Public Service Commission of Wisconsin

PROTOCOL FOR NOISE ASSESSMENT OF PROPOSED AND EXISTING ELECTRICAL POWER PLANTS

September 24, 2025

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1.0 OBJECTIVES

The primary objectives of this protocol are:

1. To measure and characterize the existing sound and vibration environment within the area of the proposed development.
2. To predict the incremental increases in sound and vibration levels that would occur due to the operation of the proposed development.
3. To assess whether the predicted incremental increases in sound and vibration levels are reasonable.
4. To verify compliance with applicable sound and vibration limitations by taking post-construction measurements.

2.0 PSC WISCONSIN STAFF CONTACT

Please contact Public Service Commission of Wisconsin (PSCW or Commission) staff with any questions on this content. Consult with staff prior to conducting any studies under this Protocol.

Visit the PSC website at: https://psc.wi.gov/Pages/ForUtilities/Energy/FilingRequirements.aspx for information. Initial questions can be directed to the Environmental Review Coordinator listed on that website.

3.0 INTRODUCTION

The potential noise and vibration impacts associated with the operation of electrical generation stations are often a concern for citizens located nearby. This is especially true for power generation facilities located near residences[1], schools, and hospitals ("sensitive receptors").

Impact assessments are a highly technical undertaking and require expertise to collect, model, and report meaningful information to support public understanding and regulatory decision-making.

3.1 PURPOSE AND SCOPE

The purpose of this protocol is to establish a consistent and scientifically sound procedure for estimating noise impacts pursuant to projects seeking a:

- Certificate of Public Convenience and Necessity (CPCN) application under Wis. Stat. § 196.491 and Wis. Admin. Code ch. PSC 111.53 – CPCN applications for large electric generating facilities, or a
- Certificate of Authority (CA) under Wis. Stat. § 196.49.

The PSCW expects that the following guidelines are followed for developing a reasonable and defensible estimate of project noise. First, the project area's existing soundscape is characterized through background sound monitoring. This soundscape includes other nearby energy facilities and other sources of community noise. Second, the facility is modeled to predict its expected maximum operational sound levels at sensitive receptors. The existing soundscape and modeled project sound levels are used, in part, to assess the project noise impacts (see Section 3.3, below). Following an approved application and construction of the facility, a postconstruction study may then be conducted to assess the accuracy and representativeness of the impact assessment.

3.2 PSC 111

Ch. PSC 111, Wisconsin Administrative Code regulates electrical generation systems. Subchapter VI addresses CPCN applications, noting in PSC 111.53 (1)(f)(7)(g) that the "visual and noise impact" must be addressed in the CPCN application.

PSC 111 does not define a sound level limit, sound level metric, or averaging time that would apply. Thus, a framework for determining facility noise impacts of a given project is provided in Section 3.3.

[1] Residences are any structure with an approved septic system for human habitation and include single and multi-family homes, mobile homes, senior living communities, and rehabilitation facilities.

3.3 NOISE IMPACT FRAMEWORK

This section provides a framework to assess noise impacts at sensitive receptors. The information developed using this framework can inform the application submitted to the Commission for a CA or CPCN and assist the Commission in evaluating the scale of those impacts. The framework has two parts, which are outlined below.

1) **Identify where the project is anticipated to create increased noise impacts for nearby sensitive receptors.**

An increase in audible noise at one or more sensitive receptors indicates increased noise impacts from the project. For this framework, increased audibility refers to:

- An increase in sound generated from an existing facility.
- The introduction of a novel or other sound, such that specific frequencies of the new sound would be audible at the sensitive receptor.

It is not possible to determine the audibility of project noise at all times and all places during the future operation of the facility since background noise changes constantly and the hearing ability of the listener cannot be known in advance. Because of this, audibility can be assessed here by comparing the project generated sound to the residual background sound level by 1/3 octave band. If the project sound is greater by 3 dB or more in any 1/3 octave band, then the project would be considered audible for the purposes of this section.

If the project is anticipated to create increased noise impacts at any sensitive receptors, the second part of the framework is triggered.

2) **Provide a narrative description of the anticipated noise impacts of the project.**

This second part of the framework should be addressed if:

1) The project is anticipated to create increased noise impacts at any sensitive receptors according to Part 1, above, or
2) The existing facility (if any) has generated unresolved noise complaints, or
3) Sound from the facility is greater than 55 dBA L_{eq} during the day or 45 dBA L_{eq} at night at any sensitive receptor, whether or not it represents increased noise impacts.

