

Overview of changes to Rule 012: Noise Control

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Introduction

1. During the current rule revision project for Rule 012: *Noise Control*, significant consultation has been undertaken over the last two years, and many changes have been proposed and discussed.
2. There are three types of changes described below:

Requirement changes	Clarifications	Edits
Changes that include new or adjusted requirements for noise terminology, assessment approaches, modelling methods and measurement procedures.	Changes that provide clarity or minor adjustments to the existing requirements.	Changes that remove redundant information, reorganize current requirements and improve the format of the rule.

3. All changes to Rule 012 made in the current rule revision project are presented in the [blackline Rule 012](#). Feedback from interested parties and Commission responses regarding these changes are summarized in the [comment matrix](#).
4. This overview focuses on the Requirement changes, which cover six topics. The following narrative sets out the background, changes, rationale behind the changes, and major feedback from interested parties for each topic.
5. Changes related to clarifications and edits are summarized in Attachment A of this overview.

(Please note: this overview is written in past tense, i.e., assuming the Commission has approved the changes proposed in this document. Staff have done this to minimize rewriting when this overview is published along with the bulletin.)

Requirement changes

Topic 1: Permissible sound levels for populated areas

Background

6. Permissible sound level (PSL) sets out the maximum daytime and nighttime sound level at a point 15 metres from a receptor in the direction of a facility. PSL is calculated based on basic sound level (BSL). BSL is determined in Table 1 of Rule 012 based on a receptor's dwelling density and proximity to transportation infrastructure.

Changes to Rule 012

7. The Commission added new columns for suburban and urban receptors in Table 1 of Rule 012. The new columns specify dwelling density ranges and establish conservative BSLs for two new classifications of receptors: suburban and urban.

Rationale behind the changes

8. Although Table 1 of Rule 012 accounts for dwelling density and proximity to transportation infrastructure, PSLs established using Table 1 may not be suitable for suburban and urban environments that have high population density and busy residential, commercial and transportation activities.

9. Urban PSLs were discussed in two noise complaint proceedings (proceedings 27276 and 27444). In both proceedings, the Commission recommended examining the method of establishing urban PSLs.

10. The Commission has carefully assessed population density using Statistics Canada Census data and Health Canada's *Guidance for Evaluating Human Health Impacts in Environmental Assessment: Noise* (Health Canada guidance) to arrive at reasonable dwelling density ranges for the purpose of defining two new classifications of receptors: suburban and urban (details in the [comment matrix](#)).

11. The Commission has established conservative BSLs for the new classifications of receptors based on two main factors: (i) dwelling density, and (ii) proximity to transportation infrastructure.

- The Commission has reviewed Health Canada guidance to establish conservative Category 1¹ BSLs for these new classifications of receptors to reflect higher dwelling/population densities. The BSLs for the new classifications of receptors are consistent with applicable Health Canada guidance, but are not identical due to differences in measurement and lack of adjustment for traffic/other factors in the baseline noise levels specified in the Health Canada guidance (justification detailed in the [comment matrix](#)).
- To reflect the influence of traffic noise, the Commission considered traffic adjustments for categories 2 and 3 BSLs for suburban and urban receptors in the revised Table 1.

Major feedback from interested parties

12. Most stakeholders agreed that the definition of suburban and urban receptors in Rule 012 should reflect higher dwelling density and busier human activities.

13. Stakeholders generally supported the Commission's use of dwelling density to define suburban and urban receptors in Table 1 of Rule 012.

¹ Table 1 of Rule 012 groups basic sound levels into three categories based on receptor's proximity to transportation infrastructure.

- Category 1—dwelling(s) distance is more than or equal to 500 metres (m) from heavily travelled roads or rail lines and not subject to frequent aircraft flyovers.
- Category 2—dwelling(s) distance is more than or equal to 30 m, but less than 500 m from heavily travelled roads or rail lines and not subject to frequent aircraft flyovers.
- Category 3—dwelling(s) distance is less than 30 m from heavily travelled roads or rail lines or subject to frequent aircraft flyovers.

14. Stakeholders suggested the Commission establish conservative BSLs for these new classifications of receptors and allow A2 adjustments for receptors where ambient sound levels assumed according to revised Table 1 are not representative of the actual acoustic environment.

