

**BEFORE  
THE OHIO POWER SITING BOARD**

In the Matter of the Application of **SENECA** )  
**WIND, LLC** for a Certificate of )  
Environmental Compatibility and Public Need ) Case No. 18-488-EL-BGN  
for a Wind-Powered Electric Generating )  
Facility in Seneca County, Ohio. )

**DIRECT TESTIMONY OF**

**D. Lynn Gresock,  
Vice President – Energy Program  
Tetra Tech, Inc.**

**on behalf of**

**Seneca Wind, LLC**

**August 6, 2019**

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

**A-1.** My name is D. Lynn Gresock. I am a Vice President in Tetra Tech, Inc.'s ("Tetra Tech") Energy Program. My office is located at 3 Lan Drive, Suite 100, Westford, Massachusetts, although Tetra Tech has offices all over the world, including in Ohio.

**Q-2. What is your educational background?**

**A-2.** I was awarded a Bachelor of Science Degree in Environmental Design from the University of Massachusetts in 1984.

**Q-3. What is your professional background?**

**A-3.** I have 35 years' experience in regulatory issues as they relate to environmental permitting and compliance for a wide range of projects. Since June of 1984, when I started working for an environmental consulting firm in Boston, I have been employed by various environmental consulting firms similar to Tetra Tech, with the exception of two years when I worked directly for an independent power producer based in Maryland known as U.S. Generating Company. I have been a Vice President at Tetra Tech for the past 6 years. For much of my career, I have focused on providing consulting services for energy projects. My experience includes obtaining environmental approvals for more than 30,000 megawatts ("MW") of electric generation capacity. I have provided development permitting and support for a wide range of generating facilities, including renewable energy facilities. I have supported project development from early definition phases, through obtaining licensing approvals, construction oversight and operational compliance support. My curriculum vitae is attached at Attachment DLG-1.

**Q-4. Have you previously provided testimony in support of siting energy projects in Ohio or other jurisdictions?**

**A-4.** Yes. I have supported numerous energy projects in Ohio, and occasionally have been called upon to provide formal testimony. I have also provided formal testimony in adjudicatory processes before the Energy Facilities Siting Board in Massachusetts, the Connecticut Siting Council, and the New York Public Service Commission, in addition to supporting testimony and public outreach in more local venues.

**Q-5. On whose behalf are you offering testimony?**

**A-5.** I am testifying on behalf of the Applicant in Case No. 18-488-EL-BGN, Seneca Wind, LLC (“Applicant” or “Seneca Wind”) in support of the Seneca Wind Project (the “Project”).

**Q-6. Describe the scope of your responsibilities for Tetra Tech on behalf of the Project.**

**A-6.** I am the lead environmental consultant for the Project. I am responsible for procuring, managing, and performing consulting work evaluating the Project’s setting and certain potential environmental effects. In addition to my own technical knowledge, technical experts internal and external to Tetra Tech work under my direction, and I work closely with other team members to support preparation of documents such as the Ohio Power Siting Board (“OPSB”) application (“Application”), including some of the general information provided in the application and the following specific studies: the economic impact study; the acoustical assessment report; the flicker analysis; the communication studies; the wetland and stream delineation reflected in the aquatic resource report; the cultural resource reports; and the visual impact assessment.

**Q-7. What is the purpose of your testimony?**

**A-7.** The purpose of my testimony is to describe the studies undertaken by Tetra Tech and its subcontractors (the “Tetra Tech Studies”) on behalf of the Applicant and to summarize the results of those studies.

**Q-8. What was your role in the Tetra Tech Studies for the Application?**

**A-8.** Each of the Tetra Tech Studies was performed by me or under my direct supervision and control. My role was to provide senior-level management of the studies, including planning, scheduling, and management of the desktop and field investigations; to facilitate providing necessary input data from the Applicant; to perform senior-level review of the study products (e.g., narratives, figures, and other supporting material); and to communicate with the Applicant regarding each study’s progress as it related to both completion and meaning for the Project. I also provided technical knowledge in the

1 preparation of the Visual Impact Assessment based on my planning background and  
2 previous experience preparing such assessments.

3 **Q-9. Please summarize the Economic and Fiscal Impact Study and its conclusions.**

4 **A-9.** This study was performed in response to Ohio Administrative Code (“O.A.C.”) 4906-4-  
5 06(E), which generally requires the Applicant to provide information regarding the  
6 economic impact of the Project, including estimates of (1) construction and operation  
7 payroll, (2) construction and operation employment, (3) local tax revenue increases  
8 accruing from the facility, and (4) the economic impact of the Project on local  
9 commercial and industrial activities.

10 Input values for the economic impact study were provided by the Applicant through  
11 discussions with Tetra Tech regarding the model and their requirements. The study  
12 estimated economic and fiscal impacts of the Project separately at the state (Ohio) and  
13 local (Seneca County) levels. Economic impacts were assessed using the National  
14 Renewable Energy Laboratory's (“NREL”) Jobs and Economic Development Impact  
15 (“JEDI”) Land-based Wind Model (“JEDI Wind Model”) and are presented in terms of  
16 employment, income, and economic output. The fiscal impact analysis provides an  
17 estimate of tax revenues that would be expected to accrue as a result of Project  
18 construction and operation. The study is found in Appendix C to the Application. The  
19 construction and operation of the Project will have a substantial positive effect on local  
20 economic activities through expenditures for development, construction (labor and  
21 materials) and operations. Project-related expenditures and employment will generate  
22 additional economic benefits to other commercial enterprises in the local economy.

23 Construction of the Project is estimated to support 795 total jobs in Ohio, and  
24 approximately \$46.7 million in labor income, with total economic output of  
25 approximately \$132.6 million. This does not include equipment manufacturing  
26 (turbines, blades, and towers), which is expected to occur out of state, but does include  
27 jobs elsewhere in the Ohio manufacturing sector based on balance-of-plant material  
28 expenditures and other required inputs. On-site construction jobs will number between  
29 175-250 workers. Ohio workers are expected to fill 99 of these jobs, with an additional  
30 22 Ohio workers contributing to construction-related services jobs such as engineers,

1 legal support and other consultants; therefore, Ohio workers will fill a total of 121  
2 construction-related jobs, with an estimated payroll of \$8.9 million. In Seneca County,  
3 Project construction is estimated to support approximately 49 total jobs and  
4 approximately \$2.4 million in labor income, with total economic output of  
5 approximately \$7.5 million. Construction impacts would be one-time impacts that  
6 would occur only during construction.

7 Operation of the Project is estimated to support approximately 39 total jobs in Ohio  
8 and approximately \$2.4 million in labor income, with total economic output of  
9 approximately \$7.8 million. This reflects direct employment of 11 workers (with an  
10 estimated annual payroll of \$600,000), with the remaining workers supported  
11 elsewhere in the local economy as a result of Project-related expenditures (local  
12 revenue and supply chain impacts) and expenditures by workers (induced impacts).  
13 The contribution would in Seneca County would be approximately 27 full-time jobs  
14 and approximately \$1.2 million in labor income, with total economic output of  
15 approximately \$4.6 million. These annual average positive impacts are expected to  
16 occur over the life of Project operation. The Applicant also estimates that lease payments  
17 to landowners will total more than \$20 million over the life of the Project.

18 In lieu of real and personal property taxes Seneca Wind estimates that the Project will  
19 generate annual payments of \$1.91 million in the form of a Payment in Lieu of Taxes  
20 ("PILOT"). "Base" annual PILOT payments are determined by the nameplate capacity of  
21 the facility and the percentage of construction workforce normally resident in Ohio. The  
22 payments range from \$6,000 to \$8,000 per MW. In addition, a board of county  
23 commissioners may impose an additional "service payment" that, coupled with the "base  
24 payment," cannot exceed \$9,000/MW. The Seneca County Board of Commissioners  
25 passed a resolution declaring the county an alternative energy zone, which would impose  
26 the maximum \$9,000/MW PILOT payment on the Project. We anticipate that the funds  
27 from the base payments will be distributed to the appropriate county, township and  
28 municipal taxing districts based upon applicable millage. The additional funds from the  
29 "service payment" will be dispersed as decided by the Seneca County Board of  
30 Commissioners.

**Q-10. Please summarize the Acoustic Assessment Study and its conclusions.**

**A-10.** This study was performed in response to O.A.C. 4906-4-08(A)(3), and was updated in supplemental filings submitted on September 14, 2018, January 2, 2019, and June 6, 2019; the report included in the June 6, 2019 supplemental filing (“Acoustic Assessment Report”) reflects the most current Project information.

The Acoustic Assessment Report shows that the Project meets the operational noise limitations provided in O.A.C. 4906-4-09(F) for the vast majority of wind turbines with standard mitigation design. The remaining turbines meet the noise limitation guidelines if additional standard mitigation is incorporated; the need for such mitigation would be determined once final locations of the up to 77 turbines that will be ultimately constructed.