An assessment and characterization of the anticipated project noise impacts should take into account the following questions:

a) Would the project produce noise in excess of any clearly written community standards?

   Consider village, town, county, state, and federal noise standards which directly apply to the project. If a project cannot reasonably mitigate to meet any standard or ordinance directly applicable to the project, then the Application should provide a discussion on why local standards should be waived by the Commission.

b) Could the sound levels or noise characteristics offend the sensibilities of individuals working or living nearby? Provide discussion on this considering other noise standards and guidelines that are not directly applicable to this project. Also consider other ways noise can impact people:

- To what extent will the project noise dominate the existing soundscape?
- Would the project generate excessive low-frequency noise? For example, ANSI S12.9 Part 4 – Annex D provides guidance for sounds with strong low frequency content. Specifically, outdoor octave band sound levels at 16 Hz and 31.5 Hz should be less than 65 dBZ and at 63 Hz should be less than 70 dBZ.
- Would the project nighttime noise levels have the potential to disturb sleep at any neighboring residences? Discuss in the context of sleep disturbance guidelines in the literature, such as those from WHO, WHO Europe, and the U.S. EPA.

c) Could the applicant implement reasonable actions to mitigate the noise impacts?

The use of reasonably available noise control should be discussed even if the local noise limits are met. Consider alternative locations for the project or specific noise sources within the project. Consider noise control approaches that could be applied to reduce noise impacts. Such technologies could include, but are not limited to berms, barriers, enclosures, walls, operational changes, site layout alternatives, mufflers, silencers, low- or lower-noise products, low-impact backup alarms (e.g. “white noise” or radar-controlled”), sound absorption to prevent reflections, and active noise control. Good-neighbor agreements may also be considered. The determination of “reasonableness” may take into account whether technologies are typically found on similar facilities, cost, effectiveness, operational impacts on other parts of the project, aesthetics, and feasibility of construction.

4.0 PRECONSTRUCTION NOISE IMPACT ASSESSMENT

The layout of the proposed development and the features of the surrounding environment, including geography, local sound sources, and sensitive receptors must be taken into consideration when designing a noise study. It will be necessary to hire a qualified consultant to conduct the noise study.[2]

The preconstruction noise impact assessment will include both sound propagation modeling and background sound monitoring. A brief Preconstruction Sound Assessment Protocol must be provided to Commission staff prior to deploying preconstruction sound monitoring outlined herein.

4.1 SOUND MODELING

Sound modeling shall be conducted for the project to estimate project sound levels in the surrounding community.

Modeling shall be completed following the requirements of ISO 9613-2 (2024), "Engineering method for the prediction of sound pressure levels outdoors". Based on the standard, the required settings of sound propagation model for power plant noise include:

- Ground factor: G = 0.0 over water and large areas of hard ground, G = 0.5 everywhere else
- Modeling uncertainty adjustment ≥ 0 dB
- Receptor/grid height = window height at an occupied building (e.g. 1.5 m for one story, 4.0 m for two story, etc.), 1.5 m everywhere else
- Temperature = 10°C, Relative humidity = 70%

All sensitive receptors within 1 mile of any facility sound source or within the 35 dBA contour line shall be included in the model, whichever is greater.

No foliage attenuation shall be considered unless the foliage is on the applicant property and dense enough to block the line of sight between the source and receiver during both summer and winter.

The project substation and any related facilities, e.g., battery energy storage, shall be included in the sound model. Substation transformers, and any other tonal source, should assume a +5 dB tonal penalty [Ref 3] unless it can be shown that the source is not tonal at the receiver.

[2] Board Certification through the Institute of Noise Control Engineering is recommended. A professional engineering license without experience in noise control engineering is not a suitable qualification to conduct these noise analyses. The qualifications of the preparer should be spelled out in the application and postconstruction sound monitoring reports, if any.

Other energy facilities that are operational or have an application submitted prior to a given project within two miles of the closest component of the facility must be included in a separate cumulative impact model run of the model. Consult Commission staff for guidance if sound emissions data for other energy projects (combined cycle, wind, battery energy storage, etc.) is not available or cannot be adequately estimated.

