

CHAPTER 10 ADDITIONAL PROVISIONS APPLICABLE TO SITE SELECTION AND CONSTRUCTION OF MAJOR FACILITIES OF A PUBLIC UTILITY

A. SPECIAL PROCESSING REGULATIONS FOR APPLICATIONS BY PUBLIC UTILITIES AND POWER AUTHORITIES

1. Within 28 days after submission of an application, purported by the applicant to be complete, of a public utility or a power authority providing electric or natural gas service that relates to the location, construction, or improvement of major electrical or gas facilities as defined in CRS §29-20-108(3), the Administrator shall determine whether the application is complete, and, if it is determined to be incomplete, shall give notice of what additional information is required, as provided in Chapter 3.E. The notice shall specify the particular provisions of the regulations that necessitate submission of the required information.
2. Final action by the Permit Authority on any application under this subchapter 10.A. shall be taken no later than (a) 90 days after the utility's or authority's submission of an application deemed complete as provided in Chapter 3.E. or (b) 90 days after the utility or authority submits all of the information required by the Administrator's timely notice of what additional information is required, whichever is later.
3. Failure of the Administrator to give timely notice that an application is incomplete will not prevent the Administrator from requiring additional information to complete the application, but the 90-day deadline for final action shall run from the last day on which the notice could have been timely given as provided in this subchapter 10.A.
4. The deadlines in this subchapter 10.A supersede any other deadlines in these regulations in the event of conflict between them.
5. The applicant and Permit Authority may agree to longer timelines for processing and taking final action on a permit application, which agreement will supersede the provisions of this subchapter 10.A.

B. ADDITIONAL SUBMITTAL REQUIREMENTS APPLICABLE TO SITE SELECTION AND CONSTRUCTION OF MAJOR FACILITIES OF A PUBLIC UTILITY

1. The applicant must provide the following information concerning title of the project site, which shall be the entire proposed alignment or corridor under consideration at the time of the application for transmission line and pipeline projects:
 - a. The names and addresses of all surface property owners of the project site and within one thousand three hundred twenty (1,320) feet of the boundaries of the property proposed to be physically disturbed, except for transmission line or pipeline projects, for which the names and addresses of all surface property owners for five hundred (500) feet on either side of the centerline of the proposed alignment shall be provided.
2. The applicant must provide the following items and information:
 - a. A sketch or map showing the following:
 - i. If a power plant is proposed, the area within ten (10) miles from the site.
 - ii. For transmission lines or pipelines, provide a map showing all existing transmission lines (115 kV or greater) or pipelines (ten-inch in diameter or greater) for a distance of two (2) miles beyond any reasonable alternative studied.
 - b. For upgrades of existing transmission lines (115 kV or greater) or gas pipelines (ten-inch diameter or greater), provide a sketch showing all existing transmission lines and

pipelines within one (1) mile on either side of the proposed alignment.

- c. For all other major facilities of a public utility, provide a sketch showing the area within five (5) miles of the site if another major facility is proposed.
 - d. Type of facility - specify where applicable:
 - i. The voltages and lengths of transmission lines.
 - ii. Power source and generating capacity.
 - iii. The functions and sizes of substations.
 - iv. For pipeline projects, the diameters and lengths of pipelines.
 - v. The capacities of the storage tanks and types of petroleum derivative to be stored.
 - vi. Corridor locations.
 - vii. Service area.
 - viii. Resource area (e.g., source of power being generated or transmitted, source of petroleum derivative being transported).
 - ix. Describe applicable support facilities (e.g., pollution control, parking areas, landscaping, etc.) to be provided.
 - e. Projected development schedule:
 - i. Estimate maximum number of employees, number of shifts and employees per shift during the construction, operation and maintenance phases of the project.
 - ii. Specify any future phases or extensions of the facility and relationship of the facility (if currently foreseen) to larger programs and plans.
- 3. Analysis of nonstructural alternatives to the project such as conservation of energy use, no development or management (different scheduling, conservation programs, facility design, land trades, etc.), if applicable.
 - 4. Analysis of reasonable structural alternatives to the project such as alternate locations and routes, alternative types of facilities, use of existing rights-of-way, joint use of rights-of-way with other utilities and upgrading of existing facilities.
 - 5. Analysis of design alternatives concerning access, landscaping, architectural controls and so forth.