The Acoustic Assessment Report also analyzed potential noise during construction of the Project, which would be caused primarily by construction and delivery equipment. The potential construction noise impact will be intermittent and temporary in nature. Applicant intends to minimize construction sound level impacts by notifying the local community of the construction schedule, providing contacts for complaints, and limiting construction primarily to daylight hours.

Applicant witness Fowler provides additional detail as to the Acoustic Assessment Study’s methodology and conclusions.

**Q-11. Please summarize the Shadow Flicker Impact Analysis and its conclusions.**

**A-11.** O.A.C. 4906-04-08(A)(9) requires the Applicant to evaluate and describe the potential cumulative impact from shadow flicker and include plans to minimize potential impacts. Wind farm shadow flicker is evaluated within a distance of ten rotor diameters or at least one-half mile, whichever is greater, of a turbine. For residences, specific values are provided, while property boundary impacts are represented graphically. Tetra Tech performed an analysis of potential shadow flicker impacts from the Project using the WindPRO software package for all 93 potential turbine locations under consideration. Therefore, the analysis presents conservative impacts because only a maximum of 77 of the turbines will actually be constructed. The WindPRO analysis was conducted to

determine shadow flicker impacts under realistic impact conditions (actual expected shadow), which incorporates historical meteorological conditions including wind speed, wind direction, and historical sunshine probability. This analysis calculated the total amount of time (hours and minutes per year) that shadow flicker could occur at receptors surrounding the Project. The results of the shadow flicker impact analysis are found as part of the Supplemental Information filed June 6, 2019, which replaces the Shadow Flicker Impact Analysis filed with the Application as Appendix H, and as supplemented by filings on September 14, 2018, January 2, 2019, and February 12, 2019.

O.A.C. 4906-4-09(H)(1) provides that a facility shall be designed to avoid unreasonable adverse shadow flicker effect at any non-participating sensitive receptor within one thousand meters of any turbine. At a minimum, the facility shall be operated so that shadow flicker levels do not exceed 30 hours per year at any such receptor.

The analysis of potential shadow flicker impacts from the Project on nearby receptors shows that shadow flicker impacts within the area of study are expected to be minor. Of the 2,902 potential non-participating sensitive receptors included as a part of the analysis, only 22 non-participating receptors had an impact potential greater than 30 hours per year. The highest level of impact for non-participating receptors reflects impacts occurring just 1.4 percent of annual daylight hours, as compared to the 0.7 percent of annual daylight hours reflected by 30 hours per year standard. Actual shadow flicker is expected to occur for less than the conservatively-modeled durations. The analysis was deliberately conservative and assumes that the receptors all have a direct in-line view of the incoming shadow flicker sunlight; the analysis also did not account for trees or other obstructions which may block sunlight. Impacts will also be reduced given that the windows of many houses will not face the sun directly during the key shadow flicker impact times. Although the incremental difference between 1.4 percent and 0.7 percent annual daylight hours is not significant, Seneca Wind is committed to achieving compliance with the 30 hour per year standard.

Following determination of which specific turbines will be constructed, the analyses will be re-evaluated and flicker modeling will be refined or mitigating measures will

1 be identified for any turbines continuing to result in greater than 30 hours of flicker  
2 per year to limit the shadow flicker impact to no more than 30 hours of flicker per  
3 year.

4 **Q-12. Have you reviewed the petition to intervene of Seneca County Residents**  
5 **(“Residents”) filed November 13, 2018?**

6 **A-12.** Yes.

7 **Q-13. In their petition, the Residents state that 27 non-participating residences may be**  
8 **exposed to more than 30 hours of shadow flicker per year, and that proposed**  
9 **turbines expose non-participating residences to up to 62 hours of shadow flicker per**  
10 **year. How do you respond?**

11 **A-13.** Since the residents filed their petition, the Application was updated on June 6, 2019, to  
12 reflect that only 22 non-participating residences for which model results indicate  
13 exposure to more than 30 hours of shadow flicker per year. As noted above, the existing  
14 evaluation is expected to overstate impacts, as shadow flicker was modeled  
15 conservatively, and the results also reflect a layout with 16 more turbines than will  
16 actually be constructed (of the 93 turbine locations being considered, only a maximum of  
17 77 turbines will be constructed). Once the specific locations are selected, the evaluation  
18 will be re-assessed to determine whether all non-participating residents would be  
19 modeled to experience less than 30 hours per year of flicker. Should any be identified  
20 where flicker impacts would be greater, modeling refinements or mitigating measures  
21 will be imposed on the contributing turbine(s) to ensure that impacts remain at less than  
22 30 hours per year.

23 **Q-14. Please summarize the Communications Study and its conclusions.**

24 **A-14.** O.A.C. 4906-4-08(A)(10) requires the Applicant to analyze the potential for the facility  
25 to interfere with radio and TV reception and describe measures that will be taken to  
26 minimize interference. O.A.C. 4906-4-08(A)(13) requires Applicant to analyze the  
27 potential for the facility to interfere with microwave communication paths and systems  
28 and describe measures that will be taken to minimize interference.



1 Tetra Tech subcontracted CommSearch to analyze, under my supervision, the potential  
2 effect the proposed wind turbines could have on off-air television stations (Application,  
3 Appendix K-1), AM and FM radio stations (Application, Appendix K-2), and  
4 microwave networks for telecommunications (Application, Appendix K-3). As was  
5 the case for the other technical studies, the analyses reflected all of the original  
6 potential 94 locations for turbines at the original hub heights. Because only up to 77  
7 turbines will actually be constructed, and hub heights for most of the turbines are now  
8 shorter, project-related impacts may be less than characterized in the studies.

9 Although broadcast television signals may be reflected by wind turbines, modern  
10 digital television receivers have undergone significant improvements to mitigate signal  
11 scattering. If scattering does occur, it can be mitigated by the use of a directional antenna. In  
12 the event that off-air television reception is disrupted by the presence of wind turbines after  
13 installation, cable television or direct broadcast satellite service are unaffected by wind turbine  
14 presence and will mitigate any disturbance. The Applicant will implement its complaint  
15 resolution plan during operation to determine whether issues are occurring relative to the Project  
16 and to come to appropriate resolution. However, as noted above, eliminating turbine locations  
17 and lowering the hub heights for many of the turbines may further reduce the potential for  
18 impact.

19 No impact on the licensed and operational AM or FM broadcast stations' broadcast,  
20 retransmission, or reception was identified in our analysis. Thus, no mitigation techniques are  
21 required for this project.

22 Microwave bands that may be affected by the installation of wind turbine facilities  
23 operate over a wide frequency range (900 megahertzMHz - 23 gigahertz). Licensed  
24 microwave networks provide long-distance and local telephone service, backhaul for  
25 cellular and personal communication service, data interconnects for mainframe  
26 computers and the Internet, network controls for utilities and railroads, and various  
27 video services. The Applicant's analyses identified two turbines (IDs 80 and 89) that may  
28 obstruct two microwave paths (IDs 2 and 50, respectively) and potentially cause signal  
29 degradation. Should these turbines be among the up to 77 turbines ultimately constructed, the  
30 Applicant will give additional consideration to the need for mitigation, including working with

1 the microwave path owner to develop a mutually agreeable mitigation or shift the turbine  
2 location to avoid the path to avoid the Fresnel clearance zone. However, because the turbines  
3 were modeled at a 134 meter hub height, and now will be reduced to a maximum of 114  
4 meters (if GE turbines are selected) or 109 meters (if SG turbines are selected), it is possible  
5 these impacts would be eliminated or reduced.

6 The analysis also shows that turbines 9, 64 and 83 are near the microwave Fresnel clearance  
7 zone. The Applicant has agreed to include drawings in its construction plans of the microwave  
8 paths and procedures to avoid interference by construction equipment (i.e., cranes). If  
9 avoidance is not possible, the Applicant will take the mitigation steps discussed above.

10 **Q-15. Please summarize the Aquatic Resources Report and its conclusions.**

11 **A-15.** In accordance with O.A.C. 4906-4-08(B)(1)(b), Tetra Tech prepared an Aquatic Resource  
12 Evaluation Report for the Project to investigate the presence of wetlands and surface  
13 water features. This report was filed December 3, 2018, and replaces the Preliminary  
14 Aquatic Resource Evaluation contained in the Application as Appendix L. The  
15 evaluation was based on methodologies enumerated in the United States Army Corps of  
16 Engineers (“USACE”) *Wetland Delineation Manual (1987 Manual*; Environmental  
17 Laboratory, 1987), as amended by the *Regional Supplement to the Corps of Engineers*  
18 *Wetland Delineation Manual: Midwest Region*, April 2012 (*Regional Supplement*;  
19 Environmental Laboratory, 2012). The report presents the methodology, results, and  
20 conclusions of wetland delineation and stream identification activities completed for the  
21 proposed Project. Where the Preliminary report focused on generalized areas of potential  
22 aquatic resources, the report filed on December 3, 2018 formalized delineations within  
23 specific proposed work areas. The purpose of the delineation was to determine the extent  
24 and quality of wetlands, streams and other surface waters located within or near the  
25 Project that may be subject to regulation under the Clean Water Act or the Ohio Isolated  
26 Wetland Permit Program.