Sound Level Metrics

The modeling should reflect the maximum continuous operating sound levels separately for daytime and nighttime. In addition, intermittent sources that generate sound levels higher than the maximum continuous operating sound levels should be modeled separately.

Sound propagation modeling consistent with ISO 9613-2 predicts the equivalent sound level (L_{eq}). Continuous sound sources (e.g., power generator, cooling towers, and air separation units) are most appropriately expressed by the L_{eq}. Acceptable assessment periods are 10 minutes and one-hour, i.e. L_{10min} and L_{1h}.

Sporadic and intermittent noise sources (e.g., rail cars, fuel delivery/waste removal trucks, steam blow-off) are better represented using a percentile metric like L_1, representing the highest 99^{th} percentile of sound over an assessment period. Sound levels expressed as an instantaneous maximum (L_{max}) should not be modeled or reported.

Sound Power Determination

To model the sound from the facility, the sound power level of the facility or components of the facility must be determined. The complex nature of energy production facilities means that multiple noise sources may be operating at different intervals, locations, and conditions throughout the site.

Sound power levels can be determined from manufacturer data or from measurements of the same or similar equipment.

The determination of sound power levels from sound pressure level measurement should be made consistent with the appropriate ASA/ANSI S12.50 series standard or similar national or international standard for the particular equipment being measured (such as IEEE C57.12.90 for transformers). Use caution when estimating sound power levels made when the sound pressure levels are made close to the source where point source propagation assumptions do not apply.

Construction Noise

Noise generated by construction at a site will generate noise impacts. If major construction is anticipated to last more than a year or involve pile driving or other intrusive impact or tonal sounds, then it should be evaluated and discussed in the application.

4.2 BACKGROUND SOUND LEVEL MONITORING

For background sound monitoring, unattended continuous sound level measurements are encouraged to quantify existing sound levels under different meteorological conditions, and operating conditions (if applicable). The collection of at least seven days of non-holiday data is recommended.

For sites with existing electric generation facilities, the impact of existing facilities should be quantified. This can be accomplished with modeling or monitoring.

Preconstruction Sound Monitoring Protocol

A brief Preconstruction Sound Assessment Protocol will be provided to Commission staff prior to deploying preconstruction sound monitoring.

The Protocol shall include details on:

1) Intended monitoring schedule
2) Modeled sound levels[3]
3) Monitoring locations. Nonparticipating sensitive receptors with highest modeled sound levels are preferred, a description of why each location is selected should be included
4) Equipment setup and data collection (sound level meter class, calibration methods, windscreens, logging intervals, criteria for acoustically valid periods, etc.), and
5) Data analysis (data aggregation, anomaly scrubbing methods, etc.).

Equipment

Sound level meters shall meet the ANSI/IEC Class 1 performance requirements (i.e., IEC 61672-1 and ASA/ANSI S1.4 Part 1) and log 1/3 octave band equivalent sound pressure levels. The microphone shall be protected by a 7-inch diameter hydrophobic windscreen or equivalent. Qualitative sound recordings of the ambient noise environment should also be collected for the duration of the measurements.

Each sound level meter shall be field-calibrated with a calibrator meeting the requirements of IEC 60942 Class 1 immediately before the monitoring period and after each data download and/or battery change. Any calibration drift above 1 dB shall be noted and addressed with respect to ASA/ANSI S12.18. Each sound level meter and field calibrator shall have been calibrated within two years and one year, respectively, of the completion of monitoring by a National Institute of Standards and Technology traceable facility.

[3] It is understood that the project layout may change after sound monitoring is completed. This could affect the worst-case receptors. Preconstruction monitoring does not need to be repeated if there are minor changes in layout.

Anemometers must be located adjacent to each monitoring station at microphone height to measure wind speed [Ref 2].

Siting

At a minimum, sound level measurements should be taken at three locations or measurement points. Because each project is unique, more than three measurement points may be necessary, particularly for larger projects.

Measurement points shall be selected to provide information on sensitive receptors in the area, particularly areas with private residences and public areas. Siting near sensitive receptors with the highest modeled sound levels from the future facility shall be given priority, if the layout of the facility is already known. At least two locations should be at the project fenceline. If the project site is to be expanded in order to accommodate new equipment then the location of the new site fence should be taken into consideration.

Preconstruction monitoring locations should be analogous to and applicable for the postconstruction study, to the extent possible.

