1998.

14. Rose, J.L., “Must-Run Nuclear Generation’s Impact on Price Forecasting and Operations,” presentation at The Energy Institute’s conference entitled “Buying and Selling Electricity in the Wholesale Power Market,” Las Vegas, Nevada, June 25, 1998.

13. Rose, J.L., “The Generation Market in PJM,” presentation at Megawatt Daily’s PJM Power Markets conference, Philadelphia, Pennsylvania, June 17, 1998.

12. Rose, J.L., “Market Evaluation of Electric Generating Assets in the Northeast,” presentation at McGraw-Hill’s conference: Electric Asset Sales in the Northeast, Boston, Massachusetts, June 15, 1998.

11. Rose, J.L., “Overview of SERC Power,” opening speech presented at Megawatt Daily’s SERC Power Markets conference, Atlanta, Georgia, May 20, 1998.

10. Rose, J.L., “Future Price Forecasting,” presentation at The Southeast Energy Buyers Summit, Atlanta, Georgia, May 7, 1998.

9. Rose, J.L., “Practical Risk Management in the Power Industry,” presentation at Power Fair, Toronto, Canada, April 16, 1998.

8. Rose, J.L., “The Wholesale Power Market in ERCOT: Transmission Issues,” presentation at Megawatt Daily’s ERCOT Power Markets conference, Houston, Texas, April 1, 1998.

7. Rose, J.L., “New Generation Projects and Merchant Capacity Coming On-Line,” presentation at Northeast Wholesale Power Market conference, New York, New York, March 18, 1998.

6. Rose, J.L., “Projecting Market Prices in a Deregulated Electricity Market,” presentation at conference: Market Price Forecasting, San Francisco, California, March 9, 1998.

5. Rose, J.L., “Handling of Transmission Rights,” presentation at conference: Congestion Pricing & Tariffs, Washington, D.C., January 23, 1998.

4. Rose, J.L., “Understanding Wholesale Markets and Power Marketing,” presentation at The Power Marketing Association Annual Meeting, Washington, D.C., November 11, 1997.

3. Rose, J.L., “Determining the Electricity Forward Curve,” presentation at seminar: Pricing, Hedging, Trading, and Risk Management of Electricity Derivatives, New York, New York, October 23, 1997.

2. Rose, J.L., “Market Price Forecasting In A Deregulated Market,” presentation at conference: Market Price Forecasting, Washington, D.C., October 23, 1997,

1. Rose, J.L., “Credit Risk Versus Commodity Risk,” presentation at conference: Developing & Financing Merchant Power Plants in the New U.S. Market, New York, New York, September 16, 1997.

Selected Publications and Presentations

Rose, J.L., “Return of the RTO: Auction Results Portend Recovery,” White Paper, June 14, 2014.

Rose, J. L., “The Next Polar Vortex: How Long Will Grid Emergencies and Price Volatility Continue?” Public Utilities Fortnightly, June 2014.

Rose, J.L., “Wind Curtailment, Assessing and Mitigating Risks,” White Paper, December 2012.

Rose, J.L. and Henning, B. “Partners in Reliability: Gas and Electricity,” PowerNews, September 1, 2012.

Rose, J.L. and Surana, S. “Using Yield Curves and Energy Prices to Forecast Recessions – An Update.” World Generation, March/April 2011, V.23 #2.

Rose, J.L. and Surana, S. “Oil Price Increases, Yield Curve Inversion may be Indicators of Economic Recession.” Oil and Gas Financial Journal, Volume 7, Issue 6, June 2010

Rose, J.L. and Surana, S. “Forecasting Recessions and Investment Strategies.” World-Generation, June/July 2010, V.22, #3.

Rose, J.L., “Should Environmental Restrictions be Eased to Allow for the Construction of More Power Plants? The Costco Connection, April 2001.

Rose, J.L., "Deregulation in the US Generation Sector: A Mid-Course Appraisal", Power Economics, October 2000.

Rose, J. L., "Price Spike Reality: Debunking the Myth of Failed Markets", *Public Utilities Fortnightly,* November 1, 2000.

Rose, J.L., "Missed Opportunity: What's Right and Wrong in the FERC Staff Report on the Midwest Price Spikes," *Public Utilities Fortnightly,* November 15, 1998.

Rose, J.L., "Why the June Price Spike Was Not a Fluke," *The Electricity Journal*, November 1998.

Rose, J.L., S. Muthiah, and J. Spencer, "Will Wall Street Rescue the Competitive Wholesale Power Market?" *Project Finance International*, May 1998.

Rose, J.L., "Last Summer's "Pure" Capacity Prices – A Harbinger of Things to Come," *Public Utilities Fortnightly,* December 1, 1997.

Rose, J.L., D. Kathan, and J. Spencer "Electricity Deregulation in the New England States," *Energy Buyer*, Volume 1, Issue 10, June-July 1997.

Rose, J.L., S. Muthiah, and M. Fusco, "Financial Engineering in the Power Sector," *The Electricity Journal,* Jan/Feb 1997.

Rose, J.L, S. Muthiah, and M. Fusco, "Is Competition Lacking in Generation? (And Why it Should Not Matter)," *Public Utilities Fortnightly,* January 1, 1997.

Mann, C. and J.L. Rose, "Price Risk Management: Electric Power vs. Natural Gas," *Public Utilities Fortnightly,* February 1996.

Rose, J.L. and C. Mann, "Unbundling the Electric Capacity Price in a Deregulated Commodity Market," *Public Utilities Fortnightly,* December 1995.

Booth, William and J.L. Rose, "FERC's Hourly System Lambda Data as Interim Bulk Power Price Information," *Public Utilities Fortnightly,* May 1, 1995.

Rose, J.L. and M. Frevert, "Natural Gas: The Power Generation Fuel for the 1990s." Published by Enron.

Employment History

ICF International	Executive Director	2015-Present
ICF International	Managing Director	1999-2015
ICF International	Vice President	1996-1999
ICF International	Project Manager	1993-1996
ICF International	Senior Associate	1986-1993
ICF International	Associate	1982-1986

BEFORE THE
NEW YORK STATE
SITING BOARD ON ELECTRIC GENERATION SITING
AND THE ENVIRONMENT

Application of Danskammer Energy, LLC for a Certificate of Environmental Compatibility and Public Need Pursuant to Article 10 for Approval to Repower its Danskammer Generating Station Site Located in the Town of Newburgh, Orange County	Case No.: 18-F-0325

PRE-FILED TESTIMONY OF TIMOTHY SARA

ON BEHALF OF

DANSKAMMER ENERGY, LLC

Q. Please state your name, employer, position and business address.

A. My name is Timothy Sara. I am currently employed by TRC as a Program Manager, Cultural Resources. My business address is TRC, 4425 Forbes Blvd, Suite B, Lanham, MD 20706.

Q. How long have you been employed with TRC?

A. I have been employed by TRC since November 2007.

Q. On whose behalf are you testifying?

A. I am testifying on behalf of Danskammer Energy, LLC ("Danskammer" or "the Applicant").

Q. Please describe your educational background and professional experience.

I have a Bachelor of Arts degree in Anthropology and Geography from Binghamton University, New York and a Master of Arts degree in Anthropology from Hunter College, City University of New York. My experience includes archaeological studies and cultural resources management. In addition, I have worked as an Archaeologist. A copy of my resume is attached.

Q. Please describe your current responsibilities with TRC.

A. As a Cultural Resources Program Manager and Office Practice Leader, my responsibilities include preparing proposals, budgets, and scopes of work for energy development projects. In addition to my role as Office Practice Leader, I also play an active role in the business management of TRC. I am certified by the Register of Professional Archaeologists (RPA). Since joining TRC, I have worked with State Historic Preservation Office and Federal agency reviewers, including the New York Office of Parks, Recreation and Historic Preservation (OPRHP) and Federal Energy

Regulatory Commission. I have worked on various energy projects, including the repowering project proposed by Danskammer (the "Project").

Q. Have you testified in other proceedings before the New York State Public Service Commission or Siting Board on Electric Generation?

A. No.

Q. Have you previously served as an expert witness before any other court, agency, or other body on the subject you plan to offer testimony on today?

A. No.

Q. What is the purpose and scope of your testimony in this proceeding?

A. As a consulting archaeologist for TRC, one of Danskammer's consultants for the Project, I have been responsible for ensuring proper management of archaeological resources affected by the Project.

Q. What portion(s) of the Application is your testimony sponsoring?

A. I am a member of the Panel sponsoring Exhibit 20 of Danskammer's Article 10 Application.

Q. Were these portion(s) of the Application mentioned in the paragraph above prepared by you or under your direction and supervision?

A. Yes.

Q. In your testimony, will you refer to, or otherwise rely upon, any studies, publications, data or documents produced by persons other than yourself/your company? If so, please cite these sources.

A. Yes. My testimony will refer to archaeological data on file at OPRHP. Any other citations to such sources are set forth in Exhibit 20, as applicable.

Q. Does this complete your testimony?

A. Yes.

Timothy Sara, RPA

Program Manager, Cultural Resources/Archaeology

CREDENTIALS

Education:

- M.A., Anthropology, Hunter College, City University of New York, 1994
- B.A., Anthropology and Geography, State University of New York at Binghamton, 1984
- M.A. Thesis Title: Prehistoric Landscape Use in the Upper Swift River Valley, Massachusetts

Professional Registrations/Certifications/ Training:

- Register of Professional Archaeologists

Timothy Sara, RPA is a Registered Professional Archaeologist (RPA) with 34 years of professional experience in cultural resources management and historic preservation planning. Over the course of amassing his experience, he has designed and directed surveys and excavations of historic and prehistoric archaeological resources in the Northeast, Mid-Atlantic, Southeast, Midwest, Southwest, and Caribbean. He has also obtained a thorough knowledge of Section 110 and Section 106 and of the National Historic Preservation Act as amended (NHPA) and applying the National Register of Historic Places (NRHP) eligibility criteria to cultural resources. Mr. Sara has received honors and awards for both his academic and professional studies.