27 No ponds or lakes would be impacted by the Project during construction or operation.  
28 Forty-four wetlands and 46 stream reaches were identified within the Aquatic Study  
29 Area. Of the 44 wetlands identified in the 3,622-acre area evaluated, there were no  
30 Category 3 wetlands.

1 The Applicant has used information from the Aquatic Resource Evaluation Report to  
2 refine layout features and construction measures to avoid and minimize impacts to  
3 aquatic resources to the greatest extent possible. The turbines themselves will have no  
4 impacts on the wetlands and streams identified. All impacts are associated with  
5 construction of access roads and collection lines, some of which would involve boring  
6 across streams and wetlands. Conservatively assuming all 93 turbines were  
7 constructed, one ephemeral, 15 intermittent, and four perennial streams would be  
8 impacted, equaling 0.2 acres of temporary impacts and 0.1 acres of permanent impacts.  
9 Construction would impact 12 wetlands, equaling 0.4 acres of temporary impacts, and  
10 0.1 acres of permanent impacts.

11 The Applicant will obtain coverage under the general National Pollutant Discharge  
12 Elimination System permit for storm water discharges associated with construction. It  
13 is anticipated that wetland impacts will be qualified to receive coverage under the  
14 USACE Nationwide Permit program, and that no individual Water Quality  
15 Certification will be required.

16 **Q-16. Please summarize the Cultural Resources Review and its conclusions.**

17 **A-16.** A cultural resources review was prepared in accordance with O.A.C 4906-4-08(D), to  
18 identify any registered landmarks of historic, religious, archaeological, scenic, natural, or  
19 other cultural significance within 10 miles of the approximately 56,900-acre Project  
20 Area, to evaluate potential impacts of the Project, and to describe plans to mitigate  
21 adverse effects. The study is found in Appendix P to the Application.

22 The review of cultural resource records identified no National Register of Historic  
23 Properties ("NRHP") listed resources and three NRHP Determination of Eligibility  
24 resources within the Project Area. The William Baker House (Ohio Historic Inventory  
25 ("OHI") No. SEN0111911) is located within the north-central portion of the Project  
26 Area and two houses without OHI numbers are located in Bloomville, within the south-  
27 central portion of the Project Area. The cultural resources records review identified an  
28 additional 66 listed or eligible resources within the 10-mile radius surrounding the  
29 Project Area.

1 A work plan for a formal impact assessment for both archaeological and historic  
2 architectural review has been developed in consultation with the Ohio Historic  
3 Preservation Office (“OHPO”), and was approved by the OHPO on October 22, 2018.  
4 Since that time, the Applicant has been coordinating with the OHPO with regard to  
5 findings, and will continue to do so. Seneca Wind has committed to avoiding direct  
6 impact with above-ground cultural resources (*i.e.*, historical structures and cemeteries),  
7 and will work with the OHPO and the Seneca, Crawford, Huron, and Wyandot County  
8 Historical societies, as appropriate, to mitigate adverse impacts.

9 **Q-17. Please summarize the Visual Impact Assessment and its conclusions.**

10 **A-17.** A Visual Impact Assessment was prepared to evaluate the potential visual effects of the  
11 proposed Project. In accordance with O.A.C. 4906-4-08(D) and 4906-4-09(C)(6), the  
12 study addresses the visual characteristics of the Project; the character and visual quality  
13 of the existing landscape; an evaluation of the viewshed, including a discussion of key  
14 aesthetic resources, areas of potential visibility, landscape similarity zones, and viewer  
15 groups; presentation of visual simulations; and a discussion regarding the anticipated  
16 visual impact of the Project. This study is found in Appendix Q to the Application. The  
17 study is considered to be a conservative representation, as it evaluates 94 potential turbine  
18 locations, of which only a maximum of 77 will be built, and incorporates the original  
19 turbine heights (the original maximum hub height was 134 meters, whereas the current  
20 maximum hub height is 114 meters, although some shorter turbines remain the same as  
21 originally proposed).

22 Visual assessment methodologies consider the degree to which areas exist in the  
23 surroundings that are especially designated as a park or other cultural feature for which  
24 changes to the viewscape could cause harm, as well as the type of viewers within the  
25 area. No National Parks, National Forests, National Wildlife Refuges, National Natural  
26 Landmarks, federally designated scenic rivers or trails are located in the Study Area.  
27 The Sandusky River and more proximate nature preserves are heavily treed and,  
28 therefore, are unlikely to experience a notable change. A listing of the various local  
29 parks and recreational areas, nature preserves, and other important recreational or  
30 scenic resources is also provided in the report.

1 Photographic simulations have been completed that meet the requirements of OAC  
2 4906-4-09(C)(6) by providing at least one vantage point in each area of 3 square miles  
3 within the Project Area, showing views to the north, south, east, and west, where  
4 turbines would be visible from that direction; in some instances, compass direction  
5 adjustments were made to increase the number of turbines viewed from a particular  
6 location. As can be seen in those simulations, representation of the visual effect of the  
7 turbine is provided for a range of distances as well as within variable settings. The  
8 Project will introduce tall, vertical elements into a relatively flat to gently rolling,  
9 horizontal landscape; however, visual impacts will differ and depend on several factors,  
10 such as how many turbines are visible from a viewing location, if turbines are screened,  
11 and the distance of the viewer from the turbines. Typically, higher contrast occurs  
12 where turbines dominate a view (either by being in close proximity or where several  
13 turbines are in close to moderate proximity to a viewer). Contrast typically decreases  
14 where turbines are co-dominant or subordinate in a view (where turbines are seen in the  
15 context of other similar features or where turbines are located farther away from the  
16 viewer).

17 The result is that the impact also varies; in some locations the change in view appears  
18 insignificant, while in other locations the change is more marked. Even where turbines  
19 can be seen, the degree of impact is subjective and will depend on the viewer's attitude  
20 toward visible wind turbines; some viewers find them graceful reflections of a trend  
21 toward renewable energy, while others have more adverse reactions.

22 The characteristics of the Project and its setting limit mitigation options. Minimizing  
23 lighting, and locating the turbines with adequate setbacks from surrounding residences  
24 will contribute to mitigation. The light color of the turbines, which is required by the  
25 Federal Aviation Administration to eliminate the need for daytime lighting, minimizes  
26 contrast, especially when viewed from a distance against the horizon.

27 **Q-18. Please summarize other elements of work completed under your direction.**

28 **A-18.** In accordance with O.A.C. 4906-4-08(C)(1)(b), this report shows the proximity of  
29 various structures in the Project area to within 1500 feet of proposed individual wind  
30 turbines (Table O-1) and within 250 feet of a proposed Project component (Table O-2).

1 A tabulation of these measurements can be found in Appendix O to the Application, and  
2 have been updated in subsequent Supplemental Information filings submitted on  
3 September 14, 2018, January 2, 2019, and February 12, 2019.

4 **Q-19. Does this conclude your testimony?**

5 **A-19.** Yes, it does, except that I reserve the right to update this testimony to respond to any  
6 further testimony in this case.

## **CERTIFICATE OF SERVICE**

I hereby certify that the foregoing Direct Testimony of Lynn Gresock was served upon the following parties of record via regular or electronic mail this 6<sup>th</sup> day of August 2019.



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Devin D. Parram

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## Experience Summary

Ms. Gresock has 35 years' experience in regulatory issues as they relate to environmental permitting and compliance for a wide range of projects. In recent years, she has specialized in permitting and due diligence activities for projects in the energy sector. Her project experience includes the preparation of environmental impact assessments and reports; regulatory strategy for industrial, commercial and residential development projects; site selection and suitability studies; municipal planning documents; and permit applications. Ms. Gresock has also represented clients on environmental matters at public hearings and has spoken at seminars on environmental issues. She has prepared and directed numerous environmental impact statements and other resource permits, and has extensive experience in guiding projects through regulatory channels in a timely and responsive manner. Ms. Gresock has also worked within the industrial sector and with regulatory agencies; she combines a unique perspective with the knowledge to successfully develop and implement environmental strategies.

**Energy Project Development Permitting.** Ms. Gresock has focused for many years on providing consulting services for energy projects. Her project experience includes obtaining environmental approvals for more than 30,000 megawatts (MW) of electric generation capacity. She has provided development permitting and support for a wide range of facilities, including fossil-fuel fired power facilities, renewable energy facilities, natural gas pipelines, electric transmission lines, and LNG facilities. She has supported project development from early definition phases, through obtaining licensing approvals, construction oversight and operational compliance support. Her knowledge of energy project issues brings practical consulting advice resulting in environmental permits that meet project operational needs.

**Site and Corridor Selection/Multimedia Permitting.** Ms. Gresock has provided site and corridor selection support for projects ranging from nationwide consideration of development locations to more focused site optimization. Associated work includes documentation, agency coordination and testimony to support regulatory procedures. She has also managed numerous projects requiring consideration and permits for the full range of environmental issues. Her understanding of the range of issues and ability to direct a team of experts towards achieving successful project approval has been utilized on a wide range of projects throughout the United States.