The measurement points shall be outdoors and acoustically representative of nearby sensitive receptors. Specifically, monitoring equipment shall, to the extent practically possible, be placed at a similar distance from prominent soundscape sources such as roadways, heavy vegetation, and stationary equipment. The microphone shall either be façade mounted or in the free-field at least 25 feet from any building, and approximately 1.2 m to 1.5 m above ground level [Ref 2]. Adjustments for façade mounting can be made according to ASA/ANSI S12.9 Part 3. All measurements points should be located so that no significant obstruction (building etc.) blocks sound and vibration from the site.

Figure 1 provides an example for adding an additional generator to an existing site and would be equally applicable if it is a new facility. As shown in Figure 1, for sites with gas turbines, MPs should generally be located as follows:

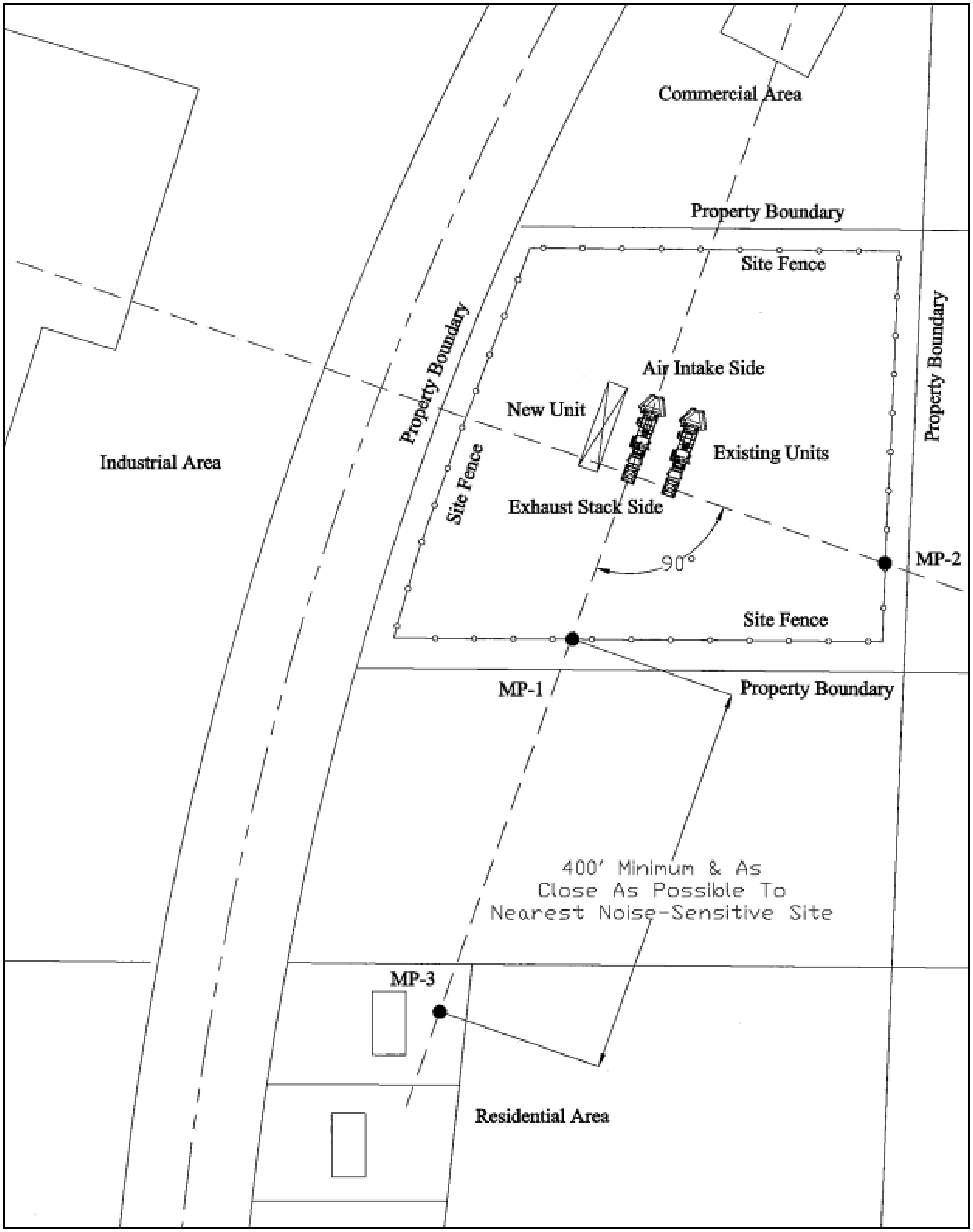
a. MP1 should be established at the site fence, in line with the gas turbine(s). Try to locate MP1 closest to the exhaust stack(s) and closest to the most frequently used generator. If the existing generation is not a combustion turbine, then MP1 should be located at the site fence nearest the principal sound and vibration source.