As a professional in the field of cultural resources management, Mr. Sara has also worked directly with other environmental conservation program areas implemented by the National Environmental Policy Act (NEPA). He has served as a key member of overall environmental planning teams, working with other environmental professionals including soil scientists, wetlands specialists, biologists, and hazardous waste managers. He has been a contributing author on more than 50 Environmental Assessments (EAs) and/or Environmental Impact Statements (EIS) and principal or contributing author to more than 200 cultural resources management reports. Mr. Sara currently serves as Program Manager and Office Practice Leader for TRC's Lanham, Maryland office with responsibility for all business functions of the office as well as quality control and staff management.

EXPERIENCE

Professional Summary:

- 34 years of experience in cultural resources management and historic preservation planning

Areas of Expertise:

- Northeastern Historical and Prehistoric Archaeology
- Cultural Resource Permitting for Energy Development Projects
- Survey and Resource Evaluation
- Project Management for Cultural Resources Studies
- Environmental Impact Assessment and Studies
- Public Outreach and Exhibit Services

PROJECT EXPERIENCE

280 MW Solar Project, Phase IA Archaeological Study, Genesee County, New York (Principal Investigator/Project Manager 2019). Prepared research design and directed all aspects of archaeological background research associated with solar energy development project in western New York. Contributing author of report submitted to Confidential Client and New York State Historic Preservation Office. Prepared Exhibit 20 (Cultural Resources) for Public Service Law Article 10 proceeding.

80 MW Solar Project, Phase IA Archaeological Study, Seneca County, New York (Principal Investigator/Project Manager 2019). Prepared research design and directed all aspects of archaeological background research associated with solar energy development project in western New York. Contributing author of report submitted to Confidential Client and New York State Historic Preservation Office. Prepared Exhibit 20 (Cultural Resources) for Public Service Law Article 10 proceeding.

PROJECT EXPERIENCE (continued)

50 MW Solar Project, Phase IA Archaeological Study, Schuyler County, New York (Principal Investigator/Project Manager 2019). Prepared research design and directed all aspects of archaeological background research associated with solar energy development project in eastern New York. Contributing author of report submitted to Confidential Client and New York State Historic Preservation Office. Prepared Exhibit 20 (Cultural Resources) for Public Service Law Article 10 proceeding.

50 MW Solar Project, Phase IA and IB Archaeological Studies, Schoharie County, New York (Principal Investigator/ Project Manager 2018 - 2019). Prepared research design and directed all aspects of archaeological background and field research associated with solar energy development project in eastern New York. Contributing author of report submitted to Confidential Client and New York State Historic Preservation Office. Prepared Exhibit 20 (Cultural Resources) for Public Service Law Article 10 proceeding.

90 MW Solar Project, Phase IA and IB Archaeological Studies, Montgomery County, New York (Principal Investigator/ Project Manager 2018 - 2019). Prepared research design and directed all aspects of archaeological background and field research associated with solar energy development project in eastern New York. Contributing author of report submitted to Confidential Client and New York State Historic Preservation Office. Prepared Exhibit 20 (Cultural Resources) for Public Service Law Article 10 proceeding.

Public Service Enterprise Group Long Island LLC, Multiple Repeater Site Projects, Nassau and Suffolk Counties, New York (Principal Investigator/Project Manager (2018). Mr. Sara directed background research and evaluated archaeological sensitivity for 18 proposed communication tower locations across Long Island. On behalf of PSEG, he also prepared consultation letters to the New York State Office of Parks, Recreation, and Historic Preservation (OPRHP) and fifteen Native American Tribes soliciting their concurrence for no effect to archaeological resources. The work was conducted in accordance with the *New York State Guidelines, State Environmental Quality Review Act* requirements, and the *Federal Communications Commission Nationwide Programmatic Agreement*. The OPRHP and Tribes subsequently concurred with all 18 no adverse effects recommendations.

Confidential Wind Energy Center Project, Steuben County, New York (Project Manager/Principal Investigator 2016 - 2019). Prepared research design and directed all aspects of archaeological background and field research associated with wind energy development project in central New York. Contributing author of report submitted to Confidential Client and New York State Historic Preservation Office. Prepared Exhibit 20 (Cultural Resources) for Article 10 New York State PSC environmental documentation.

Phase II Archaeological Evaluation of Sites 28HU566 and 28HU567 and Historic Architecture Studies of the Edward Fox House and Fox/Phillips/Pittenger House in the Frenchtown III Solar Park, Hunterdon County, New Jersey, (Project Manager/Principal Investigator 2013-14). Directed all aspects of archaeological research in support of solar park development. The work was conducted for Con Edison Development, Valhalla, NY under Subcontract to Whitman, Cranbury, New Jersey. Contributing author of technical report and public outreach program in preparation for the New Jersey Historic Preservation Office.

Dunkirk Natural Gas Pipeline Project, Phase I Archaeological Survey, Chautauqua County, New York (Project Manager/Principal Investigator 2014-2015). Directed all aspects of Phase I archaeological study for proposed 11 miles of new 16-inch buried pipeline to transport natural gas from the Tennessee Gas Transmission Pipeline to the Dunkirk Generating Station. Principal author of project report and Article VII documentation submitted to Dunkirk Gas Corporation and the NY SHPO.

Entergy Nuclear Indian Point 2, LLC and Entergy Nuclear Indian Point 3, LLC (Senior Archaeologist 2013-14). Conducted background research and prepared Cultural Resources section of Draft SEIS for State Pollutant Discharge Elimination System (SPDES) Permit (No. NY-0004472), as required by New York State Environmental Quality Review Act. Submitted to Entergy Services, Inc., Jackson, Mississippi.

PROJECT EXPERIENCE (continued)

Mantua Grove Solar Energy Project, Gloucester County, New Jersey, Phase I and II Archaeological Studies (Project Manager/Principal Investigator 2009-2010). Prepared research design and supervised all aspects of field and laboratory research in support of proposed photovoltaic solar array in southern New Jersey. Conducted Phase II National Register eligibility evaluations of two multicomponent sites (28GL417 and 28GL418). Principal author of project reports submitted to SunPower Corporation and the New Jersey State Museum.

Paradise Solar Energy Project, Gloucester County New Jersey; Phase I and II Archaeological Studies (Project Manager/Principal Investigator 2009-2010). Prepared research design and supervised all aspects of field and laboratory research in support of a proposed photovoltaic solar array in southern New Jersey. Conducted Phase II National Register eligibility evaluations of prehistoric site 28GL415. Principal author of project reports submitted to Paradise Solar, LLC (NextEra) and the New Jersey State Museum.

Caithness Long Island Energy Center II, Phase I Archaeological Survey, Town of Brookhaven, Suffolk County, New York (Project Manager/Principal Investigator 2013). Directed all aspects of Phase I archaeological study for proposed natural gas fired power facility in Town of Brookhaven. Principal author of project report and Environmental Impact Statement submitted to Caithness Long Island II, LLC and state and municipal review agencies.

NYSEG Corning Valley Upgrade Project, Towns of Erwin and Campbell, Steuben County, New York Phase I Archaeological Survey (Project Manager/Principal Investigator 2009-10). Prepared research design and oversaw all aspects of archival research, field and laboratory research in support of modernization of a 9-mile electrical transmission corridor and substations. Principal author of project report submitted to New York State Electric and Gas and the New York Office of Parks Recreation and Historic Preservation.

Eastern System Upgrade Project, Orange, Sullivan, Delaware, and Rockland Counties, New York, Phase I Archaeological Investigation (Project Manager/Principal Investigator 2015-16). Oversaw all aspects of archaeological background and field research associated with proposed 7.3-mile natural gas pipeline construction project in southern New York. Contributing author of the technical report to be submitted to FERC and Millennium Pipeline Company.

CPV Valley Energy Center and Transmission Corridors, Archaeological Studies, Town of Wawayanda, Orange County, New York (Project Manager/Principal Investigator 2008-2015). Prepared research design and oversaw all aspects of field and laboratory research in support a proposed gas-fired 630 MW power plant. Principal author of project report and Environmental Impact Statement submitted to CPV Valley, LLC and state and municipal review agencies.

Section 106 Oversight for USDA/Natural Resources Conservation Service, New York (Principal Investigator and Project Manager). Mr. Sara managed a year-long program for conducting Initial Project Reviews, Field Inspections, and Phase 1 surveys for all planned NRCS conservation projects throughout New York State. He directed a project team of historians, project archaeologists, and GIS specialists in executing Section 106 compliance review process on behalf of the NRCS and OPRHP (NY SHPO).

BEFORE THE
NEW YORK STATE
SITING BOARD ON ELECTRIC GENERATION SITING
AND THE ENVIRONMENT

Application of Danskammer Energy, LLC for a Certificate of Environmental Compatibility and Public Need Pursuant to Article 10 for Approval to Repower its Danskammer Generating Station Site Located in the Town of Newburgh, Orange County	)	Case No.: 18-F-0325

PRE-FILED TESTIMONY OF JAY SARKER, P.E.

ON BEHALF OF

DANSKAMMER ENERGY, LLC

Q. Please state your name, employer, position and business address.

A. My name is Jay Sarker. I am currently employed by TRC as a Senior Environmental Engineer. My business address is 1099 Wall Street West, Suite 250B, Lyndhurst, NJ.

Q. How long have you been employed with TRC?

A. I have been employed by TRC since August 2008.

Q. On whose behalf are you testifying?

A. I am testifying on behalf of Danskammer Energy, LLC ("Danskammer" or "the Applicant").

Q. Please describe your educational background and professional experience.

I have a Bachelor of Science degree in Environmental Studies from Cook College and a Master's degree in Environmental Engineering from Stevens Institute of Technology. My experience includes consulting services for the energy sector. I was licensed as a Professional Engineer in the State of New York in June of 2012. A copy of my resume is attached.

Q. Please describe your current responsibilities with TRC.

A. As a Senior Environmental Engineer, my responsibilities include preparation of Title V air quality permit applications, environmental impact statements and other environmental assessment documents. Since joining TRC, I have worked with New York State Department of Environmental Conservation, New Jersey Department of Environmental Protection, Federal Energy Regulatory Commission, and private developers within the energy sector on various projects, including the repowering project proposed by Danskammer (the "Project").