**Transactional Due Diligence and Auditing.** Ms. Gresock frequently directs environmental transactional due diligence teams, as well as providing auditing and environmental governance review. Her familiarity with the range of energy facilities and relevant regulatory programs allow for efficient identification of key issues and opportunities associated with assets in order to frame appropriate values and operational strategies. Her work has included single-asset focused evaluations as well as management of teams of staff evaluating large fleets of assets. She has continued involvement in many such acquisitions, providing auditing and operational reviews, as well as consulting on issues related to programs, policies and environmental, health and safety governance strategies.

## Education

BS, Environmental Design (Landscape Architecture and Regional Planning), University of Massachusetts, 1984

## Tetra Tech Project Experience

### sPower, Seneca Wind, Seneca County, Ohio

Lead environmental consultant for Ohio Power Siting Board (OPSB) permitting and related analyses associated with a proposed 212-megawatt (MW) wind energy facility. Work includes preparation of OPSB



documentation and mapping; wetland and species activities; visual impact assessment; cultural resources; and related outreach.

**Advanced Power NA, Oak Meadow Energy, Cook County, Illinois**

Full environmental licensing of a proposed 1,250-MW natural gas-fired combined cycle facility to be located in Glenwood, Illinois. Work includes an air permit application; wetland and species activities; cultural resources; well feasibility and development; noise assessment; public outreach; and other activities associated with environmental permitting.

**Nestlewood Solar I LLC, Nestlewood Solar, Clermont and Brown Counties, Ohio**

Full environmental licensing of a proposed 80-MW photovoltaic solar energy facility. Work includes preparation of OPSB documentation and mapping; wetland and species activities; cultural resources; visual assessment; and related outreach.

**Confidential Project – Connecticut**

Full environmental licensing of a proposed 375-MW simple cycle peaking facility located at an existing generating facility site. Work includes preparation of a Petition for Declaratory Ruling for filing with the Connecticut Siting Council (CSC); support of an air permit application; noise assessment; visual assessment; other agency consultation; and related outreach and testimony.

**Hecate Energy, Coeymans Solar and Greene County Solar, Albany County and Greene County, New York**

Principal-in-charge for Article 10 permitting associated with two solar energy facilities. Full environmental studies, negotiation of stipulations, application documentation, and associated outreach and support of related issues.

**Ohio River Partners Shareholder LLC, Hannibal Port Power**

Full environmental licensing of a proposed 485-MW natural gas-fired combined cycle facility located in Monroe County, Ohio on an existing industrial site. Work includes preparation of OPSB documentation and mapping; a Prevention of Significant Deterioration (PSD) air permit application; and other required resource permits and outreach.

**Pine Gate Renewables, LLC, Five Solar Energy Facilities in Rhode Island**

Environmental consulting services to support five approximately 1 MW solar facilities in locations throughout Rhode Island including environmental review to support National Environmental Policy Act (NEPA) review associated with federal funding; bat monitoring; and archaeological surveys.

**Wallingford Renewable Energy, LLC, Wallingford Renewable Energy, Wallingford, Connecticut**

Lead environmental consultant for permitting an approximately 20 MW solar project in Wallingford, Connecticut. Portions of the project will be located on a capped landfill, while the remaining arrays will be located on an adjacent parcel. Tetra Tech prepared the CSC Petition Approval; CSC approval was received within 3 months of submittal. In addition to the broad topics required in the CSC Petition, Tetra Tech provided support for layout, stormwater, wetland, vernal pool, listed species, geotechnical, and site cleanup issues. Tetra Tech will continue to provide support during construction.

**Clean Energy Future-Trumbull, Trumbull Energy Center, Village of Lordstown, Ohio**

Full environmental licensing of a proposed 800-MW natural gas-fired combined cycle facility located in Trumbull County, Ohio. Work includes preparation of OPSB documentation and mapping; a PSD air permit application; wetland and species activities; cultural resources; water and wastewater feasibility review; and related resource permits and outreach.

**Advanced Power NA, South Field Energy, Columbiana County, Ohio**

Full environmental licensing of a proposed 1,105-MW natural gas-fired combined cycle facility (with ultra-low sulfur distillate backup) located in Columbiana County, Ohio. Work has included preparation of OPSB applications for the generating facility, natural gas pipeline interconnection and electric transmission interconnection; documentation and mapping; a PSD air permit application; wetlands; noise; cultural resources; and activities associated with water use and wastewater discharge alternatives. Activities included a full National Pollutant Discharge Elimination System (NPDES) permit associated with wastewater discharge into the Ohio River. Also provided community outreach support.

**Clean Energy Future, LLC, Lordstown Energy Center, Village of Lordstown, Ohio**

Full environmental licensing of a proposed 800-MW natural gas-fired combined cycle facility located in Trumbull County, Ohio. Work includes preparation of OPSB documentation and mapping; a PSD air permit application; and related resource permits and outreach. Tetra Tech continues to provide support during the construction process.

**CPV Towantic, LLC, CPV Towantic Energy Center, Oxford, Connecticut**

Project manager and lead environmental consultant for permitting of the CPV Towantic Energy Center, an approximately 800-MW combined cycle electric generating facility in Oxford, Connecticut. Responsibilities have included environmental documentation associated with a Petition for Changed Conditions before the CSC and a Permit Application for Stationary Sources of Air Pollution, as well as providing outreach support and focus on the full range of considered environmental and community issues. Tetra Tech continued to provide support during the construction process, and continues to provide operational support.

**Clean Energy Future-Oregon, Oregon Energy Center, Oregon, Ohio**

Full environmental licensing of a proposed 800-MW natural gas-fired combined cycle facility located in Oregon, Ohio. Work includes preparation of OPSB documentation and mapping; a PSD air permit application; and related resource permits and outreach.

**Apex Power Group, LLC/Caithness Energy L.L.C., Guernsey Power Station, Guernsey County, Ohio**

Full environmental licensing of a proposed 1,650-MW natural gas-fired combined cycle facility located in Guernsey County, Ohio. Work includes preparation of OPSB documentation and mapping; a PSD air permit application; and related resource permits, including support for grouting historic mines.

**Confidential Client, Generating Facility Initial Permitting Support, Southwestern Pennsylvania**

Project manager and technical lead for review of key issues associated with a proposed site for an electric generating facility, including air permitting and other environmental constraints. Agency meetings were also supported during this early stage of project development.

**Hog Creek I and II, Renewable Energy Systems Americas Inc., Hardin County, Ohio**

Supported preparation of OPSB Amendment applications for both projects incorporating updated technology and the most current agency requirements.

**Confidential Client, Generating Facility Feasibility and Initial Permitting, Northeastern Illinois**

Project manager and technical lead for evaluation of a complete feasibility assessment for two potential sites to identify key issues and inform siting of a proposed combined cycle electric generating facility. Upon selection of a site, additional support continues to be provided.

**Confidential Client, Generating Facility Feasibility and Initial Permitting, Northeastern Tennessee**

Project manager and technical lead for evaluation of a complete feasibility assessment to identify key issues and inform siting of a proposed combined cycle electric generating facility. Agency pre-application meetings and additional technical evaluation of air quality, water and wastewater issues were also provided.

**Confidential Client, Generating Facility Feasibility and Initial Permitting, Northeastern Illinois**

Project manager and technical lead for evaluation of a complete feasibility assessment for three potential sites to identify key issues and inform siting of a proposed combined cycle electric generating facility. Constraints identification and permitting strategy were identified.

**NTE Connecticut, LLC, Killingly Energy Center, Killingly, Connecticut**

Project manager and lead environmental consultant for permitting of the Killingly Energy Center, an approximately 550-MW combined cycle electric generating facility in Oxford, Connecticut. Responsibilities have included environmental documentation associated with CSC documentation, a Permit Application for Stationary Sources of Air Pollution, as well as for other key environmental permits and approvals. Support of the Environmental Justice (EJ) and CSC process included development of and support of an EJ Plan and other local engagement, including active participation in community meetings.

**NTE Ohio II, LLC, Pickaway Energy Center, Pickaway County, Ohio**

Environmental licensing of a proposed 1,000-MW natural gas-fired combined cycle facility located in Pickaway Township, Ohio. Work has included wetlands; cultural resources; and water/wastewater feasibility review. As the project progresses, full OPSB mapping, documentation and support will be provided for the generating facility and its interconnections, including technical focus on specific environmental disciplines.

**NTE Ohio, LLC, Middletown Energy Center, Butler County, Ohio**

Full environmental licensing of a proposed 525-MW natural gas-fired combined cycle facility located in Middletown, Butler County, Ohio. Work included preparation and support of the OPSB process, wetlands and species review, noise, and cultural resources. Due to the site's former ownership, consideration of historic contamination was necessary. Phase I and Phase II Environmental Site Assessments were completed to document that recognized environmental concerns were appropriately addressed. Work continues as the project is undergoing construction, with regular inspections and reporting as well as on-call support of issues as requested. Tetra Tech continued to provide support during the construction process.