b. MP2 should also be located along the site fence. Locate MP2 at a point 90 degrees, with respect to the existing generators, from MP1. If possible, locate MP2 where the ambient sound level is likely to be the least.

c. MP3 should be located 400 feet from MP1 and on a line extending through the existing turbines and MP1. MP3 must be located away from as many ambient sound and vibration sources as possible.

d. Additional MPs should be located as close as possible to the nearest sensitive receptors.

FIGURE 1: EXAMPLE SITING OF SOUND MONITORS



Data Analysis

Logged monitor data should be aggregated into daytime (7 am to 7 pm), nighttime (7 pm to 7 am), and overall metrics, (L_{eq}, L_{10}, L_{50}, L_{90}) and also represented as a time history at an appropriate interval (e.g., 10-minute or 1-hour).

Data Exclusions

To ensure an acoustically valid dataset, periods during which any of the following conditions occur shall be excluded from analysis [Refs 2, 4]:

- High wind gusts – ground-level wind gust speeds above 5 m/s (11.2 mph).
- Precipitation – snow, rain, and thunderstorm events identified through regional data and inspection of acoustic data.
- Anomalies – The presence of short-term contaminating sound caused by human or other activity that is atypical of the site, directly attributable to the presence of the equipment, or seasonal.
- Temperature or humidity outside the specification of the sound level meter or microphone.

If more than half an aggregated period was not acoustically valid, (due to high winds or precipitation, for example), the entire period should be excluded from the analysis [Ref 2].

Biogenic Sound

Biogenic sounds (particularly insects, birds, and amphibians) are typically tonal and can have a pronounced effect on overall A-weighted sound levels. If biogenic sounds are a dominant aspect of the soundscape during monitoring, their influence on overall sound level should be quantified.

The “ANS” frequency-weighting (ASA/ANSI S12.100) should be applied to spectral sound levels to filter out high-frequency biogenic sound. ANS-weighting filters out sound above the 1 kHz octave band. Ideally, ANS weighting should only be used when tonal sounds, indicative of seasonal biogenic sound, are detected.

When the effect of biogenic sound is significant, that is, the overall A-weighted sound level is at least 3 dB greater than the ANS-weighted sound level, then both A-weighted and ANS-weighted sound level results shall be reported.

Documentation to Submit

A preconstruction noise impact assessment study shall include, but is not limited to, the following:

1) Facility Description

   a. Maps and descriptions of sources and monitoring locations, including the distance from each monitor to the nearest facility equipment, the location of existing infrastructure (i.e., roads, major transmission lines, gas pipelines, etc.).
   b. Detailed description of all noise mitigation used, if applicable, and include an estimate of the number of hours of operation expected from the proposed generator(s) and under what conditions generators would be expected to run.
   c. Indicate whether the plant will be used for peak, intermediate, or base load operation.

2) Sound Monitoring Results
   a. Narrative description of the soundscape, i.e., diurnal fluctuations, common sources of sounds, anthropogenic vs. biogenic sounds, etc.
   b. Summary of overall day and night A-weighted sound level metrics (L_{eq}, L_{10}, L_{50}, and L_{90}).
   c. Overall A-weighted time history sound levels (L_{eq}, L_{10}, L_{50}, L_{90}) and meteorological data at the monitoring stations
   d. ANS-weighted results for the above, if substantive biogenic sound is found.

3) Sound Modeling Results
   a. Model configuration and inputs.
   b. Sound power level source data for the facility at full capacity (by 1/1 or 1/3 octave band, if available). If these are marked as confidential by the manufacturer, then these can be sent to Staff under a protective agreement.
   c. Maps of sound level isolines depicting the sound level contribution of the Project to the surrounding area in 5 dB increments, extending out to the 30 dBA contour.
   d. Table of sound level representing the maximum 10-minute L_{eq} at each sensitive receiver within 1 mile of the facility. The table should also include an assessment of low frequency octave bands from 16 Hz to 125 Hz.
   e. Tables showing the results for the cumulative analysis of other nearby projects.