Q. Have you testified in other proceedings before the New York State Public Service Commission or Siting Board on Electric Generation?

A. No.

Q. Have you previously served as an expert witness before any other court, agency, or other body on the subject you plan to offer testimony on today?

A. No.

Q. What is the purpose and scope of your testimony in this proceeding?

A. In connection with Danskammer's Application pursuant to Public Service Law Article 10 for the Project, I have been responsible for reviewing portions of Exhibit 17 of the Article 10 Application, providing my New York Professional Engineering review and seal on the draft NYSDEC Part 201/231 air permit application for the Project, which were prepared by TRC, and prepared the preliminary Stormwater Pollution and Prevention Plan for the Project.

Q. What portion(s) of the Application is your testimony sponsoring?

A. I am a member of the Panels sponsoring Exhibits 17 and 23 of the Article 10 Application.

Q. Were these portion(s) of the Application mentioned in the paragraph above prepared by you or under your direction and supervision?

A. Yes.

Q. In your testimony, will you refer to, or otherwise rely upon, any studies, publications, data or documents produced by persons other than yourself/your company? If so, please cite these sources.

A. Yes. References to sources of information that have not been directly prepared by me or TRC are referenced in the above-referenced Exhibits, as applicable.

Q. Does this complete your testimony?

A. Yes.

Jay Sarker

Senior Environmental Engineer

CREDENTIALS

Education:

- M. Eng., Environmental Engineering, Stevens Institute of Technology, 2007
- B.S., Environmental Studies, Cook College, 2002

Jay Sarker is a senior environmental engineer with over 15 years of experience in air quality permitting, engineering and project management. His qualifications include extensive hands-on emission calculations, permit applications, and project management. Mr. Sarker has conducted air quality analyses for numerous electric power generating facilities, as well as for the natural gas distribution industry. He provides engineering services for a variety of industrial clients, including independent power/cogeneration development, natural gas pipeline development, and manufacturing.

During Mr. Sarker's career, his engineering support and technical experience has been applied to numerous energy infrastructure projects, from natural gas transmission to large baseload power generation Projects on regional and national scales.

EXPERIENCE

Professional Summary:

- Over 15 Years of experience in air quality permitting, engineering and project management

Areas of Expertise:

- Environmental Engineering
- Construction Permits and Operating Permit Applications
- Air Quality Calculations
- Emission Statements
- Engineering Support and Compliance
- Water resources

PROJECT EXPERIENCE

Delta Air Lines, Inc., LaGuardia Airport East Side Reconfiguration (Project Engineer: 2019)

Mr. Sarker worked on an air quality permitting efforts for modifications to the LaGuardia airport in Queens, NY. He reviewed engineering calculations and signed and sealed the NYSDEC air permit application for the project.

Marcus Hook Energy Center – Marcus Hook, PA (Project Engineer: 2017 – Present)

Mr. Sarker prepared a combined Spill Prevention, Control, and Countermeasure (SPCC) and Spill Prevention Response Plan for the Marcus Hook Energy Center in May 2019. Mr. Sarker also prepared a National Pollutant Discharge Elimination System Renewal Application for the combined-cycle plant in August 2019.

85 Broad Propco LLC, 85 Broad Street – New York, NY (Project Engineer: 2017)

Mr. Sarker performed engineering calculations and prepared a NYSDEC air permit application for the installation of eight emergency generators at 85 Broad Street.

St. Francis Hospital – Hartford, CT (Project Engineer: 2017 – Present)

Mr. Sarker prepared an Excel workbook for St. Francis Hospital in order to track their emissions more efficiently. Mr. Sarker also assisted with filing the General Permit to Limit Potential to Emit to the Connecticut Department of Energy and Environmental Protection.

Eagle Point Power – West Deptford, NJ (Project Engineer: 2016 – 2018)

Mr. Sarker submitted annual emission statements to the NJ Department of Environmental Protection (NJDEP) on behalf of Eagle Point Power, a cogeneration facility located in West Deptford, NJ.

Tangent Energy, Kuehne Chemical Company – Kearny, NJ (Project Engineer: 2016 – 2017)

Mr. Sarker performed engineering calculations and prepared a NJDEP pre-construction permit for the facility to operate two new emergency generators.

Hoffmann-La Roche Inc. – Nutley, NJ (Project Engineer: 2015 – 2018)

Mr. Sarker performed engineering calculations and prepared air permit applications for soil vapor extraction systems to be installed at the facility.

PROJECT EXPERIENCE (continued)

Caithness Long Island II, LLC – Brookhaven, NY (Project Engineer: 2013 – Present)

Mr. Sarker developed an SPCC Plan for the Caithness Long Island II facility in Brookhaven, NY. The Plan was signed and sealed by Mr. Sarker in 2017.

BEFORE THE
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Application of Danskammer Energy, LLC for a Certificate of Environmental Compatibility and Public Need Pursuant to Article 10 for Approval to Repower its Danskammer Generating Station Site Located in the Town of Newburgh, Orange County	)	Case No.: 18-F-0325

PRE-FILED TESTIMONY OF KEVIN D. SULLIVAN, P.E

ON BEHALF OF

DANSKAMMER ENERGY, LLC

Q. Please state your name, employer, position and business address.

A. My name is Kevin D. Sullivan. I am currently employed by TRC as a Principal Engineer. My business address is 2801 Wehrle Drive, Williamsville, New York, 14221.

Q. How long have you been employed with TRC?

A. I have been employed by TRC since October 2014.

Q. On whose behalf are you testifying?

A. I am testifying on behalf of Danskammer Energy, LLC ("Danskammer" or "the Applicant").

Q. Please describe your educational background and professional experience.

I have a Bachelor of Science degree in Civil Engineering from the State University of New York at Buffalo. My experience includes environmental engineering, site investigation and remediation, regulatory compliance and spill prevention, construction management, and project management. I have worked as an environmental consultant since 1990. A copy of my resume is attached.

Q. Please describe your current responsibilities with TRC.

A. As a Principal Engineer, my responsibilities include business development, client consultation, site visits and inspections, work product preparation, technical and quality review, professional certification, and mentoring junior staff. I am a licensed Professional Engineer in New York as well as several other states through reciprocity (PA, MD, WV, NC, MI, SD, TN, MO, and KS). I have worked as an environmental consultant since 1990, and I have held my professional engineering license since 1996. Since joining TRC, I have worked on numerous projects with the New York State Department of Environmental Conservation in addition to the environmental departments in Pennsylvania, Virginia, and

West Virginia. In addition, I have approximately 15 years of working experience for United States Department of Energy. Other projects include long-haul and short-line railroads, manufacturing facilities, and power plant facilities, and more specifically, the repowering project proposed by Danskammer (the "Project").

Q. Have you testified in other proceedings before the New York State Public Service Commission or Siting Board on Electric Generation?

A. No.

Q. Have you previously served as an expert witness before any other court, agency, or other body on the subject you plan to offer testimony on today?

A. No.

Q. What is the purpose and scope of your testimony in this proceeding?

A. As a Project Engineer for TRC, one of Danskammer's consultants for the Project, I have been responsible for the preparation and review of portions of the Article 10 Application for the Project, including: the preliminary Spill Prevention, Control, and Countermeasure (SPCC) Plan for the Project; Exhibit 38 – Water Interconnection; Exhibit 39 – Wastewater Interconnection; and a draft State Pollutant Discharge Elimination System (SPDES) Industrial Discharge Permit modification application for the Project.

Q. What portion(s) of the Application is your testimony sponsoring?

A. I am a member the Panels sponsoring the following Exhibits of Danskammer's Article 10 Application: Exhibits 23 (draft SPDES modification application), 38, and 39.

Q. Were these portion(s) of the Application mentioned in the paragraph above prepared by you or under your direction and supervision?

A. Yes.

Q. In your testimony, will you refer to, or otherwise rely upon, any studies, publications, data or documents produced by persons other than yourself/your company? If so, please cite these sources.

A. Yes. References to sources of information that have not been directly prepared by me or TRC are referenced in the above-referenced Exhibits, as applicable.

Q. Does this complete your testimony?

A. Yes.

Kevin D. Sullivan, P.E.

Principal Engineer

CREDENTIALS

Education:

- B.S., Civil Engineering, SUNY at Buffalo, Buffalo, NY (1990)

Professional Registrations/Certifications/ Training:

- Licensed Professional Engineer:
  - New York
  - Kansas
  - Maryland
  - Michigan
  - Missouri
  - Pennsylvania
  - South Dakota
  - West Virginia
  - TN, NC – Inactive

Kevin Sullivan has over 29 years of experience and progressive responsibility in the environmental consulting field.

EXPERIENCE

Professional Summary:

Mr. Sullivan has over 29 years of experience in environmental engineering including regulatory compliance and spill prevention, design, remediation, construction management, and project management.

Areas of Expertise:

Mr. Sullivan serves as a Principal Engineer for TRC's Remediation Practice located in Buffalo, New York. Mr. Sullivan has extensive management and technical experience in the following areas:

- Regulatory Compliance inspections and plan preparation including Spill Prevention, Control, and Countermeasures (SPCC) Plans and Stormwater Pollution Prevention Plans (SWPPP)/Preparedness, Prevention and Contingency (PPC) Plans, Best Management Practices (BMP) Plans, Spill Prevention Response (SPR) Plan
- Industrial Stormwater Permitting including Individual and Multi-Sector General Permits in NY, NJ, PA, WV, VA, MD
- Remedial Investigation, Remedial Design, and Interim Remedial Measures
- Construction Management, Contract Administration, Site Inspection
- Remedial Systems Monitoring, Operation, and Maintenance
- Vapor Intrusion/Indoor Air Investigation and Remediation

PROJECT EXPERIENCE

Norfolk Southern Railway Company, Regulatory Compliance – Various Cities in NY, NJ, MD, PA, VA, WV (Principal Engineer: 2016 – Current)

Mr. Sullivan is responsible for coordinating and conducting site inspections for nearly 30 facilities throughout NY, NJ, MD, PA, VA, and WV (Northeast Region) for the purposes of determining existing regulatory compliance and preparing necessary plans and permits ensuring future compliance. Site visits involved review of facility, existing plans, and documentation of plan implementation. Plan preparation involved SPCC Plans, SWPPPs, PPC Plans, SPR Plans, and FRPs, as well as technical review. Permitting involved (new and renewal) Individual Stormwater Permit applications (including Module I), Industrial Waste Facilities Permit applications, and MSGP applications/NOIs, public notification, and advertisement requirements.