C. ADDITIONAL CRITERIA APPLICABLE TO SITE SELECTION AND CONSTRUCTION OF MAJOR FACILITIES OF A PUBLIC UTILITY

- 1. The Board of County Commissioners shall approve an application for permit for site selection and construction of a major facility of a public utility (with reasonable conditions, if any, in the discretion of the Board of County Commissioners) only if the proposed site selection and construction complies with the following criteria, to the extent applicable, and taking into consideration the purpose and intent of these Section 1041 Regulations. (The Board may rely upon the findings and approvals of other governmental entities having jurisdiction over those criteria listed below with respect to their environmental determinations or regulatory compliance.
 - a. All reasonable alternatives to the proposed action, including use of existing rights-of-way and joint use of rights-of-way wherever uses are compatible, have been adequately assessed and the proposed action is compatible with and represents the best interests of the people of the County and represents a fair and reasonable utilization of resources in the impact area.

- b. The facility site or expansion area is not in an area with general meteorological and climatological conditions which would unreasonably interfere with or obstruct normal operations and maintenance.
- c. The nature and location of the facility or expansion will not adversely affect the water rights of any upstream, downstream or agricultural users, adjacent communities or other water users.
- d. Adequate water supplies are available for facility needs.
- e. The nature and location of the facility or expansion will not unduly interfere with existing easements, rights-of-way, other utilities, canals, mineral claims or roads.
- f. Adequate electric, gas, telephone, water, sewage, and other utilities exist or shall be developed to service the site.
- g. The applicant has obtained or will obtain all property rights, permits, and approvals necessary for the proposed project, including surface, mineral and water rights and easements for drainage, disposal, utilities, access, etc. If the applicant has not obtained all necessary property rights, permits and approvals, the Board may, at its discretion, grant the permit conditioned upon completion of the acquisition of such rights prior to issuance of a zoning or building permit by the County.
- h. The proposed project will not present an unreasonable risk of exposure to or release of toxic or hazardous substances within the impact area. The determination of effects of the project shall include the following considerations:
 - i. The means by which outdoor storage facilities for fuel, raw materials, equipment and related items are adequately enclosed by a fence or wall.
 - ii. The likelihood of hazardous materials or wastes being moved off the site by natural causes and forces.
 - iii. Containment of inflammable or explosive liquids, solids or gases.
- i. The scope and nature of the proposed project will not unnecessarily duplicate existing services within the County.
- j. If the purpose and need for the proposed project are to meet the needs of an increasing population within the County, the area and community development plans and population trends demonstrate clearly a need for such development.

CHAPTER 10.a. ADDITIONAL PROVISIONS APPLICABLE TO SITE SELECTION AND CONSTRUCTION OF MAJOR FACILITIES OF A PUBLIC UTILITY FOR UTILITY-SCALE WIND FACILITIES

A. ADDITIONAL SUBMITTAL REQUIREMENTS APPLICABLE TO SITE SELECTION AND CONSTRUCTION OF MAJOR FACILITIES OF A PUBLIC UTILITY FOR UTILITY-SCALE WIND FACILITIES

- 1. Wind Resource Map** that identifies wind characteristics including prevailing wind direction and minimum, maximum, and average wind speeds.
- 2. Shadow Flicker**
For utility scale wind energy systems, a copy of the Shadow Flicker Analysis. The application shall conduct an analysis on potential shadow flicker at occupied structures. The analysis shall identify the locations of shadow flicker that may be caused by the project and the expected durations of the flicker at these locations from sunrise to sunset over the course of a year. The analysis shall also show locations of all occupied structures within locations of shadow flicker that may be caused by the project.
- 3. Electromagnetic Interference**
Evidence, to include mitigation agreed to via negotiations with owners of other facilities, that the project will not be installed in any location where its proximity to existing fixed broadcast, retransmission, or reception antennae for radio, television, or wireless phone or other personal communication systems would produce electromagnetic interference. Further, evidence shall be provided that the project will not be installed in any location within the line of sight of an existing microwave communications link where operation of the wind energy system is likely to produce electromagnetic interference in the link's operation unless the interference is insignificant.
- 4. Complaint Resolution**
A Complaint Resolution process shall be developed by the applicant that includes a method to resolve complaints from nearby residents concerning the construction or operation of the project. The process may use an independent mediator or arbitrator and shall include a time limit for acting on a complaint. The process shall not preclude the County from acting on a complaint. The process shall also include contact information where a project representative can be reached during normal business hours during construction of the project.
- 5. Noise Emissions**
Please see the Noise Emissions portion below for submittal requirements.