Topic 2: Ambient sound level and A2 adjustment

Background

15. Ambient sound level (ASL) is a composite of different airborne sounds from many sources, far away from and near the point of measurement (e.g., a noise receptor). A predicted cumulative sound level is the sum of the ASL, noise level from baseline case facilities and noise level from the proposed facility. The predicted cumulative sound level is compared with the applicable PSL to demonstrate compliance. Rule 012 does not require the use of a specific ASL in a noise impact assessment (NIA) (Rule 012, Section 2.6(2)).

16. If the measured ASL is higher or lower than the ASL determined using Table 1 (the assumed ASL), then an A2 adjustment may be applicable. An A2 adjustment can increase or decrease the PSLs for a project if the assumed ASL is not representative of the actual acoustic environment.

Changes to Rule 012

17. The current Section 2.6 of Rule 012 has been updated to clarify that:

- *Assumed* ASLs should be used in most cases, and *measured* ASLs or A2 adjustments will only be considered in three cases: (i) an area with non-energy related facilities, or (ii) a pristine area as defined in Rule 012, or (iii) a populated area.
- Applicants must complete a *pre-survey process* for downward A2 adjustments.
- Noise modelling for traffic noise is now allowed to establish ASLs if values in Table 1 are not representative of the acoustic environment at the receptor, and traffic noise is dominant, and ASL surveys are not practical.

Rationale behind the changes

18. Assumed ASLs provide a reasonable, consistent and practical mechanism for predicting and assessing cumulative sound levels in NIAs, and use of assumed ASLs is consistent with the Alberta Energy Regulator's noise rule (Directive 038).

19. Acoustic environments where assumed ASLs are not representative can and should be addressed by application of A2 adjustments.

20. It is important to clarify in Rule 012 that assumed ASLs should be used in most cases, and measured ASLs may be considered in three specific cases (i.e., pristine areas, or areas with non-energy industrial activity, or populated areas).

21. A pre-survey process will be required for downward A2 adjustments to prevent unnecessary effort and cost in cases where an A2 adjustment is not appropriate. A downward

A2 adjustment may be controversial, while the conditions required for an upward A2 adjustment are more clear and objective (details on why the Commission will not require a pre-survey process for upward adjustments can be found in the [comment matrix](#)).

22. The Commission understands there are numerous traffic modelling standards available, and some commercial software programs (e.g., CadnaA®) have incorporated these standards to model traffic noise. The Commission will allow noise modelling for traffic noise to establish ASLs in special cases for the purpose of efficiency.

Major feedback from interested parties

23. Some stakeholders argued for measured ASLs but others acknowledged the challenges associated with ASL surveys (details in the [comment matrix](#)).

24. Some stakeholders suggested the Commission allow traffic modelling to establish ASLs in cases where road traffic is a dominant noise source and ASL surveys are not practical.

Topic 3: Determination of permissible sound levels for new dwellings

Background

25. Rule 012 specifies that the PSL at a new dwelling (i.e., a dwelling that is built after the Commission issues an approval or permit and licence) will be the greater of the sound level existing at the start of the dwelling construction or the PSL as determined in Section 2.1 of the rule. It can be difficult to determine when to consider a residence as a new dwelling in determining PSLs for a facility. Sometimes landowners may even build residences simultaneously while a nearby project is under construction.

Changes to Rule 012

26. Section 2.4(1) of Rule 012 will now include a milestone for determining PSLs: AUC approval. Any dwelling that is built after the AUC approval or amended approval would then be considered a “new dwelling” per Rule 012. The definition of “new dwelling” in Appendix 1 – Glossary of Rule 012 will be updated to reflect this milestone.

27. The revised Rule 012 introduces a new post-approval notification process (new Section 2.4(2)). The Commission expects the licensee will notify stakeholders that a facility has been approved and will be built in the future.

28. As we will use the AUC approval as a milestone for determining new dwellings, the Commission also combined sections 2.4 and 2.5 of Rule 012 into one section “Permissible sound levels for new dwellings built in proximity to an approved facility,” because the construction completion date is no longer a relevant factor for determining PSLs at new dwellings.

29. The Commission added a subsection under Section 2.4 of Rule 012 to clarify when an amendment application will trigger a new milestone for defining new dwellings.

Rationale behind the changes

30. It is important for Rule 012 to specify a milestone for determining PSLs at new dwellings to provide clarity. The readily identifiable milestone combined with a post-approval notification should make it clear to a reasonable person that a facility will be present in the area, such that increased noise levels are to be expected.