Genesee & Wyoming Railroad, Northeast Region, Regulatory Compliance – Various cities in NY, PA, and MO (Principal Engineer: 2015 – Current)

Mr. Sullivan was responsible for development of a multi-state stormwater compliance guidebook, which summarized relevant contact information, state general permit (or NPDES permit) information, SWPPP requirements, inspection requirements, monitoring and sampling requirements, and reporting requirements for each of 38 independently authorized states and 3 United States Environmental Protection Agency-regulated states. Follow-up work for this client has involved preparation of PPC Plans/SWPPPs, SPCC Plans, and Environmental Emergency Response Plans for 12 facilities located in NY and PA, preparation of Notices of Intent for industrial stormwater permits in NY and PA, and coordinating stormwater monitoring at 4 facilities in NY. Permit preparation included new discharge individual permit applications in PA involving Module I preparation for discharge to High Quality designation streams.

Brookfield Resource Management, SPCC Plan Preparation for Automotive and Cardboard Recycling Facility – Elmsford, NY (2014-2015)

Mr. Sullivan was responsible for preparation of an SPCC plan for automobile, truck, and paper recycling facilities located in Westchester County, New York. Responsibilities included inspection of the facilities, preparation of SPCC Plan documents, and defining requirements for facility modifications ensuring compliance.

2801 Wehrle Drive, Williamsville, New York, USA, 14221
Tel: 716.221.0774 Email: KSullivan@TRCCompanies.com

PROJECT EXPERIENCE (continued)

Honeywell Building Solutions, Central Utility Plant, Federal Research Center, Integrated Contingency Plan Preparation – White Oak, Silver Spring, MD (2015-2016)

Mr. Sullivan was responsible for project management and development of an integrated contingency plan (ICP) for the Central Utility Plant (natural gas-fired power, chilled water, and steam plant). The ICP combined RCRA, OSHA, SPCC, SWPPP, and other regulatory requirements applicable to the plant into a single document. The ICP was prepared in accordance with the National Response Team's Integrated Contingency Plan Guidance.

US Department of Energy, West Valley Demonstration Project (WVDP), Environmental Impact Statement and RCRA Compliance Support – West Valley, NY (2001 – 2010, 2017 – Present)

Mr. Sullivan was responsible for numerous projects at the WVDP including:

- Resident engineering for a landfill cap and perimeter soil/bentonite barrier wall for an inactive radioactive waste disposal facility (NRC-Licensed Disposal Area) at the WVDP. Responsibilities included drawing and specification interpretation, management of change, implementation/oversight of the CQA and SWPPP programs, and preparation and certification of the final engineering report for the project.
- Preparation of Technical Reports and Decommissioning Plan in support of the Site-wide Final Environmental Impact Statement (FEIS), West Valley Demonstration Project, West Valley, NY (Department of Energy): Responsibilities included providing direction and review of conceptual remedial plans, preparation and review of conceptual design plans and calculations, and presentation of conceptual designs.
- Preparation of Conceptual Engineering Design Reports for a Supplemental Environmental Impact Statement related to the Phase 2 decisionmaking (Phased-Decisionmaking Alternative was selected in the FEIS).
- RCRA Program Support, West Valley Demonstration Project, West Valley, NY (Dept. of Energy): Responsibilities included supporting the preparation of six Corrective Measures Study reports to address six solid waste management units associated with solid and mixed waste disposal units, wastewater treatment, and a groundwater collection unit.

New York City School Construction Authority, Project Design/Engineering – New York, NY (2014 – Present)

Mr. Sullivan was responsible for design review and engineering certification supporting several construction projects, which included:

- Lafayette High School add. – foundation dewatering design, drawdown and discharge calculations, discharge permitting, Brooklyn, NY
- PS 125Q – sub-slab and foundation gas vapor barrier design, Queens, NY
- PS 335Q construction – foundation dewatering design, Queens, NY
- Curtis High School Addition & Renovation – sub-slab gas vapor barrier design, Staten Island, NY
- Harlem Children's Zone Promise Academy Alterations – sub-slab vapor barrier design, Manhattan, New York, NY

US Department of Energy, Stanford Linear Accelerator Center, National Accelerator Laboratory, Project Management and Design – Menlo Park, CA (2012-2014)

Mr. Sullivan was responsible for design and construction (resident engineer) of two Dual-Phase Groundwater and Soil Vapor Extraction Systems at this Department of Energy facility. Responsibilities included preparation of design documents at Preliminary, Pre-Final, and Final Design Stages including design calculations, technical specifications, design drawings, permitting, and Remedial Design Report. The larger of the two systems consisted of 33 DPE wells (groundwater and soil vapor), three skid-mounted soil vapor extraction blower systems, and an air stripper groundwater treatment skid unit.

Chemtura Corporation, Remedial Investigation – Brooklyn, NY (2012 – 2014)

Mr. Sullivan was responsible for management of an RI for this NYSDEC Class 2 inactive hazardous waste site. Responsibilities included preparation and implementation of an RI Work Plan, permit applications (including New York City Dept. of Parks and Rec., and Dept. of Forestry), permit compliance, surrounding property owner access agreements, coordination with NYC Park users (including children's summer camp programs) for collection of soil samples from the park property, and preparation of a Final RI Report. RI program involved collection and analysis of over 650 soil samples for horizontal and vertical PCB delineation, and over 150 soil samples for TCL/TAL delineation. Environmental media consisted of soil, groundwater, soil vapor, and indoor air. Contaminants included volatile organic compounds, semi-volatile organic compounds, metals, and polychlorinated biphenyls in soil and light non-aqueous phase liquid.

BEFORE THE
NEW YORK STATE
SITING BOARD ON ELECTRIC GENERATION SITING
AND THE ENVIRONMENT

Application of Danskammer Energy, LLC for a Certificate of Environmental Compatibility and Public Need Pursuant to Article 10 for Approval to Repower its Danskammer Generating Station Site Located in the Town of Newburgh, Orange County	)	Case No.: 18-F-0325

PRE-FILED TESTIMONY OF WILLIAM H. TAYLOR

ON BEHALF OF

DANSKAMMER ENERGY, LLC

Q. Please state your name, position and business address.

A. My name is William H. Taylor. I currently serve as the Chief Operating Officer of Danskammer Energy, LLC. The business address is 954 River Road, Newburgh, New York.

Q. How long have you held this position with Danskammer Energy, LLC?

A. I have served in this position since December of 2017.

Q. On whose behalf are you testifying?

A. I am testifying on behalf of Danskammer Energy, LLC ("Danskammer" or "the Applicant").

Q. Please describe your educational background and professional experience.

I have a Bachelor of Science degree in Mechanical Engineering from Texas Tech University; a Master of Business Administration (MBA) degree from East Texas State University; a Juris Doctorate (JD) degree from the University of Tulsa, College of Law; and a Master of Laws (LLM) degree with a focus in Energy and Natural Resources from the University of Houston College of Law. My experience includes more than 30 years of energy and infrastructure development, finance, construction, operations and asset management, with specific experience in developing and managing gas-fired combined-cycle projects, as well as larger portfolios including nuclear, coal, gas, solar, and wind projects. I have been responsible for the development and asset management for portfolios totaling approximately 13,000 megawatts of capacity as the Senior Vice President of Asset Management and Development for a large U.S. independent power producer. In addition, I have worked in various other executive roles leading

development for other independent power producers with a focus on both natural gas and renewable projects, including wind and solar. A copy of my bio is attached.

Q. Please describe your current responsibilities with Danskammer.

A. As Chief Operating Officer for Danskammer, my responsibilities include oversight of Danskammer's existing generating facility's operations and asset management teams, who are responsible for day-to-day operations and maintenance of the existing generating facility and offering it into the New York Independent System Operator (NYISO) market. Additionally, I am responsible for directing the development efforts related to the repowering of the existing generating facility (the "Project") in coordination with the Danskammer team and third-party engineering and consulting firms. In addition to my role as Chief Operating Officer, I also act as a commercial and strategy lead for the Project's development efforts, focused on repowering alternatives, alternative review, equipment selection, execution team selection and contracting strategies, and overall project execution planning and coordination. Since joining Danskammer, along with the rest of the Danskammer team, I have worked or met with various local groups, governmental agencies, members of the community, business leaders, environmental groups, local labor groups, and local service providers for geotechnical, engineering, planning, transportation, testing, O&M services, equipment, etc.

Q. Have you testified in other proceedings before the New York State Public Service Commission or Siting Board on Electric Generation?

A. No.

Q. Have you previously served as an expert witness before any other court, agency, or other body on the subject you plan to offer testimony on today?

A. No.

Q. What is the purpose and scope of your testimony in this proceeding?

A. As the Chief Operating Officer for Danskammer and the lead for commercial and strategy planning, I am responsible for considering the various options for improving and optimizing the existing generating facility, considering various alternatives that should be evaluated for future site usage and coordinating with the Danskammer team and engineering and construction firms to evaluate the identified alternatives for the Project. Additionally, with more than 30 years of power and infrastructure experience, I am additionally leading the coordination activities for selection of equipment, engineers, and constructors for execution of the Project.

Q. What portion(s) of the Application is your testimony sponsoring?

A. I am a member of the Panels sponsoring the following Exhibits of Danskammer's Article 10 Application: Exhibit 9 – Alternatives and Exhibit 14 – Cost of Facilities.