B. ADDITIONAL CRITERIA APPLICABLE TO SITE SELECTION AND CONSTRUCTION OF MAJOR FACILITIES OF A PUBLIC UTILITY FOR UTILITY-SCALE WIND FACILITIES

The Board of County Commissioners shall approve an application for permit for site selection and construction of a major facility of a public utility for utility-scale wind facilities (with reasonable conditions, if any, in the discretion of the Board of County Commissioners) only if the proposed site selection and construction complies with the following criteria, to the extent applicable, and taking into consideration the purpose and intent of these Section 1041 Regulations. (The Board may rely upon the findings and approvals of other governmental entities having jurisdiction over those criteria listed below with respect to their environmental determinations or regulatory compliance.

1. Electromagnetic Interference

No utility scale wind or solar energy system shall be installed in any location where its proximity to existing fixed broadcast, retransmission, or reception antennae for radio, television, or wireless phone or other personal communication systems would produce electromagnetic interference with signal transmission or reception unless the applicant provides a replacement signal to the affected party that will restore reception to at least the level present before operation of the wind energy system, or unless there is agreed upon mitigation through negotiations with owners of such facilities. No utility scale wind energy system shall be installed in any location within the line of sight of an existing microwave communications link where operation of the wind energy system is likely to produce electromagnetic interference in the link's operation unless the interference is insignificant, or unless there is agreed-upon mitigation through negotiations with owners of such facilities.

2. Noise Emissions

a. NOISE MEASUREMENT METHODS

All noise shall be measured with a sound measuring system that meets the requirements set forth in the ANSI S1.4-1983 standard for a Type 1 Sound Level Meter/Analyzer. The noise measurements shall be conducted in accordance with the requirements set forth in International Electro-mechanical Commission (IEC) Standard 61400-11, Part 11, edition 2.1 annex A.2 dated 2006, in effect at the date of approval of a project by the Clear Creek County Commissioners. This requirement regarding the performance specifications for acoustical instrumentation is applicable to all noise measuring, recording and analysis devices including both digital and analogue types. All instrumentation shall be calibrated annually with laboratory calibration standards having traceability to National Institute of Standards Technology. The ANSI specification does not address the frequency response characteristics of sound level meters/analysis at frequencies less than 10 Hz. Therefore S1.4 should be used as a guide for methods, procedures and the performance of noise measuring instruments at frequencies less than 10 Hz.

Ambient Noise Level

The ambient noise levels (commonly referred to as baseline noise levels) shall be measured at the project boundary lines and as may be specified by the Administrator. The term "receptor" means any occupied building or structure.

The ambient noise level also shall be measured at receptors which may be determined on a case-by-case basis by the Administrator based on the existence of specifically-identified potentially affected receptors in proximity to the project site. The procedures and methods in ANSI standard S12.9 or ISO specification R1996 shall be used as a guideline regarding methods, procedures and reporting. The measured and recorded decibel levels shall be dB(A) and dB(C) weighting, slow response and energy equivalent (L_{eq}). The measurement schedule shall be for each and every one (1) hour interval in a twenty-four day for a total duration of one (1) month during the summer, one (1) month during the fall, one month during the winter and one (1) month during the spring. If it is demonstrated that the acoustical environment can be accurately characterized in less than the four seasonal periods described in the preceding sentence, the administrator can designate a different data collection schedule. The data shall include as a minimum, exceedance levels of 1%, 10%, 50%, 90% and 99% for every one hour increment. Measurement intervals may be ignored if the wind speed at the measurement site is in excess of 20 mph during any increment of time during the one-hour measurement intervals. Other disruptive events that would produce non-representative noise levels may also be excluded from the exceedance calculations but each one-hour interval must be documented as to the reason for non-inclusion of the data.

A meteorological station shall be located at selected receptor sites and shall measure and record wind speed, wind direction, temperature and humidity. The meteorological data and noise printouts shall

include one-hour time stamps so that the meteorological data can be correlated with the noise data. The meteorological station wind speed and direction transducers shall be no more than 12 feet above grade level. The temperature and humidity transducers may be at any elevation between 5 and 12 feet above grade level. The measurement accuracy shall be about 10%.

B. WIND FARM NOISE EMISSIONS

Noise emission from the site shall not be greater than the following dB(A) slow and dB(C) slow, one-hour energy equivalent exceedance levels as measured at the project boundary or beyond.