Major feedback from interested parties

31. Stakeholders suggested various milestones including noticeable construction activities, ordering of major equipment, project application deemed complete date, final project update, and the “crystallizing” method used in Ontario (details in the [comment matrix](#)).

Topic 4: Noise receptor

Background

32. The current Rule 012 requires NIAs to predict compliance with PSLs for: (i) occupied dwellings within 1.5 kilometres (km) of the facility property boundary; or (ii) in the absence of dwellings, points 1.5 km from the facility property boundary. The current rule does not consider non-dwelling receptors.

Changes to Rule 012

33. New Section 1.4(3) has been added in Rule 012 to emphasize that the Commission retains the discretion to consider noise compliance at continuous and persistent ceremonial and/or cultural sites that are significant to an Indigenous group and that are within 1.5 km of the project property boundary.

34. Section 3.2(3) of Rule 012 has been updated to clarify that:

- The Commission will allow consideration of other types of noise receptors, but the consideration of non-dwelling receptors will be limited to continuous and persistent ceremonial or cultural sites that are significant to an Indigenous group within 1.5 km of the project boundary.
- Parties requesting consideration of a non-dwelling location must explain to the proponent why noise compliance at this location should be predicted and assessed. This information, and the proponent’s response to such request (including predicted sound levels, if assessed, and rationale as to why the non-dwelling site was included or excluded from the NIA) must be submitted to the Commission.

35. The term “noise receptor” has been defined and added in Appendix 1 – Glossary of the rule as: any dwelling located within 1.5 km of the facility property boundary, or, in the absence of dwellings, any point 1.5 km from the facility property boundary that is reasonably suitable for habitation. It is also clarified that the Commission retains the discretion to consider noise compliance at continuous and persistent ceremonial and/or cultural sites that are significant to an Indigenous group and that are within 1.5 km of the project property boundary.

Rationale behind the changes

36. The current approach (i.e., assessing occupied dwellings as receptors) may be challenging for traditional land users when there is no cabin or other permanent dwelling (details in the [comment matrix](#)).

37. The term “noise receptor” is not defined in the current version of Rule 012. The term “noise receptor” has been defined and will be used throughout the rule wherever applicable, to avoid having to provide a long-detailed description each time Rule 012 refers to the location(s) where compliance must be assessed in an NIA or noise survey.

Major feedback from interested parties

38. Multiple parties requested clarity on when the Commission may consider non-dwelling noise receptors, including Fort McKay First Nation.

Topic 5: Tonality evaluation

Background

39. Currently, an evaluation of low frequency noise conditions must be conducted as part of an NIA or post-construction comprehensive sound level survey. A low frequency noise condition exists if: (i) dBC minus dBA is greater than or equal to 20 dB, *and* (ii) there is a clear tonal component existing at a frequency between 20 to 250 Hertz (Hz). The second part of the criteria is also referred to as tonality evaluation.

Changes to Rule 012

40. New Section 4.5(5) has been added in Rule 012 to clarify that the Commission *may* require tonality evaluation for *all audible frequencies* (as opposed to low frequency noise only) in a comprehensive sound level survey ordered in response to a noise complaint.

Rationale behind the changes

41. Tonal sound can be more noticeable than broadband sound at the same level, and many noise complaints are driven by prominent tones.

42. Tonality evaluation is not feasible for NIAs at the application stage but can be applied using measured data afterward. The changes give improved flexibility and clarify when tonal sound should be evaluated (further details on justification in the [comment matrix](#)).

Major feedback from interested parties

43. Some stakeholders support tonality evaluation for all audible frequencies, not only at low frequencies.

44. Most stakeholders suggested that tonality evaluation only be considered during a comprehensive sound level (CSL) survey ordered by the Commission in response to a noise complaint where a resident complains specifically about tonal noise.

Topic 6: New noise impact assessment flowchart

Background

45. The Commission often receives inquiries from stakeholders about whether an NIA is required for a facility that generates negligible noise. Common examples include facilities that are exempt from filing a Rule 007² application and facilities that qualify to file a checklist application under Rule 007.

Changes to Rule 012

46. A new NIA flowchart has been added under Section 3.1 of Rule 012 that will allow proponents to determine if preparation of an NIA is required where the noise impact from a facility is expected to be minimal.

47. The flowchart may be utilized in the following cases:

- a facility that is exempt from filing a Rule 007 application, *or*
- a facility that is only required to file a checklist application under Rule 007.

