BEFORE THE OHIO POWER SITING BOARD

In the Matter of the Application of	**)**	
Nestlewood Solar I LLC	**)**	
for a Certificate of Environmental	**)**	**Case No. 18-1546-EL-BGN**
Compatibility and Public Need	**)**	

DIRECT TESTIMONY OF TRICIA PELLERIN

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

A.1. My name is Tricia Pellerin. I am a Senior Acoustical Engineer at Tetra Tech, Inc. ("Tetra Tech"). My business address is 160 Federal Street, Boston, MA, 02110.

Q.2. What is your educational and professional background?

A.2. I have a Bachelor of Engineering Science degree in Chemical/Biochemical Engineering and a Master of Engineering Science degree in Chemical/Biochemical Engineering from The University of Western Ontario where I graduated in 2005. I have also completed advanced noise modeling training for the CadnaA software with DataKustik in 2008 as well as noise control training for buildings, plants and equipment in 2006.

I have over 14 years of varied theoretical and field-practical acoustical consulting experience. I specialize in acoustical studies analyzing both underwater and air-borne noise as well as vibration impacts on the human and biological environments. Over the past 14 years I have worked on over 16 energy projects under the Ohio Power Siting Board's ("OPSB") jurisdiction including: Nestlewood Solar, Timber Road I Wind Farm, Timber Road II Wind Farm, Timber Road III Wind Farm, Timber Road IV Wind Farm, Firelands Wind Energy Project, Hardin County Wind Farm, Oregon Clean Energy Center, Oregon Energy Center, Trumbull Energy Center, Hannibal Port Power Station, Guernsey Power Station, Seneca Wind Farm, Carroll

County Energy Center, South Field Energy Center, and Lordstown Energy Center. I have also worked on numerous energy facilities, supporting them in the state and local regulatory processes, in locations nationwide.

I am trained and certified as an advanced user for the internationally recognized state-of-the-art CadnaA noise modeling software. I have extensive experience in developing large complex three-dimensional noise models for evaluating significant sources of noise and their related impacts to the environment. My noise modeling endeavors have included assessments of noise propagation associated with energy facilities, oil and gas operations, mining processes, soil remediation activities, construction equipment, and commercial & industrial facilities. My responsibilities include acting as a technical expert for acoustics and vibration, field investigation work, management of field teams, deployment of measurement equipment, management of data acquisition systems, data analysis, and conducting a proficient level of computer modeling applications and techniques. I have assisted clients with satisfying their permitting needs as prescribed by the OPSB, as well as other various governing international, federal, state and local noise and vibration compliance requirements. I have presented at the Acoustical Society of America ("ASA"), Institute of Noise Control Engineering ("INCE"), American Wind Energy Association, and Wind Turbine Noise conferences. I have also provided expert testimony on the subject of noise on more than seven occasions in front of county and/or state-level siting/commissioning boards.

Q.3. On whose behalf are you offering testimony?

A.3. I am testifying on behalf of the Applicant, Nestlewood Solar I LLC in support of its application filed in Case No. 18-1546-EL-BGN.

Q.4. Have you reviewed the Joint Stipulation filed in this case on June 12, 2019?

A.4. Yes.

Q.5. What is the purpose of your testimony?

A.5. The purpose of my testimony is to discuss the results of the acoustic assessment performed for the Project by Tetra Tech, which was included in the Application as Appendix F and to discuss how final design will be consistent with the conclusions of the acoustic assessment.

Q.6. Please describe the assessment included in the Application.

A.6. Tetra Tech completed a baseline sound survey to characterize the existing acoustic environment within the Project Area. In addition, although solar facilities are inherently quiet, an acoustic modeling analysis was conducted to review operational sound levels resulting from the Project at nearby noise sensitive areas. Tetra Tech collected sound data at three short-term measuring locations (ML-1, ML-2, and ML-3) and one long-term measuring location (LT-1) within or near the Project Area. The short-term measuring locations were selected to be representative of residential areas, and ML-1 is specifically representative of a landowner participating in the Project. The long-term measuring location is located at the site of the proposed Project substation. These measuring locations collected information on the equivalent sound level, or Leq, at those locations. The Leq represents the average sound level at a given location during the monitoring period.

To provide some context to the sound information gathered in the acoustic assessment, a sound level of 40 dBA is equivalent to a bedroom or quiet living room, and a sound level of 30 dBA is equivalent to a quiet library or soft whisper from 15 feet away.

Q.7. What are the background sound levels that currently exist in the Project Area?