Hourly Exceedance Level Wind Farm Noise		
Exceedance Value - %	dB(A) Slow - L _{eq}	dB(C) Slow - L _{eq}
1	60	75
5	55	70
10	50	65
50	45	60
90	40	55
99	35	50

In any event, the exceedance levels shall not be greater than 5 dB above the ambient exceedance levels if ambient exceedance levels already exceed the above hourly levels for wind farm noise.

There are several ways to view or understand the meaning of the Exceedance Level Percentiles. For example using the values presented above:

The 1 Percentile

Only one percent of the total measurement time did the noise level exceed 60 dB(A). For almost all the one percentile levels are caused by local vehicle traffic, aircraft overhead, wildlife, wind, thunder and intermittent industrial activities.

The 10th Percentile

This percentile includes all of the noise values occurring more than 10% of the total time.

The 50th Percentile

A similar situation is the Class Average where half of the students get a better grade and half of the students get a lower grade.

The 90th Percentile

Very close to the constant noise level produced. In other words, the 90th percentile is that dB value that would occur most of the time.

It is required that the noise emission levels obtained when the turbines are in operation be at the same sites as the ambient (baseline) measurement locations. Measurement intervals may be ignored and not included in the calculation of the exceedance value if the wind speed at the measurement site is in excess of 20 mph during any increment of time during the one-hour measurement interval, other disruptive events that would produce non-representative noise levels may also be excluded from the exceedance calculation but each one-hour interval must be documented as to the reason for non-inclusion of the data.

These dB(A) exceedance values are based upon recommendations in ISO standard 1996, § 4.1 (35 dB(A) to 45 dB(A) rural outdoors), the State of Washington, Chapter 173-60 WAC, the World Health Organization and several townships in Michigan. Also the exceedance values will in all probability be receptor site dependent, for example, a receptor site near I-70 will have exceedance levels greater than those listed above. This is one reason why it is important to know the site specific ambient noise levels

and, if required, adjust the exceedance levels accordingly. When this occurs the exceedance levels shall not be greater than 5 dB above the ambient exceedance levels.

Selected meteorological stations shall be located at the same sites where the ambient noise measurements were taken and shall measure and record wind speed, wind direction, temperature and humidity. The meteorological data shall include one-hour time stamps that can be correlated with the noise data.

Pure Tones

Pure tones including multiple tones can be identified as a pure tone or pure tone components by using the following criteria:

1/3 Octave Frequency Band Range	dB Level of Adjacent 1/3 Octave Band Range
125 Hz and Lower	-10 dB
160 Hz to 400 Hz	- 8 dB
500 Hz and Greater	- 5 dB

Low Frequency Noise or Infrasound Noise

No low frequency noise or infrasound generated by a wind farm operation shall exceed the following 1/3 octave band decibel levels as measured at the receptor or at the receptor property line which abuts to the project site.

1/3 Octave Band Center Frequency (Hz)	Sound Pressure Level (L _{eq})
5	70
6.3	70
8	70
10	70
12	70
16	69
20	68
25	67
31.5	65
40	62
50	60
63	57
80	55
100	52

Impulsivity

No impulsive noise from wind turbine operations shall be generated inside and only inside of an occupied building or structure that results in impulsive noise levels that exceeds the limits as determined by either of the following two analysis methods.

Method 1

A qualification of impulsivity can be obtained from the average of several measurements of the difference between the C-weighted “impulse hold” and maximum C-weighted “slow” sound pressure levels. The average difference between the maximum and minimum values shall be less than 20 dB when computed as the arithmetic average of 100 differences.

Method 2

The impulsive character can also be displayed as a time history of the un-weighted acoustical signal which has been filtered through an octave band filter set at 31.5 Hz center frequency. The filtered octave band signal shall then be converted to a root-mean-square (RMS) value, slow

response, and log converted to dB. The display can be either analogue or digital. The average difference between the maximum and minimum value shall be less than 20 dB when computed as the arithmetic average of 100 differences.

Vibration

The Permit Authority may require seismic (ground vibration) measurements at selected receptor locations, when the site is being constructed or is in operation. The peak particle velocity for frequencies below 40 Hz shall not exceed 0.50 in/sec.

Site Development (Construction)

Site development also referred to as site construction, shall comply with the requirement set forth in CRS 25-12-103 (5).

Noise Standards

The Permit Authority may impose a noise standard that exceeds the other standards set forth in this regulation if the County determines that such greater standards are necessary to protect the public health, safety and welfare of the surrounding community. Such additional standards may be taken into account the combined effect of topography and meteorological conditions occurring during certain wind farm operational conditions.