**Advanced Power NA, Carroll County Energy, Carroll County, Ohio**

Full environmental licensing of a proposed 750 MW natural gas-fired combined cycle facility located in Carroll County, Ohio. Work has included initial feasibility review, preparation of OPSB assessments, documentation and mapping, a PSD air permit application, wetlands, noise, cultural resources, and activities associated with water use and wastewater discharge alternatives. Support of the project has continued through project construction, including several OPSB amendments and other as-needed support. Tetra Tech continued to provide support during the construction process, and continues to support operation.

**Oregon Clean Energy, North American Project Development, Oregon, Ohio**

Managed the full environmental licensing of a proposed 800 – 940 MW natural gas-fired combined cycle facility located in Oregon, Ohio. Work included preparation of Ohio Power Siting Board documentation and mapping (including several amendments), a PSD air permit application, wetlands and stormwater permits, and permits related to wastewater discharge to the local treatment plant.

**Advanced Power NA, Cricket Valley Energy Project, Dover, New York**

Environmental licensing for a 1,000 MW combined cycle project requiring an Environmental Impact Statement (EIS) through the State Environmental Quality Review Act (SEQR) process as well as federal, state and local permits. The project's location on an industrial property, portions of which have been in use for many years, requires consideration of potential site contamination and cleanup, as well as building demolition issues. Other project issues include air quality; wetland and endangered species issues

associated with the site's proximity to the Swamp River; development of an on-site groundwater supply; stormwater management; and other potential community concerns such as noise, visual, traffic and effect on services. Supported outreach through public open house and topical Working Group meetings. Prepared remediation/closure plan, and supported preparation of the project for construction, including associated with its proposed electric transmission interconnection.

## **Previous Experience**

### **Representative Power Plant and Transmission Permitting Experience**

#### **Fremont Energy Center, Calpine Corporation, Sandusky County, Ohio**

Managed full environmental licensing for a proposed 700 MW combined cycle facility located near Fremont. The project's wet cooling system utilized city water supplies, and the project infrastructure utilized the adjacent rails-to-trails corridor. Work included preparation of an OPSB documentation and mapping, a PSD air permit application, and permits related to wastewater discharge to the local treatment plant.

#### **Lawrence Energy Center, Calpine Corporation, Lawrence County, Ohio**

Full environmental licensing for a proposed 2,200 MW combined cycle facility. The site's location on the shores of a major surface water body required consideration of cultural resources, wetland and floodplain issues. The project's proposed withdrawal and discharge of surface water required NPDES authorization as well as review by the U.S. Army Corps of Engineers in that regard. Complex terrain immediately proximate to the site resulted in the need for interactive source air quality modeling. Stack height optimization required consideration of a nearby airport as well. In addition to the resource permits noted, an OPSB application was prepared and approved, and a Memorandum of Agreement developed to protect cultural resources at the site.

#### **Hyperion Power Project, Delta Power, Allen County, Ohio**

Managed the preparation of the OPSB application for an approximately 750 MW combined cycle facility located in Fort Shawnee Township. Issues included avoidance of underground piping systems associated with the adjacent tank farms, and coordination with the project team of consultants responsible for a variety of technical issues.

#### **Washington Energy Facility, Duke Energy North America, Washington County, Ohio**

Managed environmental licensing for a 620 MW combined cycle facility utilizing wet cooling. Prepared documentation and mapping for the OPSB review and the air permit application. Issues included archaeological resources and water issues associated with the proposed intake and discharge into the Muskingum River.

#### **Madison Generating Station, Duke Energy North America, Butler County, Ohio**

Managed environmental licensing for a 640 MW simple cycle peaking facility consisting of eight General Electric (GE) 7EA units. Environmental support included documentation and mapping for the OPSB review, preparation of air permitting documentation, evaluation of the site for environmental and cultural resources, and documentation of construction stormwater management systems. The project began construction within six months of the initial permit application filing; this expedited review involved continual agency interaction and close coordination with the project's development and construction team.

#### **Energy Facility Expansion Projects, Confidential Client, Ohio and Pennsylvania**

Evaluated the feasibility and permitting requirements associated with expansion of existing energy facilities. Considerations included existing facility compliance history, site constraints, air quality modeling and regulatory issues, water demand strategies, wastewater discharge options, and permitting complexity.

**Lake Erie Link Project, Lake Erie, TransÉnergieUS, Ltd., Nanticoke, Ontario to Ashtabula, Ohio and East Springfield, Pennsylvania**

Managed environmental licensing efforts associated with an underground direct current electric cable proposed to connect the Canadian and United States electrical grids. Work included environmental assessments in support of route selection and converter station site selection; in-lake field program direction; wetland delineations; noise assessments; cultural resource review; and local support. An Environmental Assessment associated with the required Presidential Permit was completed. Other potential permits for which initial support was provided included Army Corps of Engineers licensing; Great Lakes Commission review; and state and local licensing in both Pennsylvania and Ohio.

**Bayonne Energy Center, Energy Resources, Bayonne, New Jersey**

Project manager for environmental permitting associated with a proposed 512 MW natural gas and oil fired simple cycle electric generating facility. Issues included air quality, coastal consistency review, historical site contamination issues, water supply alternatives evaluation, and coordination associated with the proposed underwater electric cable proposed to provide project output to meet New York City energy needs.

**Heritage Station, Sithe, Oswego, New York**

Managed environmental licensing for an 800 MW combined cycle project on the 190-acre Independence Station cogeneration facility site. The project required review under the Article X process. As a part of this process, detailed stipulations were developed as a scope for the environmental evaluation. The resulting seven-volume application was confirmed by the Department of Public Service to have completely responded to the stipulation requirements, and was approved under an expedited settlement process. Key issues included the use of Lake Ontario water in the proposed wet cooling system, and potential cumulative effects associated with the project and the adjacent cogeneration facility. The full range of environmental disciplines was examined for the project.

**Cogeneration Facility, U.S. Generating Company, Rotterdam, New York**

Successfully obtained environmental permits for a 230 MW generating facility. Responsibilities included preparation of a multidisciplinary EIS under SEQR, Army Corps of Engineers wetlands permits, state wetland permits, air permits, water discharge permits, and Public Service Commission documentation for the proposed electrical interconnections. Continual environmental design input and strategic management enabled the project to meet an aggressive schedule for obtaining environmental approvals.

**Cogeneration Facility, U.S. Generating Company, Guilderland, New York**

Managed environmental permitting for a 230 MW independent power production facility. Responsibilities included preparation of a multidisciplinary EIS under SEQR, Army Corps of Engineers wetlands permits, air permits, and Public Service Commission approvals for proposed natural gas and electrical interconnections. Early environmental screening and involvement in project design enabled the client to develop a site plan meeting applicable environmental standards.

**Cogeneration Facility, Boston Thermal Cogeneration Corp., Boston, Massachusetts**

Developed the strategy for and managed the permitting of a gas and oil fired cogeneration facility providing steam to the existing Boston Thermal distribution system and electricity to Boston Edison's power network. Permits were required from all levels of government, including a comprehensive Massachusetts Environmental Policy Act Environmental Impact Report. Issues including remediation of existing site contamination, air quality impacts, health risk concerns, traffic and noise. The location of the site on filled tidelands required compliance with coastal regulatory standards as well. Continuous interaction with community groups and regulatory agencies was an important component of the permitting strategy.



**Manchester Street Station, New England Power Service Co., Providence, Rhode Island**

Prepared a full-scope Environmental Assessment and environmental permit applications for repowering the Narragansett Electric Company's existing Manchester Street Station and associated new electric transmission system. Analyzed baseline environmental conditions to identify the projected impact, and developed mitigation to minimize identified impacts. Key issues included air quality, thermal discharges into the Providence River, and the preparation of state wetland applications.

**Expansion and Development Site Review, International Power America, Connecticut and Massachusetts**

Provided critical issues assessment documentation to review five potential sites in Connecticut and Massachusetts for potential new development or expansion projects. Detailed regulatory and issue review, development of milestone scheduling to demonstrate the potential for licensing feasibility in a timely manner, and identification of key tasks were provided to support the client's selection of projects for development. Several sites included consideration of historic site contamination issues. Environmental permitting support was provided for two projects selected for development.

**Medway Station Expansion Project, Sithe, Medway, Massachusetts**

Managed environmental licensing efforts for a 540 MW natural gas fired peaking project proposed to augment existing on-site peaking capability. As the first simple-cycle peaking project proposed in Massachusetts in recent history, this project involved new applications for existing environmental standards, and additional documentation to support the appropriateness of technology selection. Issues included air quality, noise, and local concern with regard to regional power plant development. Massachusetts Energy Facilities Siting Board approval, including expert witness testimony, was required for the project. In addition to technical permit applications at the state level, comprehensive environmental documentation was required through the Massachusetts Environmental Policy Act process. Early involvement in the project allowed for optimal siting and design to best minimize impacts of the proposed facility, and allow for mitigation of existing facility impacts, to assure regulatory officials and the local community that impacts associated with the proposed expansion were acceptable.