4) Noise Impact Framework Discussion - A discussion section of the report should include a narrative assessment of the facility's noise impacts and statements regarding the project's ability to meet any applicable local noise limits and a description and characterization of the anticipated noise impacts to sensitive receptors as described in Section 3.3.

Postconstruction Sound Monitoring Protocol

A Postconstruction Sound Monitoring Protocol shall be developed by the applicant to adequately describe the facility's operational sound levels and identify compliance with any applicable local noise limits and PSCW certificate conditions. The sound monitoring should be planned following the guidance in Section 5.0. The Protocol shall include details on:

1) Intended monitoring schedule
2) Monitoring locations (final monitoring locations may be adjusted due to facility siting changes after the project is permitted and to accommodate noise complaints)
3) Equipment setup (sound level meter class, calibration methods, windscreens, etc.)
4) Data collection (including logging intervals, meteorological and operational criteria for valid periods, minimum number of valid periods, background measurements, etc.)
5) Data analysis (including background correction methods, data scrubbing methods, tonality assessments, etc.), and
6) Noise complaint response and resolution process.

5.0 POSTCONSTRUCTION NOISE STUDY

Within twelve months of the date when the project is fully operational, sound level measurements adhering to the postconstruction Protocol submitted with the project application or as defined in a PSCW certificate, shall be completed if required by the Commission.

5.1 DESCRIPTION

The recommended methodology described in this guidance includes scheduled facility shutdowns to allow for the subtraction of background sound levels. If the facility cannot be shutdown, operational levels will be compared to prior background measurements from similar sites, if applicable. Similarly, if the facility is collocated with another plant that cannot be shut down, the study can determine the portion of received sound from the current facility.

5.2 METHODOLOGY

If the facility operates during the day and night, the postconstruction study shall focus on nighttime operation because background sound (particularly anthropogenic and avian activity) is typically lowest and meteorological conditions for robust propagation of sound are most common. Equivalent or similar locations used in the preconstruction study would be used as receptors in the postconstruction monitoring (see Figure 1 in Section 4.2). In addition, representative complaint locations can be added.

The purpose of the shutdowns is to compare periods with the project operating to similar periods without the project operating to determine the sound levels attributable to the project. If they are sufficiently similar, the background period can be assumed to be representative of the background conditions up to an hour before and after the shutdown period, which also includes the direct comparison of preconstruction sound levels to postconstruction sound levels if facility shutdowns are not possible.

From logged data for each monitor, data from each evaluation period (e.g. 10-minute or 1-hour) are aggregated to express the following:

- Overall A-weighted L_{eq}
- Unweighted 1/3 octave band L_{eq} for the assessment of tonality
- Unweighted 1/1 octave band L_{eq} at 16 Hz[4], 31.5 Hz, and 63 Hz for the assessment of noise-induced vibration
- Average wind speed and maximum wind gust at microphone height

[4] Measurements at 16 Hz are required only in response to vibration complaints. In such cases, a wind screen designed for infrasound measurements should be considered and/or limits to ground wind speed to reduce pseudonoise.

- Wind direction
- Facility operation parameters

5.3 TARGET EVALUATION PERIODS

To qualify as a potential measurement of the maximum project sound, each period (e.g., 10-minute or one-hour) shall meet the target evaluation criteria:

- Data is acoustically valid (i.e. at least half not excluded for wind gusts, precipitation, or anomalies);
- Facility is operating at maximum sound emissions for each condition (e.g., for two gas turbines, each one should be run individually and then both together for three discrete measurements); and
- Average wind speed at microphone level is below 4 m/s and one minute wind gusts are below 5 m/s.

Ensuring that sound level data is free from anomalous and transient data during the target evaluation periods is critical to ensuring the accuracy of the study. Anomalous data shall be excluded from background and turbine operation periods.

To calculate the sound from the project, the background L_{eq} shall be logarithmically subtracted, on a 1/3 octave band basis, from the L_{eq} during operation, as described at the beginning of this section (ANSI S12.9 Part 3 Section 7).

At least six periods meeting the target evaluation criteria maximum valid L_{eq} periods must be collected. The highest facility L_{eq} shall be used for comparison to local noise limit(s) or permit conditions, as applicable.