Q. Were these portion(s) of the Application mentioned in the paragraph above prepared by you or under your direction and supervision?

A. Yes.

Q. In your testimony, will you refer to, or otherwise rely upon, any studies, publications, data or documents produced by persons other than yourself/your company? If so, please cite these sources.

A. Yes. References to sources of information that have not been directly prepared by me or Danskammer's team of service providers have been set forth in the above-referenced Exhibits, as applicable.

Q. Does this complete your testimony?

A. Yes.

Howard Taylor
Operations Management, Redevelopment and Expansion, Hedging/Commercial Strategy

- 30 years of development, project and asset management experience in conventional power, solar, wind, water, wastewater and natural gas infrastructure
- Prior CEO of Envia Energy, a landfill gas to liquids facility company
- Prior SVP of Asset Management and Development for the Gulf Region of NRG, responsible for more than 12,500 MW of nuclear, wind, coal and gas fired generation assets
- Held executive or managerial positions at Calpine, LS Power, General Electric and Tessera Solar, directing the development of more than 12,000 MWs of power generation facilities
- BS degree in Mechanical Engineering from Texas Tech University, and MBA, JD and LLM degrees, with an emphasis in energy and natural resources

BEFORE THE
NEW YORK STATE
SITING BOARD ON ELECTRIC GENERATION SITING
AND THE ENVIRONMENT

Application of Danskammer Energy, LLC for a Certificate of Environmental Compatibility and Public Need Pursuant to Article 10 for Approval to Repower its Danskammer Generating Station Site Located in the Town of Newburgh, Orange County	)	Case No.: 18-F-0325

PRE-FILED TESTIMONY OF JAMES TENGWALL

ON BEHALF OF

DANSKAMMER ENERGY, LLC

Q. Please state your name, employer, position and business address.

A. My name is James Tengwall. I am currently employed by POWER Engineers, Inc. (POWER) as a Senior Engineer. My business address is 800 Kinderkamack Road, Oradell, New Jersey, 07649.

Q. How long have you been employed with POWER?

A. I have been employed at POWER since 2014, when it acquired Burns and Roe Enterprises, Inc. I was employed at Burns and Roe since September 1988.

Q. On whose behalf are you testifying?

A. I am testifying on behalf of Danskammer Energy, LLC ("Danskammer" or "the Applicant").

Q. Please describe your educational background and professional experience.

I have a Bachelor of Science degree from the New Jersey Institute of Technology in Mechanical Engineering. My experience includes mechanical engineering and design for new and renovated industrial facilities. My primary area of experience has been in thermal power systems design, including the preparation of feasibility studies, piping layouts, system flow diagrams, specifications, and performing field construction oversight. A copy of my resume detailing my professional experience is attached.

Q. Please describe your current responsibilities with POWER.

A. As a Senior Engineer, my responsibilities include engineering design for combined-cycle power plants, central boiler and chiller plants, performance evaluations, piping system design and layout, and equipment and installation specifications. Responsibilities also include field support during construction, review and approval of shop drawings, testing and balancing of completed mechanical systems, and the final inspection of the project

prior to turnover to the client. I am also responsible for development of detailed system operating descriptions and procedures. I am certified by the States of New York, New Jersey, Alabama, Massachusetts, and Connecticut as a Professional Engineer (PE). Since joining POWER, I have worked with owners and developers of major power and industrial facilities.

Q. Have you testified in other proceedings before the New York State Public Service Commission or Siting Board on Electric Generation?

A. No.

Q. Have you previously served as an expert witness before any other court, agency, or other body on the subject you plan to offer testimony on today?

A. No.

Q. What is the purpose and scope of your testimony in this proceeding?

A. As the Lead Mechanical Engineer, I am responsible for development of the Project Mechanical Arrangement Drawings and providing input to the natural gas sections of the Article 10 Application.

Q. What portion(s) of the Application is your testimony sponsoring?

A. I am a member of the Panels sponsoring the following Exhibits of Danskammer's Article 10 Application: Exhibits 7, 11, and 36.

Q. Were these portion(s) of the Application mentioned in the paragraph above prepared by you or under your direction and supervision?

A. Yes.

Q. In your testimony, will you refer to, or otherwise rely upon, any studies, publications, data or documents produced by persons other than yourself/your company? If so, please cite these sources.

A. References are provided in the above-referenced Exhibits.

Q. Does this complete your testimony?

A. Yes.

JAMES R. TENGWALL, P.E.

LEAD MECHANICAL ENGINEER

YEARS OF EXPERIENCE

37

EDUCATION

- B.S., Mechanical Engineering, New Jersey Institute of Technology, Newark, New Jersey, 1981

AREAS OF EXPERTISE

- Engineering Design and Feasibility Studies
- Piping layouts and system flow diagrams
- Field Construction and Oversight

LICENSING

- P.E., Mechanical: New York
- P.E., Mechanical: Alabama
- P.E., Mechanical: New Jersey
- P.E., Mechanical: Massachusetts
- P.E., Mechanical: Connecticut

SPECIAL TRAINING

- OSHA Training

AFFILIATIONS

- American Society of Mechanical Engineers
- American Society of Heating, Refrigerating and Air Conditioning Engineers

EXPERIENCE SUMMARY

Mr. Tengwall has many years of experience as a Mechanical Engineer in the power and central utilities industries including engineering design for combined cycle power plants, central boiler plants and mechanical systems, performance evaluations, piping system design and layout, and equipment specifications and installations. He has extensive experience in field support during construction, review and approval of shop drawings, testing and balancing of completed mechanical systems, and the final inspection of the project prior to turnover to the client. He has conducted system designs for feasibility studies and construction projects, and modifications to existing facilities. Mr. Tengwall was responsible for development of detailed system operating descriptions and procedures for projects including an incineration process plant and several nuclear and fossil fuel power plants.

Gemma Power Systems, 805 MW Combined Cycle Power Plant, Towantic Energy Center, Oxford, Connecticut

Lead Mechanical Engineer on this project. POWER provided detailed engineering and design services for the CPV Towantic Energy Center located in Oxford, Connecticut. The plant is a 785 MW combined cycle electric generating station based on a 2x1 plant configuration and featuring GE 7HA.01 combustion turbine and steam turbine technology. The facility includes an air-cooled condenser and dual-fuel operational capabilities.

First Reserve, Lackawanna Energy Center Owner's Engineer, Jessup, Pennsylvania

Responsible as an owner’s site mechanical engineering representative during construction to observe and report on installation progress, ensure compliance with project specifications and drawings, report non-conformances, resolve design changes, witness construction and startup testing, provide input to a contract closeout punch list and review system/contract turnover documentation. Areas of focus were pipe installation also including erection of HRSGs, Combustion and Steam Turbines and Air Cooled Condensers. Lackawanna Energy Center is a three unit, 1x1 single shaft combined cycle project composed of three GE 7HA.02 Combustion Turbine-Generators, three CMI HRSGs, and three Steam Turbines with Air Cooled Condensers.

South Houston Green Power LLC, 650 MW Combined Heat and Power, Texas City, Texas

Mechanical Engineer responsible for coordinating plant piping design and production of piping drawings for this 630 MW combined cycle cogeneration plant. POWER was responsible for the detailed engineering and design for this 650 MW combined cycle cogeneration plant that consisted of three GE PG-7241 FA natural gas-fired combustion turbines, three heat recovery steam generators

and a non-condensing steam turbine generator.

Dorad Energy Ltd., 800 MW Combined Cycle Power Plant, Asheklon, Israel

Responsible as an Owner's Site Engineering Representative to observe and report on construction progress, report construction non-conformances, resolve design changes, witness construction and startup testing, and develop a contract closeout punch list. The project included 12 GE LM6000 combustion turbines and two steam turbines arranged in two 6 x 1 combined cycle blocks. As owner's engineer, POWER provided engineering and design review services to Dorad as well as field construction management oversight and startup/commissioning support services.

Dormitory Authority of the State of New York, TDDSO Boiler and Chiller Plants Upgrade, Wassaic, New York

Lead Mechanical Engineer responsible for design, bid and construction support services for this $5 million low pressure boiler and chiller plant that included demolition, temporary and new boiler plant and new supporting utility services. POWER performed engineering, design, and construction support services to construct a new, low-pressure steam boiler plant and new electric driven chillers. The scope included the installation of new, more cost-effective, high efficiency boilers and electric driven chillers.

Albert Einstein College of Medicine, Replacement of Boilers 1 and 2, Bronx, New York

Lead Mechanical Engineer responsible for providing design, bid, commissioning and construction support services for a new high pressure boiler plant including demolition, temporary boiler plant, new boiler plant and new supporting utility services. The scope of work included the design for replacement of two 25,000 lb/hr 150 psig field erected steam boilers with two 82,000 lb/hr 150 psig shop fabricate D-type package boilers within the existing boiler building. Extensive demolition within the existing facility was required to support installation of the new boiler and ancillary equipment.

DG Energy Solutions, King's Plaza Shopping Mall Cogeneration, Brooklyn, New York

Lead Mechanical Engineer responsible for system and equipment sizing, equipment and installation specifications, equipment arrangements, piping layouts and system flow diagrams. POWER worked in multiple phases on the King’s Plaza shopping mall energy renovation project. Our pre-phase work involved fire protection upgrades and new standby backup emergency generators. Phase I involved the staged removal and replacement of reciprocating engines (four new 2.8 MW units with HRSGs). Phase II was the removal and replacement of four chillers. POWER provided engineering and design services to prepare contract drawings and specifications.

Calpine Corporation, 700 MW Decatur Combined Cycle Cogen Energy Center, Decatur, Alabama

Principal Mechanical Engineer responsible for the design of steam, boiler feedwater, condensate, cooling water and fuel plant systems for this 720 MW combined cycle cogeneration plant. POWER's scope of work for this contract

consisted of detailed engineering, design and field engineering support services. This 700 MW combined cycle cogeneration power plant project included three Westinghouse 501F combustion turbines and one steam turbine. The plant is capable of producing a maximum of 1.2 million pounds of steam per hour.