**Peabody Power Facility, Peabody Power, Peabody, Massachusetts**

Obtained full environmental licensing for a 99 MW peaking facility to be operated on natural gas with oil backup. Documentation that Energy Facilities Siting Board review was not required was obtained via a formal jurisdictional advisory opinion process. Massachusetts Environmental Policy Act Certification for the project was received following review of the Environmental Notification Form, with no Environmental Impact Report required. Other environmental issues included consideration of site remediation requirements, air permitting, noise impact analysis, and work within wetland buffer zones.

**Terrapin Power Project, Competitive Power Ventures, L.P., Savannah, Georgia**

Full environmental licensing for a proposed 800 MW combined cycle facility utilizing natural gas with low sulfur fuel oil backup. Its location proximate to the Savannah River required consideration of wetland and floodplain issues. The site was also located within an industrially zoned area with a long history of industrial uses; a detailed site investigation was undertaken, including coordination with the United States Environmental Protection Agency (EPA) and Georgia Environmental Protection Division to identify remedies that would return the site to a useful purpose. The site's proximity to Wolf Island, a Class I area, required a detailed assessment of the project's potential effect on visibility in that area. The project proposed to utilize reclaimed water from an adjacent publicly owned treatment works for its wet cooling system.

**Port City Power Project, Sithe/Exelon, Waukegan, Illinois**

Full environmental licensing for an approximately 900 MW natural gas fired combined cycle facility on an industrial site near Lake Michigan. Air quality impact analysis, noise assessment, ecological evaluation, consideration of site remediation needs, and visual impact assessment were all conducted for this project.

**Big River Power Project, Competitive Power Ventures, L.P, Screven County, Georgia**

Prepared an air permit application, including consideration of Class I impacts, for this 800 MW combined cycle facility. Adjacent to the Savannah River, the project proposed the use of surface water in a wet cooling system and discharge to a nearby agricultural facility in order to maximize water recycling. Environmental site assessment, cultural resource investigations and wetland delineations were conducted for the project.

**Audrain Generating Station and Bollinger Generating Station, Duke Energy North America, Missouri**

Managed environmental licensing for two separate 640 MW simple cycle peaking facilities consisting of eight GE 7EA units. Environmental approvals for the Audrain Generating Station were received on an expedited schedule. Issues included air permitting, cultural resources, Indiana bat habitat review, stormwater management and wastewater discharge authorization. The Bollinger Generating Station involved similar issues. In addition, the Bollinger site's proximity to a Class I area involved consultation and review by the Federal Land Manager, including a CALPUFF analysis to address the potential for visibility and regional haze issues.

**Marshall County Generating Station, Duke Energy North America, Kentucky**

Managed environmental licensing for a 640 MW simple cycle peaking facility consisting of eight GE 7EA units. In addition to air licensing, this project involved wetland delineation and avoidance, permits for work within mapped floodplain, Indiana bat habitat issues, stormwater management plan development and testing of groundwater to develop a water source for the project.

**Vermillion Generating Station, Duke Energy North America, Vermillion County, Indiana**

Managed environmental licensing for a 640 MW simple cycle peaking facility consisting of eight GE 7EA units. Environmental support included evaluation of the site for environmental and cultural resources, preparation of air permit documentation, and preparation of an Erosion Control Plan to identify construction stormwater management systems. An on-site groundwater well development program was also successfully completed for this project. The project began construction within six months of the initial permit application filing; this expedited review involved continual agency interaction and close coordination with the project's development and construction team.

**DeSoto Generating Station, Duke Energy North America, DeSoto, Indiana**

Managed environmental licensing for a 640 MW simple cycle peaking facility consisting of eight GE 7EA units. Environmental conditions at the site were evaluated, and an air permit application prepared and submitted. An on-site groundwater well development program was also required at this site.

**Lee County Generating Station, Duke Energy North America, Lee County, Illinois**

Assisted client in initial site screening stage, assessing site for critical issues. Numerous other Illinois sites were also evaluated for this analysis. Following site selection, managed environmental licensing for a 640 MW simple cycle peaking facility. Air permitting issues included the proximity of a nearby power plant proposal, and the agency's need to understand the potential for cumulative impacts. Water needs at the site were to be served through development of a groundwater well. Site rezoning was required to accommodate the proposed use.

**ANP Bellingham Power Project, American National Power, Bellingham, Massachusetts**

Managed environmental permitting efforts associated with a proposed two-unit 580 MW natural gas fired facility. Comprehensive environmental documentation for both Energy Facilities Siting Board and Massachusetts Environmental Policy Act review was completed, in addition to preparation of environmental applications. A key issue for this project was the number of similar projects proposed in the area, and the resulting need for cumulative impact assessment for air quality and water use. The use of dry cooling technology was incorporated to significantly limit facility water demand; proximity to the Charles River and the presence of on-site wetlands were also factors in the project's design and permitting. Coordination with Algonquin Gas Transmission Company was required to address impacts associated with a proposed natural gas pipeline interconnect crossing the Charles River.

**Milford Power Project, Power Development Company, Milford, Connecticut**

Managed full service environmental permitting for a two-unit 540 MW facility located in the coastal zone proximate to the Housatonic River. As one of the first merchant power proposals in Connecticut, coordination with regulatory agencies was necessary to define appropriate levels of assessment to facilitate an expedient review. The use of wastewater treatment plant effluent for demand reduction on the public water supply, the use of a single stack of less than good engineering practice (GEP) height to minimize visual intrusion on the surrounding community, and the selection of a site that would minimize impact on environmental features and eliminate the need for extensive off-site interconnects were key elements of the project's design. Activities included preparation of Siting Council documentation, air quality permitting, water and wastewater permitting, and coordination with the local community for environmental review of such issues as traffic and noise.

**Millennium Power Project, U.S. Generating Company, Charlton, Massachusetts**

Managed full service environmental permitting for the 360 MW Millennium Power project. This included preparation of comprehensive environmental documentation for both the Energy Facilities Siting Board and for Massachusetts Environmental Policy Act review. Issues included air quality; potential effects of water withdrawal on the Quinebaug River; wetland impact; and archaeological resource avoidance. In addition to site development, the project also included offsite improvements; these piping corridors were also included in the permitting effort. Permit applications were prepared to meet federal, state and local requirements, and environmental support provided. Wetlands and salamander habitat creation were elements of project mitigation for which plans were developed and oversight provided.

**Cataula Generating Project, U.S. Generating Company, Harris County, Georgia**

Managed environmental permitting for the Cataula Generating Project, a proposed natural gas fired peaking project consisting of one to four units. The need to be prepared to meet potential future market demands required strategic involvement in presenting project information; the goal was to obtain permits with maximum flexibility while providing regulators with a level of comfort to allow their issuance of project approvals in a timely manner. Air permit applications, Army Corps of Engineers' wetland approval, and NPDES permitting were required. In addition, a comprehensive Environmental Assessment was prepared to support local permitting efforts, and local approvals (such as for the proposed on-site septic system) were overseen. A series of environmental analysis were performed to support project financing, including a site assessment for site contamination potential, and protected species and cultural resource screening.

**Coal Fired Cogeneration Facility, Air Products and Chemicals, York County, Pennsylvania**

Managed the preparation of an Environmental Information Volume (EIV) for the Department of Energy (DOE) for a proposed coal fired cogeneration facility. The project had obtained a grant from DOE under the Clean Coal Technologies program, thereby requiring multidisciplinary review under the National Environmental Policy Act (NEPA). Project activities included strategic consultation with DOE to



establish protocols for preparation of the EIV, site reconnaissance, the full range of environmental analyses, EIV documentation, and response to agency and public comment arising from the public scoping meeting. An additional responsibility was coordination with DOE and its third-party consultant to facilitate preparation of an EIS for the York County project.

**Coal Gasification Generating Facility, Duke Energy Company, Camden, New Jersey**

Project manager for multidisciplinary environmental permitting efforts associated with a proposed integrated gasification combined cycle (IGCC) coal fired generating facility. Upon award of a Clean Coal grant, DOE negotiation and preparation of an EIV was initiated.

**L'Energia, Biodevelopment Incorporated, Lowell, Massachusetts**

Managed the regulatory strategy and permit preparation for an 85 MW gas powered cogeneration facility proposed to supply steam to the Prince Company and electricity to Boston Edison. Major issues included air emissions, noise generation, discharge of stormwater into wetland resources, steam line construction impacts, and the proximity of the site to a known hazardous waste containment area.

**Coal-Fired Cogeneration Facility, Cogentrix, Inc., Mayaguez, Puerto Rico**

Managed the preparation of Environmental Impact Statements and other permit applications on both a federal and commonwealth level for a 300 MW coal fired cogeneration facility on the coast of Mayaguez, Puerto Rico. Major issues included coordination of the joint regulatory process; in-field air monitoring, modeling, and control technology analysis for a federal and commonwealth Environmental Quality Board (EQB) air permit application; risk assessment associated with projected air quality emissions; comprehensive aquatic data collection in conjunction with NPDES and EQB discharge permit preparation; and Army Corps of Engineers permitting for construction of the proposed coal handling conveyance to be constructed in the Mayaguez Bay.

