

Appendix 19-9:

Sound Monitoring and Compliance Protocol

EXCELSIOR ENERGY CENTER

NY SITING BOARD CASE NO 19-F-0299

SOUND TESTING COMPLIANCE PROTOCOL

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1) BACKGROUND

The proposed Project is being developed by Excelsior Energy Center, LLC (the “Applicant” or “Excelsior Energy Center”), which is a wholly-owned indirect subsidiary of NextEra Energy Resources, LLC. The proposed Facility consists of the construction and operation of a commercial-scale solar power project, including the installation and operation of solar panel arrays, inverters, battery energy storage systems, and a collector substation, together with the associated collection lines, access roads, and switchyard. The solar panels and related facilities will be sited within privately-owned leased land and will have a generating capacity of 300-megawatts (MW).

To deliver electricity to the New York State power grid, Excelsior Solar Energy Center proposes to construct a collection substation, and a switchyard. The collection substation and switchyard will be located in the same area of the Project, west of Caswell Road and south of Ebb Road.

The Applicant anticipates that any Certificate issued by the Siting Board will include regulatory limits and design goals for this Facility, as it relates to noise and vibration impacts. The purpose of this protocol is to outline how adherence to regulatory limits and certificate conditions will be demonstrated, both as a matter of routine post-construction testing and to address specific complaints made through the complaint resolution process outlined in the Applicant’s “Noise Complaint Resolution Plan.”

2) SOUND INSTRUMENTATION

- a) Sound Level Meters (SLMs): All sound level measurements will be conducted using Type-1 integrating SLMs that meet the requirements of ANSI S1.43-1997(R 2007) “Specifications for Integrating-Averaging Sound Level Meters”. Where noted, Type-2 SLMs complying with ANSI/ASA S 1.4- 1983(R 2006) or ANSI S1.43-1997(R 2007) can be used. Alternatively, sound level measurements will be conducted using Type-1 integrating SLMs that meet the requirements of ANSI/ASA S1.4-2014 / Part 1 / IEC 61672-1-2013.
- b) One-Third Octave Band Analyzers: The instruments will have Class-1 one-third octave-band analyzers that meet ANSI S1.11-2004 (R2009) “Specification for Octave- Band and Fractional-Octave-Band Analog and Digital Filters”. Alternatively, the instruments will have Class-1, one-third octave-band analyzers that meet ANSI S1.11-2014/ Part 1 / IEC 61260-1: 2014.

3) NOISE DESCRIPTORS, WEIGHTING, RESPONSE, AND OTHER SETTINGS

- a) Broadband Descriptors: The sound levels of the Leq and L90 broadband descriptors at the residential positions shall be recorded and reported in 10-minute intervals. Additional broadband descriptors may be collected, but are not required.
- b) One-Third Octave Band Descriptors: The Leq and L90 noise descriptors shall also be recorded at selected residential positions for the One-Third Octave Bands of interest (as specified in section 3(c) of this protocol) and included in the sound compliance test report in 10

minute intervals.

- c) Frequency Ranges of Interest: All one-third octave band measurements will include the frequencies from 12.5 Hz through 10,000 Hz. Any full octave band measurements will include the frequencies from 16 Hz through 8,000 Hz.
- d) Weighting: Broadband sound levels shall be reported by using the A-weighting scale in the frequency range of interest. Full Octave Bands and One-third Octave Band levels shall be reported by using the Z, Linear or un-weighted scale.
- e) Statistical Noise Descriptors Response: The response for determination of any statistical noise descriptors will be set to "Fast".
- f) Settings: All SLM settings will be reported.

4) CALIBRATION REQUIREMENTS

- a) Laboratory Calibration: Each SLM and calibrator will have undergone laboratory calibration within two years prior to its use for any sound compliance test. Copies of the calibration certificates will be included as an appendix to the sound compliance test report.
- b) Field Calibration: If operators are present, the SLMs will be acoustically calibrated (sensitivity check) in the field at a minimum immediately before the operational sound testing period, and before and after any background sound testing period, according to the procedures given in the SLM instruction manual. Otherwise, SLM's will be calibrated every time operators visit the measurement locations, and at a minimum before and after any sound collection survey.
- c) Field calibration differences:
 - i) If the calibration level after a sound collection differs from the previous calibration level by ± 0.5 dB or less, all measurements made with that system shall be adjusted by one-half of the difference. Differences lower than or equal to 0.2 dB are exempt.
 - ii) Collected data with a difference between the initial and the final calibration exceeding ± 0.5 dB will not be used, and sound collections performed showing such difference will be repeated. In such cases, equipment shall be checked.
 - iii) Any difference between the acoustical calibrator reference sound level and the SLM calibration reading will be reduced to zero by adjusting the SLM sensitivity in the field, prior to any sound collection.
 - iv) The calibration sound level results will be documented and reported.

5) WEATHER AND TESTING CONDITIONS

- a) Sky cover and solar radiation or cloud height will be documented with weather information from the most representative (as related to those conditions at the Facility site) National Weather Station or airport's weather advisory service.

- b) Wind speed will be measured at 2 meters +/- 0.20 meters above the ground at all locations to be tested.
- c) Portable weather stations will be located close to the sound microphones, as far as practical from any wind obstructions or vegetation that may affect the wind speed measurements.
- d) Reasonable efforts will be made to schedule sound tests during a period of time when representative conditions (as related to the noise descriptors that need to be evaluated) are forecasted but, in all cases, such tests shall be performed during the weather conditions described in this Protocol.
- e) Evaluation of maximum short-term noise limits will be conducted under the worst operational noise emissions (maximum sound power levels). For a solar facility, this will require monitoring to occur during daytime hours with direct sunlight on the panel arrays, and clear skies.
- f) Sound testing will not be conducted during adverse weather conditions such as rain, thunderstorms in the vicinity, snow fall, or under wet road conditions. Any data collected under these conditions will be discarded.

6) TESTING POSITIONS

- a) Sound testing will be conducted at a minimum of four (4) most potentially impacted positions based on results of acoustic modeling and complaints, if any. Sound testing will be conducted at two participating residential positions and at two non-participating residential positions if access to the property is granted.
- b) Sound microphones will be located at a height of 1.5 meters above the ground.

7) MEASUREMENT PROCEDURES

- a) Sound testing will be conducted for a minimum of 10 minutes at each location, and the measured sound levels will be compared to the applicable short-term noise design goals.
- b) If a prominent discrete tone is measured, a 5 dB penalty shall be applied to the measurement.
- c) If necessary, a background sound level measurement will be performed in order to determine the "project-only" sound level contribution.