Vicon Recovery Systems, Inc., Butler, New Jersey

As a Project Engineer, Mr. Tengwall was responsible for office and field technical support for incinerator, waste heat boiler and pollution control equipment contracts, coordinating physical interfaces between major equipment and balance of plant systems, and purchasing material and construction services to complete interfaces. He developed incinerator process designs for new plants and evaluated operating plant performance to improve plant constructability and operating limits.

Albert Einstein College of Medicine, High Pressure Steam Distribution System Expansion, Bronx, New York

Project scope includes design of a 12” 150 psig steam line and a 6” pumped condensate line through the basements of four buildings, a parking garage and underground. Total pipe length was 2,400 feet with 1,000 feet being direct buried double wall preinsulated piping. Responsible as lead mechanical engineer for equipment and installation specifications, equipment arrangements, piping layouts and system flow diagrams.

Dormitory Authority of the State of New York, Queensborough Community College, Boiler Plant Rehabilitation, Queens, New York

Lead Mechanical Engineer responsible for equipment and installation specifications, equipment arrangements, piping layouts and system flow diagrams. This included design of plant modifications for the replacement of three 25 million Btu/hr high temperature hot water boilers and auxiliary equipment.

APPENDIX 1-2

ACRONYM LIST

Acronyms and Abbreviations

Acronym	Definition
1H:1V	1 Horizontal: 1 Vertical
$\mu g/m^3$	micrograms per cubic meter
A	Maximum area of pool
A or AA	Waterbodies with the highest water quality that can be best used as a source for drinking water, swimming and other recreational activities, and fishing
AACE	Association for the Advancement of Cost Engineering
AADT	Average Annual Daily Traffic
AASHTO	American Association of State Highway and Transportation Officials
ABMA	American Boiler Manufacturer's Association
ACC	Air-cooled condenser
ACHP	Advisory Council on Historic Preservation
ACI	American Concrete Institute
ACS	American Community Survey
ACSR	Aluminum conductor steel-reinforced
ACT	Administration/Control Building
ADA	Americans with Disabilities Act
AdB	Allard silt loam, 3 to 8 percent slopes
AED	Automated External Defibrillator
AEIC	Association of Edison Illuminating Companies
AFBMA	Anti Friction Bearing Manufacturers Association
AFS	? (EX 28)
AGA	American Gas Association
AGC	Annual Guideline Concentrations
AGL	Above ground level
AGMA	American Gear Manufacturers Association
AGT	Algonquin Gas Transmission
AI	Asphalt Institute
AIRS	Aerometric Information Retrieval System
AISC	American Institute for Steel Construction
AISI	American Iron and Steel Institute
AKN	Avian Knowledge Network
ALOHA	Areal Locations of Hazardous Atmospheres

AM	Amplitude Modulation
AMCA	Air Moving and Conditioning Association
ANS	A Noise Sensitive
ANSI	American National Standards Institute
AOC	Areas of Concern
AOI	Areas of Influence
APA	Adirondack Park Agency
APD	?
APE	Area of Potential Effect
API	American Petroleum Institute
APO	Agency Historic Preservation Officer
APP	Application for construction permit
AQCR	Air Quality Control Region
ARP	Acid Rain Program
ASA	Acoustical Society of America
ASCE	American Society of Civil Engineers
Aset	Acceleration limiter setpoint
ASHRAE	American Society of Heating, Refrigeration and Air Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASML	above mean sea level
ASOS	Automated Surface Observing System
AST	Aboveground Storage Tank
ASTM	American Society for Testing and Materials
ATC	? ex. 4
ATSDR	Agency for Toxic Substances and Disease Registry
AWS	American Welding Society
AWS	Advanced wireless service
AWWA	American Water Works Association
B	A class of waters best used for primary and secondary contact recreation and fishing
BACT	Best Available Control Technology
BAE	Baseline Actual Emissions
BBA	Breeding Bird Atlas
BBC	Birds of Conservation Concern

BBN	Bolt, Beranek, and Newman, Inc.
BBS	Breeding Bird Survey
BCP	Brownfield Cleanup Program
BCR	Bird Conservation Regions
BEC	Bayonne Energy Center
BLM	Bureau of Land Management
BLS	Bureau of Labor Statistics
BMP	Best Management Practices
BOP	Balance of Plant
BPIPPRM	Building Profile Input Program with PRIME
BPS	Bulk Power System
BSER	best system of emission reduction
BTA	Basic Trading Areas
btu	British Thermal Units
Btu/kKW-hr	British Thermal Units per kilowatt hour
C	A class of waters are best used for fishing and non-contact related activities
C&SU	Comissioning and Start-up
CA	Class A analog television broadcast station
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CADD	Computer Aided Design and Drafting
CAFEP	Corona and Field Effects Program
CAMS	Consolidated Asset Management Services
CAP	Corrective Action Plan
CARB	California Air Resources Board
CARIS	Congestion Assessment and Resource Integration Study
CAS	Chemical Abstracts Service
CBA	Community Benefit Agreement
CBC	Christmas Bird Count
CBR	California bearing ratio
CBS	Chemical Bulk Storage
CCGT	combined-cycle gas turbine
CCS	carbon capture and sequestration

CCT	Critical Clearing Time
CH_4	methane
CHCO	? Ex. 4
CHGE	Central Hudson Gas & Electric
CEHA	Coastal Erosion Hazard Areas
CEMS	continuous emissions monitoring system
CERCLIS	Comprehensive Environmental Response, Compensation and Liability Information System
CFR	Code of Federal Regulations
CIP	Critical Infrastructure Protection
CLCPA	Climate Leadership and Community Protection Act
CLSM	controlled low-strength material
cm	centimeter
CMA	Cellular Market Areas
CMP	Coastal Management Program
CND	?
CNR	Composite Noise Rating
CNS	central nervous system
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	Carbon dioxide equivalent
CoB	Collamer silt loam, 3 to 8 percent slopes
CoC	Collamer silt loam, 8 to 15 percent slopes
COC	Contaminant of Concern
CoD	Collamer silt loam, 15 to 25 percent slopes
COD	commercial operation date
CORS	continuously operating reference stations
CP	Construction Permit granted
CPESC	Certified Professional in Erosion and Sediment Control
CPI	?
CP MOD	Modification of construction permit
Cp_v	stream channel protection volume
CPR	Cardiopulmonary Resuscitation
CRIS	Cultural Resources Information System

CRP	Comprehensive Reliability Plan
CRRA	Community Risk and Resiliency Act
CRSI	Concrete Reinforcing Steel Institute
CSAPR	Cross-State Air Pollution Rule
CSD	Central School District
CSGA	Cellular Geographic Service Areas
CT	combustion turbine
CTG	combustion turbine generator
CTO	Connecting Transmission Owner
CWA	Clean Water Act and Amendment
D	A class of water of the poorest quality standard; waters can be used for fishing but will not support fish propagation
DAR	Division of Air Resources
db	Speed governor deadband
dBA	A-weighted decibels
dBC	C-weighted decibels
DBH	diameter at breast height
DC	Class A digital television broadcast station
DEC	Danskammer Energy Center
DEM	digital elevation model
DEP	Division of Environmental Permits
DER	Division of Environmental Remediation
DF	Density Factor
DHSES	Division of Homeland Security & Emergency Services
DIA	Dedicated Internet Access
Dm	Mechanical damping coefficient
DMM	Document and Matter Management
DoD	Department of Defense
DOW	Division of Water
DP	Design Point
DS	Digital special temporary authority
DT	Digital television broadcast station
dS/m	deciSiemens per meter
DX	Digital auxiliary (backup) facility

E911	Enhanced 911
E&SC	Erosion and sediment control
EA	Economic Areas
EAF	Environmental Assessment Form
ECL	Environmental Conservation Law
ECMP	environmental compliance and monitoring program
EDG	? (ex. 11)
EDI	electro-deionization
EDR	Environmental Data Resources
EFORd	equivalent forced outage rate
EGUs	electric generating units
EHS	Environmental Health and Safety
EHS	Extra High Strength
EIA	Energy Information Administration
EIS	Environmental Impact Statement
EJ	Environmental Justice
EJAIA	Environmental Justice air impact area
EJMA	Expansion Joint Manufacturing Association
EMF	Electric and Magnetic Fields
EMS	Emergency Medical Services
END	Endangered
eNOI	Electronic version of NOI
EPA or USEPA	Environmental Protection Agency
EPC	Engineer, Procure, Construct
EPM	Environmental Procedures Manual
ERAP	Emergency Response Action Plan
ERC	emissions reduction credits
ERM	Environmental Resource Mapper
ERP	Effective Radiated Power
ERPG	Emergency Response Planning Guidelines
ESA	Endangered Species Act
F	Fahrenheit
FAA	Federal Aviation Administration
FAC	Farmington silt loam, sloping

FAC	Facultative
FACU	Facultative Upland
FACW	Facultative Wetland
FB	FM booster station
FCC	Federal Communications Commission
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FGDC	Federal Geographic Data Committee
FHA	Federal Housing Administration
FHWA	Federal Highway Administration
FIA	Fiber Internet Access
FIRM	Flood Insurance Rate Map
FL	Low-power FM station
FLM	Federal Land Managers
FOIL	Freedom of Information Law
FM	Frequency modulation
FPP	Fire Prevention Plan
FRP	Facility Response Plan
FS	factor of safety
FS	FM auxiliary (backup station)
ft.	Foot or feet
FTE	Full-time equivalent
FX	FM translator station
g/hp-hr	?
g/VMT	
GA	General Arrangement
GE	General Electric
GEP	Good Engineering Practices
GHG	greenhouse gas
g/hp-hr	grams per horsepower-hour
GHz	gigahertz
GEO	geosynchronous
GIS	Geographic Information System
GM	Silty Gravel with Sand