A.7. Ambient sound levels in the Project Area exhibit typical diurnal patterns (i.e., daytime is louder than nighttime). Daytime Leq sound levels at the short-term measurement locations ranged from a low of 39 dBA at ML-1 to a high of 52 dBA at ML-3. Nighttime sound levels ranged from a low of 38 dBA at ML-1 to 43 dBA at ML-3. These results were consistent with the long-term measurement location, at which the daytime noise levels ranged from 36 dBA to 45 dBA and the nighttime noise levels ranged from 38 dBA to 39 dBA.

Q.8. How would operation of the Project affect the sound levels in the Project Area?

A.8. When the Project is producing energy in the daytime, the inverters and substation provide the primary sound sources. The contribution from Project operations would result in a barely perceivable change to the existing ambient noise levels during the daytime period. Energy is not being produced at night and noise levels during the nighttime period would be minimal. As a part of the acoustic daytime assessment, a representative Project general arrangement was reviewed and directly imported into an acoustic model. The presumed locations for potential noise-generating equipment (the inverters, substation transformers, and track motors) within the potential layout area were presented in Figure 2 in Application Appendix F. Input sound power levels for the various equipment were conservatively estimated based on information from equipment manufacturers, contained in reference documents, or developed using empirical methods. The results of the acoustic model (Appendix F, Table 7 and Figure 3) show a maximum increase in sound during the day of 5 dBA at a single monitoring location (the participating landowner represented as ML-1), a 3 dBA increase at two monitoring locations (ML-2 and LT-1), and no increase at the final monitoring location (ML-3).

Q.9. What does the modeling tell us?

A.9. The noise levels generated by the Project are predicted to range from 36 dBA at ML-3 to 42 dBA at ML-1. The modeled increase of 3 dBA at non-participating residents is generally considered to be a change that is difficult to perceive and is therefore not anticipated to create any adverse impact.

Q.10. How does final design have the potential to influence projected sound levels?

A.10. The two Project elements that could produce any measurable sound are the substation and the inverters. The Project has flexibility to maintain distances similar to those modeled in the Application or in other locations that will result in sound level increases that are no greater than 5 dBA over the measured ambient presented in the Application at non-participating residences. Therefore, it is expected that sound levels similar to those reflected in the Application will result from operation of the Project.

Q.11. What is your overall conclusion regarding the potential operational noise impacts of the Nestlewood Solar Project?

A.11. Project operation will result in low level sound even at the participating residential location within the Project Area. Because the Project sound levels are either below or do not significantly exceed the background sound levels no adverse impact is anticipated. A change in ambient levels of 3 dBA, as is indicated for non-participating landowners, is considered barely perceivable. Given the results of the modeling in the Application, the Project equipment has flexibility to be installed in alternate locations, while resulting in no adverse impact and minimal changes to offsite ambient sound levels.

Q.12. Did the acoustic assessment evaluate noise during the construction of the Project?

A.12. Yes. In addition to operational sound, a certain amount of unavoidable noise will be generated during construction of the Project. Depending on the type of construction being

performed, noise levels can vary. Construction of the Project will occur over a relatively brief period (approximately 10 months) and construction machines operate intermittently. In addition, construction in any particular location will be short-lived. Because of the temporary nature of the construction noise, no adverse or long-term effects are expected. In addition, Joint Stipulation Condition 10 limits the hours of general construction and more strictly limits the hours of noise-producing construction activities including impact pile driving:

> General construction activities shall be limited to the hours of 7:00 a.m. to 7:00 p.m., or until dusk when sunset occurs after 7:00 p.m. Impact pile driving shall be limited to the hours between 9:00 a.m. and 7:00 p.m. Monday through Friday; hoe ram and blasting operations, if required, shall be limited to the hours between 10:00 a.m. and 4:00 p.m., Monday through Friday. Construction activities that do not involve noise increases above ambient levels at sensitive receptors are permitted outside of daylight hours when necessary. The Applicant shall notify property owners or affected tenants within the meaning of Ohio Adm. Code 4906-3-03(B)(2) of upcoming construction activities including potential for nighttime construction.

These time limitations and the fact that construction activities move around the site and are not concentrated in any one area for a long period of time should reasonably minimize any impact.

Q.13. Does this conclude your direct testimony?

A.13. Yes, it does.

CERTIFICATE OF SERVICE

The Ohio Power Siting Board's e-filing system will electronically serve notice of the filing of this document on the parties referenced in the service list of the docket card who have electronically subscribed to this case. In addition, the undersigned certifies that a courtesy copy of the foregoing document is also being served upon the persons below via electronic mail this 10th day of February 2020.

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Summary: Testimony Direct Testimony of Tricia Pellerin electronically filed by Mr. MacDonald W Taylor on behalf of Nestlewood Solar I LLC