**Peak Combustion Turbines, South Carolina Electric and Gas, Canadys, South Carolina**

Managed the preparation of an Environmental Assessment in support of an application before the Public Service Commission to permit an oil or natural gas fired peaking facility. A range of environmental issues were examined, including a wetland delineation using Army Corps of Engineers methodology. Special issues related to the facility's proximity to the existing coal fired power plant; the extent to which existing services could be used at the proposed facility was also determined.

**Critical Issues Assessment, Confidential Client, Southwestern Connecticut**

Completed critical issues assessment in a phased manner to support a potential 200 MW simple cycle generating facility proposed in southwestern Connecticut. In addition to issues identification and development of a permitting plan, air dispersion modeling was completed to support stack height optimization and feasibility assessment.

**Upson Generating Project, Sonat, Upson, Georgia**

Managed the preparation of air permit documentation for a proposed peaking power facility. Dispersion modeling was completed along a compressed timeline, including addressing issues pertaining to terrain impacts in the project's vicinity.

**Peaking Units, U.S. Generating Company, Harris County, Georgia**

Managed environmental permitting for the Cataula Generating Project, a proposed natural gas fired peaking project consisting of one to four units. The need to be prepared to meet potential future market demands required strategic involvement in presenting project information; the goal was to obtain permits with maximum flexibility while providing regulators with a level of comfort to allow their issuance of project approvals in a timely manner. Air permit applications, Army Corps of Engineers' wetland approval, and NPDES permitting were required. In addition, a comprehensive Environmental

Assessment was prepared to support local permitting efforts, and local approvals (such as for the proposed on-site septic system) were overseen. A series of environmental analysis were performed to support project financing, including a site assessment for site contamination potential, and protected species and cultural resource screening.

#### **Midwest Site Review, Confidential Client**

Managed site selection effort for a four-state area of the Midwest (Missouri, Tennessee, Illinois and Indiana). In addition to a review of regulatory programs and issues for each state, site issues were reviewed through a combination of geographic information system (GIS) computer overlays and windshield site reconnaissance. Specific sites and regions were evaluated to facilitate client evaluation of potential development areas.

#### **Midwest Water Availability Assessment, Confidential Client, Six States**

Conducted a comprehensive screening level evaluation of locations within six states. Within each state, corridors were identified with proximate natural gas pipeline and electric transmission lines. In such areas, potential for water resource availability was assessed for a range of options, including groundwater, surface water, treated effluent and other industrial users.

#### **Representative Wind Energy Facility and Transmission Experience**

##### **Glacier Ridge Wind Farm, E.ON Climate & Renewables, Ohio**

Prepared critical issues assessment and permitting plan for a 200 MW wind project. Provided permitting support, including wetland identification, avian and other species consultation and surveys, noise analyses and other activities that will be necessary for project risk evaluation and permitting needs. Drafted Ohio Power Siting Board application and represented the project at the local public meeting. Supported agency communications and preparation of a Habitat Conservation Plan in support of application for an Incidental Take Permit for the Indiana bat.

##### **Sheldon Wind Power Project, E.ON Climate & Renewables, Iroquois County, Illinois**

Prepared critical issues assessment and permitting plan to evaluate a 150 – 500 MW wind project and potential 30-mile transmission line. Provided permitting support for proposed 150 MW at the site, including conducting avian and other species surveys and consultation, wetland identification, noise analysis, environmental site assessment, coordination of cultural resources review, and other activities to support county approval of the project and other permits necessary for project construction.

##### **Paxton Wind Power Project, E.ON Climate & Renewables, Iroquois and Ford County, Illinois**

Prepared critical issues assessment and permitting plan for a 150 MW wind project. Provided permitting support, including wetland identification, avian and other species consultation and surveys, noise analyses and other activities that will be necessary for project risk evaluation and permitting needs. Currently supporting agency communications and preparation of a Habitat Conservation Plan in support of application for an Incidental Take Permit for the Indiana bat.

##### **Offshore Wind Project, Neptune Wind, LLC, Massachusetts, Rhode Island and Maine**

Supporting early development activities for potential offshore wind projects, including regulatory strategy, site selection, evaluation of alternatives, and support of applications to the Bureau of Ocean Management, Regulation and Enforcement. As project development progresses, environmental and engineering support will continue to be provided.

##### **Wildcat Wind Power Project, E.ON Climate & Renewables, Several Phases, Indiana**

Prepared critical issues assessment and permitting plan for a 200 MW wind project as well as expansion into additional phases. Provided permitting support for Phase I and Phase II, including avian and other species consultation and surveys, noise analyses, cultural resources assessment and other activities that will

be necessary for project risk evaluation and permitting needs. Currently supporting agency communications and preparation of a Habitat Conservation Plan in support of application for an Incidental Take Permit for the Indiana bat.

**Offshore Wind Demonstration Project, Confidential Client, North Carolina**

Environmental consulting services for a proposed offshore wind demonstration project in Pamlico Sound. In addition to providing environmental consulting associated with project design, acted as third-party environmental contractor on behalf of the U.S. Army Corps of Engineers for the project.

**Offshore Technology Assessment, Confidential Client**

Evaluated potential environmental, engineering, regulatory, and timeline issues associated with the feasibility of installing developing offshore wind foundation technology.

**Kibby Wind Power Project, TransCanada Energy Ltd., Franklin County, Maine**

Manager of environmental licensing for a 132 MW wind energy facility near the Canadian border in Maine, and its associated 27-mile 115 kilovolt transmission line. The initial project phase involved identification of potential licensing requirements and community issues. A detailed application for installation of eight meteorological towers was prepared and submitted. Initial review included consideration of a potential transmission line that could extend to the north, interconnecting the proposed facility with the Canadian electrical grid. Detailed applications have been prepared and submitted to the Land Use Regulation Commission, Department of Environmental Protection, and the U.S. Army Corps of Engineers, and significant coordination and outreach has occurred with other regulatory agencies and environmental stakeholders, as well as the local community. Key issues include avian and bat studies, visual issues, recreational uses, and development in a protected mountain district.

**Offshore Wind Energy Project, Fishermen's Energy, New Jersey**

Provided support associated with site selection, environmental assessment, engineering management, and document coordination for a proposed 350 MW offshore wind project, proposed to be implemented in phases. The resulting documentation, incorporating contributions from a broad consortium of team members, was submitted to the New Jersey Bureau of Public Utilities for review and selection of a pilot offshore wind project. As a pilot project, extensive monitoring for impact assessment was required, and detailed protocols for a range of environmental issues were prepared for inclusion in the submittal.

**Glebe Mountain Wind Project, Catamount Energy Corporation, Londonderry and Windham, Vermont**

Supported preparation of § 248 filings for a proposed wind energy project. In addition to providing expert witness documentation for several topics, assisted Catamount in coordination of specialty contractors involved with ecological, community and engineering issues.

**Offshore Technology Assessment, Confidential Client**

Evaluated potential environmental, engineering, regulatory and timeline issues associated with the feasibility of installing developing offshore wind foundation technology.

**Wind Energy Project Critical Issues Evaluation and Licensing, CPV Wind, Texas, Michigan, Illinois, Pennsylvania**

Evaluated potential issues associated with development of five wind energy facilities (one in Texas, one in Michigan, two in Illinois, one in Pennsylvania). Issues included review of ecological factors (avian, bats, protected species, wetlands); cultural resources (historical, archaeological and tribal), and community issues (proximity of sensitive receptors and uses, land use planning issues). Based upon a review of secondary data and a site reconnaissance, critical issues were identified and a permitting plan developed.

**Cape Wind EIS, U.S. Army Corps of Engineers, Nantucket Sound, Massachusetts**

Principal-in-charge for a contract with the U.S. Army Corps of Engineers to provide third-party Environmental Impact Statement support for a proposed 420 MW wind park proposed to be located offshore in Horseshoe Shoal. Provided technical review and comment for sections focused on alternatives analysis, as well as baseline and impact evaluations for the full range of environmental disciplines.

**Permitting Plan Development for a Windpower Facility, Confidential Client, New York**

Prepared information outlining the licensing requirements associated with project development in upstate New York, including the SEQRA Act process. Provided oversight for preliminary licensing activities.

**Madison Wind Due Diligence Evaluation, Confidential Client, Madison County, New York**

Conducted due diligence review of an 11 MW wind farm located on approximately 145 acres in Madison County, New York for potential asset acquisition. Evaluated environmental licensing files, reviewed environmental site condition reports, and interviewed staff associated with the asset sale to identify potential environmental issues and opportunities associated with the project. Provided input to support the acquisition bid process for this and other assets in the fleet under consideration.