GP	General Permit
GPS	Global Positioning System
GRP	Gross Region Product
GSU	Generator Step-up
GSUT	generator step up transformers
GTG	gas turbine generator
GUS	Ground uplink stations
GVW	?
GWh	Gigawatt-hour
HAPs	hazardous air pollutants
H_B	the height of adjacent or nearby structures
HCBA	?
HCM	Highway Capacity Manual
HDMFPP	Heavy Duty MultiFilament Polypropylene
HDPE	high-density polyethylene
HFNS	high frequency natural sounds
HFRR	high frequency reciprocating rig
H_{GEP}	GEP stack height
HH	Histic Humaquepts, ponded
HHV	Higher Heating Value
HI	Hydraulic Institute
HIFLD	Homeland Infrastructure Foundation-Level Data
HMI	Hoist Manufacturers Institute
HOD	Health Outcome Data
hp	horsepower
HRDD	? Ex. 4
HRNERR	Hudson River National Estuarine Research Reserve
HRSG	heat recovery steam generator
HSG	Hydrologic Soil Group
HTF	Heat Transfer Fluid
HTV	High temperature vulcanized
HUC	hydrologic unit code
HWM	Hazardous Waste Management
Hz	Hertz

JEDI	Job and Economic Development Impact
IAM	Impact Assessment and Meteorology
IARC	International Agency for Research on Cancer
IBC	International Building Code
ICAP	Installed Capacity
ICEA	Insulated Cable Engineers Association
ID	Induced draft
IDA	Industrial Development Agency
IEC	International Electrotechnical Commission
IEEE	Institute of Electrical and Electronics Engineers
IES	Illuminating Engineers Society
IGT	Iroquois Gas Transmission
IOC	Index of Customers
IRM	Installed Reserve Margin
ISA	Impact Study Area
ISA	International Society of Automation
ISCP	Invasive Species Control Plan
ISO	International Organization for Standardization
ISO-NE	Independent System Operator – New England
ISPCP	Invasive Species Prevention and Control Plan
k	Soil reaction
K	potassium
Ka	Acceleration limiter gain
Kdgov	Governor derivative gain
Kigov	Governor integral gain
Kiload	Load limiter integral gain for PI controller
Kimw	Power controller (reset) gain
Kpgov	Governor proportional gain
Kpload	Load limiter proportional gain for PI controller
ksf	kips-per-square-foot
Kturb	Turbine gain
kV	kilovolt
kWh	kilowatt-hour

L	the lesser dimension (height or projected width of the adjacent or nearby structures)
LA	load allocations
LAER	lowest achievable emission rate
lb. or lbs.	Pound or pounds
lbs. CO_2 /MW-hr	Pounds carbon dioxide per megawatt hour
LCR	Locational Capacity Requirement
LD	Low-power digital television broadcast station
Ldref	Load limiter reference value
L_{eq}	Long-term average level
LFA	Liquid Factor Ambient
LHV	Lower Hudson Valley
LIC	Licensed and operational station
LiDAR	Light Detection and Ranging
LLC	Licensed Limited Corporation
LLF	
LMI	low- to moderate-income
LMP	Location-based Market Prices
LMR	Land mobile radio
LNG	liquified natural gas
LOD	Limit of Disturbance
LORAN	Long-Range Navigation
LOS	Level of Service
LP	Low power analog television broadcast station
LPC	Lightning Protection Code
LQG	Large Quantity Generator
LRR	Land Resource Region
LSZs	Landscape Similarity Zones
LUST	Leaking Underground Storage Tank
LWC	Liquid water content
m	meter
maxerr	Maximum value for speed error signal
MBMA	Metal Buildings Manufacturers Association
MCD	? ex 20

MCF	Thousand cubic feet
MCNR	Modified Composite Noise Rating
MFPP	Multi-Filament Polypropylene
mG	milligauss
MGD	Million gallons per day
MHC	? Ex. 4
MHPS	Mitsubishi Hitachi Power Systems, Inc.
minerr	Minimum value for speed error signal
MIS	Minimum Interconnection Standard
ML	Sandy Silt with Gravel
MLRA	Major Land Resource Areas
MLRA Handbook	Land Resource Regions and Major Land Resource Areas of the United States, the Caribbean, and the Pacific Basin
MMBtu	Million British Thermal Units
MMBtu/hr	million British Thermal Units per hour
MMCF	Million cubic feet
mmhos/cm	millimhos per centimeter
MOS	margin of safety
MOSF	Major Oil Storage Facility
MOT	Maximum Operating Temperature
MOVES	Motor Vehicle Emission Simulator
MP	Millennium Pipeline
mph	miles per hour
MPR	Mahopac to Poughkeepsie-Roseton
MPT	Maintenance and Protection of Traffic
MRA	? (ex. 20 appendix)
MRL	Minimal Risk Level
ms	Millisecond(s)
MS4	Municipal Separate Stormwater Sewer Systems
mscfh	thousands of standard cubic feet per hour
MSL	Mean Sea Level
MSS	Manufacturers Standardization Society of the Valve and Fittings Industry
MTA	Metropolitan Transportation Authority
MTA	Major Trading Areas

MTTR	Mean Time to Restore
MVA	Megavolt-ampere
MW	megawatt
MWh or MW-hr	megawatt hours
N-0	Normal conditions
N-1	Contingency conditions
N_2O	nitrous oxide
NA	Not Applicable
NAAMM	National Association of Architectural Metal Manufacturers Metal Bar Grating Manual
NAAQS	National Ambient Air Quality Standards
NACE	National Association of Corrosion Engineers
NADC	National Association of Demolition Contractors
NAIMA	North American Insulation Manufacturers Association
NATA	National-Scale Air Toxics Assessment
NCED	National Conservation Easement Database
NCSS	National Cooperative Soil Survey
NEC	National Electric Code;
NEI	net emissions increase
NESC	National Electric Safety Code
NEMA	National Electrical Manufacturers Association
NERC	North American Electric Reliability Corporation
NESHAP	National Emission Standards for Hazardous Air Pollutants
NEXRAD	next-generation radar
NFA	Newburgh Free Academy
NFPA	National Fire Protection Association
NGPL	natural gas plant liquids
NH_3	ammonia
NHD	National Hydrography Dataset
NHP	Natural Heritage Program
NHPA	National Historic Preservation Act
NFIP	National Flood Insurance Program
NJDEP	New Jersey Department of Environmental Protection
NL	Not Listed

NL	Navigation Law
NLCD	National Land Cover Dataset
NLOS	Non-line-of-sight
NMFS	National Marine Fisheries Service
NNSR	Non-attainment New Source Review
NO_2	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NOT	Notice of Termination
NOx	nitrogen oxides
NPCC	Northeast Power Coordinating Council
NPDES	National Pollutant Discharge Elimination System
NPH	? Ex. 4
NPL	National Priority List
NPS	National Park Service
NR	Rock was not encountered
NRC	National Response Center
NRCS	Natural Resources Conservation Service
NREL	National Renewable Energy Lab
NRHP	National Registry of Historic Places
NRT	National Recreation Trails
NSPS	New Source Performance Standards
NSR	New Source Review
NTIA	National Telecommunications and Information Administration
NWI	National Wetlands Inventory
NWPL	National Wetland Plant List
NWS	National Weather Service
NYAAQS	New York Ambient Air Quality Standards
NYAC	New York Archaeological Council
NYC	New York City
NYCA	New York Control Area
NYCDEP	New York City Department of Environmental Protection
NYCRR	New York Codes, Rules and Regulations
NYCWRP	New York City Waterfront Revitalization Program

NYHPA	New York Historic Preservation Act
NYISO	New York Independent System Operator
NYNHP or NHP	New York Natural Heritage Program
NYS	New York State
NYSBC	New York State Building Code
NYSDEC	New York State Department of Environmental Conservation
NYSDMV	New York State Department of Motor Vehicles
NYSDOH	New York State Department of Health
NYSDOS	New York State Department of State
NYSDOT	New York State Department of Transportation
NYSDPS or DPS	New York State Department of Public Service
NYSEG	New York State Electric and Gas
NYSERDA	New York State Energy Research and Development Authority
NYS GPO or NYGISPO	New York State GIS Program Office
NYSORPS	New York State Office of Real Property Services
NYSPSC or PSC	New York State Public Service Commission
NYSRC	New York State Reliability Council
NYSTS	New York State Transmission System
O_3	ozone
O&M	Operations and Maintenance
OATT	Open Access Transmission Tariff
OBL	Obligate Wetland
OCA	Offsite Consequence Analysis
OCDD	1,2,3,4,6,7,8,9-octachlorodibenzodioxin and octachlorodibeno-p-dioxin
OCDOH	Orange County Department of Health
OCIDA	Orange County Industrial Development Agency
OCWA	Orange County Water Authority
OECD	Organization for Economic Co-operation and Development
OEM	Original Equipment Manufacturer
OHGW	
OHWM	ordinary high-water mark
OLM	?
OPRHP	Office of Parks, Recreation and Historic Preservation

OSHA	Occupational Safety and Health Act
OTA	Over-the-air
P	phosphorus
$P_2 0_5$	phosphate
PADD	Petroleum Administration for Defense Districts
PAH	Polycyclic Aromatic Hydrocarbons
PAR	Phase angle regulators
Pb	Lead
PBS	Petroleum Bulk Storage
PCBs	Polychlorinated Biphenyls
PCS	Personal communications service
PDF	Portable Document Format
PE	Professional Engineer
PEACE	Plant Engineering and Cost Estimation
PEI	Petroleum Equipment Institute
PEM	palustrine emergent wetlands
PEP	project emission potential
PFO	palustrine forested wetlands
PGA	peak ground acceleration
PFI	Pipe Fabrication Institute
Pg	Pits, gravel
PILOT	Payment in Lieu of Taxes
PIP	Public Involvement Program
PJM	Pennsylvania, Jersey, Maryland
PLLC	professional limited liability company
PLS	Power Line Systems
PLS	Pure Live Seed
PM	Particulate Matter
POI	Point of Interconnection
POL	Public Officers Law
POM	polycyclic organic matter
POP	Point of Presence
POTW	Publicly Owned Treatment Works
ppb	parts per billion

ppm	parts per million
PRI	Primary Rate Interface
PRP/RP	Potentially Responsible Party/Responsible Party
PSD	Prevention of Significant Deterioration
PSEG	Public Service Enterprise Group
psi	pounds per square inch
PSIA	Pounds per Square Inch Absolute
psig	pounds per square inch gauge
PSL	Public Service Law
PSS	Preliminary Scoping Statement
PTE	Potential to Emit
PTSF	Percent Time Spent Following
PUB	Palustrine/Unconsolidated Bottom
PUD	planned unit development
PV	Photovoltaic
PVC	polyvinyl chloride
PVMRM	Plume Volume Molar Ratio Method
pW	?
PWS	public water supply
QAQC	Quality Assurance and Quality Control
Q_f	extreme flood control
Q_f	skin resistance
Q_p	tip resistance
Q_p	overbank flood control
QR	Quantity released
QTY	Quantity
Q_{ult}	ultimate pile capacity
R	Permanent Droop
Ra	Raynham silt loam
RACT	Reasonably Achievable Control Technology
RAGs	Remedial Action Guidelines
Rclose	Maximum valve closing rate
RCRA	Resource Conservation and Recovery Act
Rdown	Maximum rate of load limit decrease