Rationale behind the changes

48. A need was identified to provide a simplified approach to assessing noise from relatively quiet facilities. The flowchart provides objective criteria for determining if noise impacts are expected to be minimal (details in the [comment matrix](#)):

- if these criteria are satisfied, then further assessment is not required; and
- if these criteria are not satisfied, the proponent must complete an NIA.

Major feedback from interested parties

49. Generally, stakeholders reviewed the proposed changes positively, with minor clarification suggestions.

² Rule 007: *Applications for Power Plants, Substations, Transmission Lines, Industrial System Designations, Hydro Developments and Gas Utility Pipelines.*

Attachment A: Clarifications and edits to Rule 012: Noise Control³

Clarifications

Topic 7: Submission and retention of noise impact assessment records

50. Several paragraphs in the current version of Rule 012 address retention of NIAs, noise surveys and associated information. The Commission combined these paragraphs into one new section, Section 3.3 of Rule 012, which details the requirements for submission and retention of NIA records.

Topic 8: Noise impact assessment summary form

51. The revised Rule 012 provides criteria in Section 3.1(6) for determining if NIA results may be submitted using an NIA summary form to satisfy the requirements of Rule 012.

52. The Commission also streamlined Appendix 3 – Noise impact assessment summary form.

Topic 9: Overview of noise impact terminology

53. The Commission added a graphic under Section 3 – Noise impact assessments to provide a quick reference to the NIA terminology in Section 3 of Rule 012 (i.e., NIA flowchart, NIA summary form and NIA).

Topic 10: Comprehensive sound level survey

54. The current Rule 012 states that when a noise complaint is filed with the Commission, the Commission may require the licensee to conduct a CSL survey to determine compliance. In situations where multiple residents submit a noise complaint about the same facility, Rule 012 does not state explicitly which dwelling(s) should be selected for the CSL survey. Changes on this topic aim to clarify the appropriate location(s) for a CSL survey.

55. The Commission revised Section 4.6.1 – *Comprehensive sound level survey requirements of Rule 012* to specify the appropriate location(s) for a CSL survey for the purpose of determining compliance and/or addressing a noise complaint.

Topic 11: Conditions for a time extension request

56. The current Section 1.5 of Rule 012 states that a new NIA is required if there are major amendments proposed to an approved facility. This requirement applies generally (i.e., any facility proposing major amendments will require a new NIA) and is not specific to time extension requests.

57. The Commission streamlined Section 1.5 to exclusively address time extensions and avoid discussion of major amendments.

³ Details about these topics can be found in the [comment matrix](#).

58. Revised Section 1.5 of Rule 012 will be consistent with Rule 007 and will explicitly specify information the applicant must confirm (e.g., no new dwellings, no new third-party facilities) if a new NIA is not included as part of the submission for a time extension application. Many recent time extension applications have omitted this type of information, which has resulted in information requests from the Commission. The large number of information requests suggests applicants may require additional guidance on this issue.

Topic 12: Noise complaint investigation

59. The Commission revised Section 5.2 of Rule 012 to clarify when noise complaint investigation forms should be completed and submitted.

Topic 13: Statistical method

60. The Commission notes that applicants rarely use the statistical method for confirming representative sound levels in a CSL survey. As a result, the Commission eliminated the statistical method in the interest of simplifying Rule 012.

61. The Commission updated parts of Rule 012 that relate to the statistical method and replaced them with a new method for combining data from multiple survey periods. The revised Rule 012 allows for a combination of data from multiple survey periods, so long as “the duration of valid data for each period to be combined is no less than 30 minutes and the difference in average sound levels from individual nighttime periods or daytime periods is no greater than plus or minus three dBA.”

Topic 14: Definition of heavily travelled road

62. The revised Rule 012 clarifies that the definition of heavily travelled road in Rule 012 places the traffic count methods in descending order of accuracy, and the Commission gives priority to the most accurate traffic data.

Edits

Topic 15: Deletion

63. The Commission deleted some Rule 012 paragraphs with redundant information to increase efficiency, avoid repetition and maintain consistency throughout the rule.

Topic 16: Rephrasing and formatting

64. The Commission added text boxes at various places in the rule to introduce or briefly describe important terms or processes at a high level. We believe these text boxes make the rule more accessible for lay readers and better connect the different sections of the rule.

65. The Commission rephrased some wording in Rule 012 to provide clarity.

66. Rule 012 has been reformatted to be more user-friendly. For example, using compact fonts and adding hyperlinks.