5.4 DOCUMENTATION TO SUBMIT

A sound monitoring report shall be submitted within 60 calendar days of the end of the field data collection. If additional time is required, a request must be made to Staff with the reason why an extension is required.

A postconstruction noise study shall include, but is not limited to, the following:

1) Facility Description - Maps and descriptions of relevant project components and nearby features of interest, including the nearest sensitive receptors, noise complaints, and monitor locations. The distance from each monitor to the nearest equipment shall be noted.
2) Overall Results Narrative
    a. Narrative description of the soundscape, i.e., diurnal fluctuations, common sources of sounds, anthropogenic vs. biogenic sounds, relative presence of project noise in the soundscape, etc.

b. Summary of overall day and night A-weighted sound level metrics (L_{eq}, L_{10}, L_{50}, and L_{90}).

c. Overall A-weighted hourly sound level time histories for Leq (e.g., L_{10min}. or L_{1h}). The L_{90}, L_{50}, and L_{10} sound level metrics can also be included in the time history.

d. ANS-weighted results for the above, if substantive biogenic sound is found.

e. Ground-level wind speed and rainfall.

f. Facility operational data (e.g. power output).

3) Results for Evaluation Periods - For each evaluation period, provide (in the report or in electronic format):

a. Facility output.

b. Average wind speed and maximum wind gust from the monitor anemometer.

c. Temperature and relative humidity (onsite or from the nearest National Weather Service station).

d. Unweighted 1/3 octave band and overall A-weighted sound levels.

e. Determination of whether the period is acoustically valid and qualifies as a target evaluation period.

f. For target evaluation periods, provide a tonality evaluation, and the background-corrected facility 1/3 octave bands and overall A-weighted sound level.

If results of the postconstruction study indicate that the facility sound levels exceed the noise design goals, planned mitigation measures shall be detailed in the report along with a schedule of implementation. Upon implementation of mitigation measures, the sound measurements shall be repeated under similar conditions as the exceedance(s), with the updated results filed to the docket.

5.5 DATA REQUESTS

Upon the request of PSCW Staff, all sound monitoring data and results shall be submitted in electronic format. If necessary, confidential data may be submitted with a confidential protective order.

6.0 REFERENCED STANDARDS

This protocol is based on current national and international standards, including,

1. ASA/ANSI S1.4/Part 1 (2014) IEC 61672-1 (2013). Electroacoustics – Sound Level Meters – Part 1: Specifications
2. ASA/ANSI S12.9-2013 Part 3 (2023). Quantities and Procedures for Description and Measurement of Environmental Sound — Part 3: Short-term Measurements with an Observer Present
3. ASA/ANSI S12.9-2021 Part 4 (2021). Quantities and procedures for description and measurement of environmental sound — Part 4: Noise assessment and prediction of long-term community response.
4. ASA/ANSI S12.18 (1994). Outdoor Measurement of Sound Pressure Level.
5. ASA/ANSI S12.100-2014 (2014). Methods to Define and Measure the Residual Sound in Protected Natural and Quiet Residential Areas.
6. IEC 60942 Ed. 4 (2017). Electroacoustics – Sound Calibrators.
7. ISO 9613-2 (2024). Acoustics — Attenuation of sound during propagation outdoors — Part 2: Engineering method for the prediction of sound pressure levels outdoors.

If individual standards have been updated since the date of this publication, please consult with staff before using.

7.0 REVISION HISTORY

Revisions added February 7, 2002

- Revision History section added.
- In Table 1, typographical error corrected in fourth column, "200'" changed to "2000.'"
- Footnotes converted to endnotes.
- In section II.C.1, added "16" to list of octave bands.
- Added endnote regarding the 16 Hz center frequency octave band measurements in every place where that measurement is mentioned.
- Changed section II.C.4 to require predictions of changes to noise levels at the measurement points from the ambient noise study. The previous language required predictions at points that did not correspond with the ambient measurement points.
- Added language in section III.1, requiring that the post-construction noise measurements take place within twelve months of initial operation, and within two weeks of the anniversary date of the pre-construction ambient noise measurements. The purpose of the change is to minimize fluctuations in seasonal ambient noise between the pre- and post-construction measurements.

Revisions added November 17, 2008

- Added instructions for post-construction noise measurements for wind developments in section III.1.

Revisions – September 2025

- All sections were updated to reflect current industry standards of practice.