REA	Rural Electrification Administration
REAG	Regional Economic Area Groupings
REC	Renewable Energy Credit
REV	Reforming the Energy Vision
RGGI	Regional Greenhouse Gas Initiative
RHSV	Reheat Stop Valves
RIB	? ex. 14
RLOS	radio line-of-sight
RMA	Rubber Manufacturers Association
RMC	Rock outcrop-Farmington complex, hilly
RMD	Rock outcrop-Farmington complex, rolling
RMF	multifamily residence
RMP	Risk Management Program
RO	Reverse Osmosis
ROMNSC	?
Ropen	Maximum valve opening rate
ROW	right-of-way
RP	retention ponds
RPA	Register of Professional Archaeologists
RR	railroad
RRH	? Ex. 4
RRv	Runoff Reduction Volume
Rup	Maximum rate of load limit increase
RWE	Regional Water Engineer
SAM	Street and Address Maintenance
SARA	Superfund Amendments and Reauthorization Act
SASS	? (Ex. 24)
SAV	Submerged Aquatic Vegetation
SCADA	supervisory control and data acquisition
SCFWH	Significant Coastal Fish Wildlife Habitats
SCO	Soil Cleanup Objectives
SCR	selective catalytic reduction
SDI	Steel Deck Institute
SDS	Safety Data Sheets

SDU	System Deliverability Upgrade
SEMO	State Emergency Management Office
SENY	Southeast New York
SEP	State Energy Plan
SEPB	State Energy Planning Board
SEQR	State Environmental Quality Review
SEQRA	State Environmental Quality Review Act
SER	significant emission rates
SFC	? Ex. 11
SGCN	Species of Greatest Conservation Need
SGCN-HP	Species of Greatest Conservation Need – High Priority
SGCs	Short-term Guideline Concentrations
SHC	? Ex. 4
SHOD	? Ex. 4
SHPA	State Historic Preservation Act
SHPO	State Historic Preservation Office
SHWS	State Hazardous Waste Sites
SIA	significant impact area
SILs	Significant Impact Levels
SIP	State Implementation Plan
SJI	Steel Joist Institute
SLA	Service Level Agreement
SM	Silty Sand w/ Gravel
SMACNA	Sheet Metal and Air Conditioning Contractors National Association
SMDM	Stormwater Management Design Manual
SMPs	stormwater management practices
SMU	Solid Waste Management Unit
SND	Spill Notification Directory
SNEIT	significant net emission increase threshold
SO_2	sulfur dioxide
SP	Poorly Graded Sand with Gravel
SPARCS	Statewide Planning and Research Cooperative System
SPC	? Ex. 4
SPCC	Spill Prevention, Control and Countermeasure

SPCN	Species of Potential Conservation Need
SPDES	State Pollutant Discharge Elimination System
SPR	Spill Prevention Report
SPT	significant project threshold
SRHP	State Register of Historic Places
SRIS	System Reliability Impact Study
SRP	Safety Response Plan
SSA	Sole Source Aquifer
SSC	species of special concern
SSCOs	Supplemental Soil Cleanup Objectives
SSESC	Standards and Specifications for Erosion and Sediment Control
SSF	State Superfund Program
SSGCN	state species of greatest conservation need
SSPC	The Society for Protective Coatings
SSURGO	Soil Survey Geographic Database
STA	Special temporary authoirty
STARS	Spill Technology and Remediation Series
STB	Steam Turbine Building
STC	Sound Transmission Class
STG	Steam Turbine Generator
STI	Steel Tank Institute
SUF	System Upgrade Facilities
SVOC	Semi-volatile organic compound
SWF	Solid Waste Facility
SWMUs	Solid Waste Management Units
SWPPP	Stormwater Pollution Prevention Plan
T	waters that may support a trout population
Ta	Acceleration limiter time constant
Tact	Actuator time constant
TAGM	Technical and Administrative Guidance Memorandum
Tb	Turbine lag time constant
Tc	Turbine lead time constant
TCLF	? (Ex 20 appendix)
TCPU	transportation, communications, and public utilities

Tdgov	Governor derivative controller time constant
TEMA	Tubular Exchanger Manufacturers Association
Teng	Transport lag time constant for diesel engine
TEI Manual	Transmission Expansion and Interconnection Manual
TGP	Tennessee Gas Pipeline
THPO	Tribal Historic Preservation Office
THR	Threatened
Tfload	Load Limiter time constant
TMDL	Total Maximum Daily Loads
TPD	Tuxedo to Poughkeepsie-Danskammer
Tpelec	Electrical power transducer time constant
tpy	tons per year
Trate	Turbine rating
TS	waters that may support trout spawning events
Tsa	Temperature detection lead time constant
Tsb	Temperature detection lag time constant
TSD	Technical Support Document
TSD	treatment, storage, and disposal
TV	Analog television broadcast station
TWC	Time Warner Cable
TX	Translator station
UCAP	Unforced Capacity
UCAPmax	maximum Unforced Capacity
UH	Udorthents, smoothed
UL	Underwriter Laboratories Incorporated
ULC	Underwriters' Laboratories of Canada
ULS	Universal Licensing System
ULSD	Ultra-low sulfur diesel
UPA	Uniform Procedures Act
UPL	Upland
UPNY	Upstate New York
UPS	Uninterruptible Power Supply
Ur	Urban land
USACE	United States Army Corps of Engineers

USC	United States Code
USCS	Unified Soil Classification System
USDA	United States Department of Agriculture
USDHS	U.S. Department of Homeland Security
USDOI	United States Department of Interior
USDOT	United States Department of Transportation
USF	University of South Florida
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
USN	? Ex. 20
UST	Underground Storage Tank
VAR	Volt-ampere reactive
VCP	Voluntary Cleanup Program
VIA	Visual Impact Analysis
vmax	Maximum valve position limit
vmin	Minimum valve position limit
VMT	vehicle-miles traveled
VOC	Volatile organic compounds
VP	Viewpoint
VPH	Vehicles per hour
VRC	Visual Resource Category
VSA	Visual Study Area
W	Water
WAAS	Wide-Area Augmentation System
WBAN	Weather Bureau Army Navy
WBD	Watershed Boundary Dataset
WCS	Wireless communication service
Wfnl	No load fuel flow
WHO	World Health Organization
WI/PWL	Waterbody Inventory/Priority Waterbodies List
WIN	Water Index Number
WISP	Wireless internet service providers
WLAs	wasteload allocations

WMS	WAAS Master Stations
WOTUS	Waters of the United States
WQv	Water Quality Volume
WRAP	Western Regional Air Partnership
WTP	Water Treatment Building
WW 1	Waste Water Building #1
XLPE	cross-linked polyethylene

APPENDIX 1-3

CERTIFICATE OF FORMATION

State of Delaware

SECRETARY OF STATE
DIVISION OF CORPORATIONS
P.O. BOX 898
DOVER, DELAWARE 19903

131297703

9604982
JEB BROWN
3100 EDLOE STREET SUITE 220
HOUSTON TX 77027

11-13-2013

ATTN: JEB BROWN X

DESCRIPTION	AMOUNT
DANSKAMMER ENERGY, LLC	
5431782 0102Y Register L.L.C.	
Certification Fee	50.00
Formation Fee	70.00
Court Municipality Fee, Wilm.	20.00
Expedite Fee, 24 Hour	50.00
FILING TOTAL	190.00
TOTAL PAYMENTS	190.00
SERVICE REQUEST BALANCE	.00

Delaware

The First State

I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF FORMATION OF "DANSKAMMER ENERGY, LLC", FILED IN THIS OFFICE ON THE TWELFTH DAY OF NOVEMBER, A.D. 2013, AT 10:30 O'CLOCK A.M.

Jeffrey W. Bullock, Secretary of State

5431782 8100

AUTHENTICATION: 0892496

131297703

DATE: 11-13-13

You may verify this certificate online at corp.delaware.gov/authver.shtml

State of Delaware
Secretary of State
Division of Corporations
Delivered 10:30 AM 11/12/2013
FILED 10:30 AM 11/12/2013
SRV 131297703 - 5431782 FILE

CERTIFICATE OF FORMATION
OF
DANSKAMMER ENERGY, LLC
A DELAWARE LIMITED LIABILITY COMPANY

ARTICLE I – NAME

The entity being formed is a Delaware limited liability company named Danskammer Energy, LLC (the "Company").

ARTICLE II – REGISTERED AGENT AND REGISTERED OFFICE

The address of the registered office of the Company in Delaware is Corporation Trust Center, 1209 Orange Street, Wilmington, Newcastle County, Delaware, 19801. The name of the Company's registered agent at such address is The Corporation Trust Company.

ARTICLE III - PURPOSE

The Company's business and purpose shall be to transact any and all lawful business for which a limited liability company may be organized under Delaware law.

IN WITNESS WHEREOF, I have hereunto set my hand this the 8th day of November, 2013.

By: James E. Brown II, Authorized Agent