**Representative Natural Gas/LNG Facility Permitting Experience**

**Somerset LNG Facility, Somerset, Massachusetts**

Project manager for proposed liquid natural gas (LNG) import terminal co-located with the Brayton Point generating facility in Somerset, Massachusetts. Coordinated engineering studies for facility layout and design; conducted introductory meetings with regulatory agencies, community members and other key decision-makers; directed preparation of information for Federal Energy Regulatory Commission (FERC) resource reports for the full range of environmental issues; and initiated activities with the U.S. Army Corps of Engineers regarding a potential federal dredging project to support the proposed facility.

**Pipeline Permitting, Tenneco, New England**

Coordinated a long-term project involving supervision of surveying, deed researching and permitting for approximately 103 miles of natural gas pipeline in Massachusetts, New Hampshire and Connecticut. Scheduled, field work and permit applications; and performed quality control review of final product for submittal.

**Avoca Natural Gas Storage Project, U.S. Generating Company, Avoca, New York**

Assisted in permitting a proposed underground natural gas storage facility in upstate New York. As a part of this effort, permit review was performed to identify outstanding tasks to be completed for full compliance throughout all phases of project construction and operation. In addition, peer review was provided for several permit submittals, and assistance was provided during project due diligence efforts.

**Wallkill Natural Gas Pipeline, U.S. Generating Company, New York and New Jersey**

Managed Federal Energy Regulatory Commission (FERC) environmental submittals and related permits associated with a proposed 24 mile natural gas pipeline extending from the site of a proposed electric generating facility in Wallkill New York to an existing Tennessee Gas Pipeline Company compressor station in Wantage, New Jersey. Issues included concerns associated with potential impact to wetlands, a protected plant species, archaeological resources, a protected easement of the Appalachian Trail, and cold water fisheries. Community concerns were also addressed, including construction impact and effects of the proposed installation and clearing on nearby business owners.

**Gas Pipeline Extension, International Paper and Niagara Mohawk Power Corp., Oswego, New York**

Managed preparation and submittal of an Article VII application to the New York Public Service Commission describing a proposed gas pipeline extension to serve a cogeneration facility. Responsibilities included environmental resource field surveys, literature reviews, agency and community contact,

coordination of color graphics, text preparation, direct testimony in support of the document, and participation in interrogatory proceedings.

### **Representative Energy Facility Transactional Due Diligence/Audit Experience**

#### **Due Diligence and Audit Evaluations, Confidential Clients**

Conduct due diligence and audit review of numerous energy assets, including fossil-fired and renewable generating facilities, as well as LNG terminals. Frequently manage multi-staff teams to conduct an evaluation of environmental licensing files, review environmental site condition reports, and interview staff associated with the asset sale to identify potential environmental issues and opportunities associated with the project. Provide input to support the acquisition bid process, and frequently provide transition support following successful bids.

#### **Due Diligence Evaluation, Goldman Sachs, Nationwide**

Conducted due diligence review to support the Goldman Sachs acquisition of the Cogentrix and NEG T IPP assets. Both coal and natural gas fired facilities were evaluated. Evaluated facilities were located in Colorado, the Dominican Republic, Florida, Idaho, Louisiana, Massachusetts, Minnesota, Mississippi, North Carolina, New Jersey, New York, Oklahoma, Oregon, Pennsylvania, Virginia, and Wisconsin. This effort included fielding multiple teams to conduct site inspections; review of environmental permitting and compliance material; interviews with corporate and plant staff responsible for environmental, health and safety compliance; and preparing follow-up questions to allow identification of material issues for each facility. Environmental support for these assets continues on an as-needed basis.

#### **Madison Wind Due Diligence Evaluation, Confidential Client, Madison County, New York**

Conducted due diligence review of an 11 MW wind farm located on approximately 145 acres in Madison County, New York for potential asset acquisition. Evaluated environmental licensing files, reviewed environmental site condition reports, and interviewed staff associated with the asset sale to identify potential environmental issues and opportunities associated with the project. Provided input to support the acquisition bid process for this and other assets in the fleet under consideration.

#### **Fossil Facility Audits, Constellation Generation Group, Nationwide**

Principal-in-charge for multidisciplinary environmental audits at eight fossil fuel fired generating facilities representing a range of technologies. Facility audits considered federal and state regulatory programs (within the five states where facilities were located), as well as compliance with environmental management system programs. Recommendations were made for each finding. Worked closely with the client to refine findings categories and work towards a standardized evaluation and reporting procedure acceptable to all involved internal resources.

#### **Confidential Nuclear Facility Audit, Constellation Generation Group**

Principal-in-charge for conducting a resource-limited environmental audit at a nuclear generating facility. Findings were presented, along with regulatory citations and recommendations, to ensure both regulatory compliance and implementation of best management practices for the facility.

### **Other Representative Project Experience**

#### **Environmental Permitting Specialist, U.S. Generating Company, Nationwide**

As a member of the corporate environmental department, primary responsibilities included: management of permitting efforts, both for new projects and for existing operational facilities; direction of all Title V operating permit applications, company-wide; review of potential acquisitions to identify critical issues and determine appropriate actions; assessment of proposed greenfield or retrofit projects to identify opportunities and constraints, and to develop permitting plans; and strategic support for international development efforts.



**Salt Processing Facility, Cargill, Inc., White Marsh, Maryland**

Performed a critical flaw analysis associated with the planned expansion of a salt processing facility. A review of a wide range of environmental issues identified both benefits and constraints related to the on-site expansion of the existing facility. Regulatory implications of expansion at that site were also reviewed and presented for use in Cargill's decision-making process.

**Coal Technology Review, ABB Power Generation, Inc., Nationwide**

Managed an environmental review of pressurized fluidized bed combustion (PFBC) technology. The study identified environmental differences between PFBC and competing available technologies, and made conclusions regarding the permissibility of power generating projects utilizing PFBC. The project involved consultation with engineers to develop comparable data for each technology under consideration, a review of regulatory requirements in three representative locations in the United States, and an environmental screening to identify potential permitting concerns. The review concluded that, from a permitting standpoint, PFBC is a viable technology that does not pose significantly different permitting issues than other coal fired technologies.

**Semiconductor Facility Siting, Confidential Client, Nationwide**

Managed field data in a nationwide search for the ideal location to construct a semiconductor facility. Major responsibilities included demographic, climatic, and regional research; text writing and editing; production staff management; and presentation of the document to clients.

**Medical Waste Incinerators, Merck, Inc. and Hoffmann-La Roche, Inc., New Jersey**

Managed the preparation of two separate Environmental and Health Impact Statements (EHIS) as a part of solid waste permitting required for proposed medical waste incinerators within existing company complexes in New Jersey. The proposed facilities represent state-of-the-art replacements for existing incineration procedures. Through the EHIS documentation, environmental improvement over existing conditions was demonstrated.

**Pulp Mill Expansion, Cloquet, Potlatch Corporation, Minnesota**

Managed preparation of technical report documents and performed a detailed land use characterization for the proposed modernization and expansion of an existing pulp mill. The nine reports generated for use by the state in the compilation of a project Environmental Impact Statement addressed the following issues: air quality, health risk assessment, water quality, solid and hazardous wastes, transportation, noise, public services, and timber resources.

**Industrial Site Redevelopment, Zampelli Properties, Inc., Rockport, Massachusetts**

Worked with a local Citizens Advisory Committee (CAC) and State agencies to guide the redevelopment of an industrial site on Pigeon Cove in Rockport, Massachusetts. Presentations to the CAC identified and explained the various permits involved with site development to create a common basis for decision-making through the design process. Special issues relating to construction on former tidelands required particular consideration. Other areas of analysis included on-site wetland resources, traffic, drainage and utilities.

**Conservation Commission Workshop, Department of Environmental Protection, Massachusetts**

Over a period of five years, developed and conducted training workshops designed to guide Conservation Commission members through the regulatory process. The training was designed to simulate project review, and sought to provide an objective and realistic framework relevant to the diverse experience of Commissioners throughout Massachusetts.

**Boathouse Construction, Northeastern University, Brighton, Massachusetts**

Successfully completed regulatory consulting for the construction of a new boathouse facility on the Charles River. Early input in project design reduced environmental impacts to facilitate the permitting process. Permits obtained included MEPA approval, Wetlands Protection Act permit, Chapter 91 license, Army Corps of Engineers Section 10 Permit, and Water Quality Certification.

**Town of Shirley Conservation Commission, Chairman/Member, Massachusetts**

Served five years on the local Conservation Commission with responsibility for implementing state wetland regulations; chaired the Commission for two of those years.

**Land Use Planning, Shirley, Town of Shirley, Massachusetts**

Chair of public hearings to identify community goals for land acquisition, conservation and development as recreational resources and to incorporate action elements in an update of a 5-year plan. Wrote the revised report, coordinated graphics, and presented findings for approval at Special Town Meeting.

**Environmental Impact Reports, Multiple Clients, Massachusetts**

Senior project manager for the preparation and submittal of multidisciplinary Environmental Impact Reports under MEPA. Numerous projects managed for a wide variety of clients in locations throughout Massachusetts.

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Summary: Testimony of D. Lynn Gresock on behalf of Seneca Wind, LLC electronically filed by Teresa Orahod on behalf of Devin D. Parram