

Proposed Technical Issues being considered for Revisions to

AUC Rule 012: Noise Control

The following two tables summarize proposed technical issues that are being considered for revising AUC Rule 012: *Noise Control*. Table 1 contains items being considered for inclusion in the first segment of technical changes due to be released March 2011. The second table includes technical issues being considered for further consultation and inclusion in a revision of Rule 012 scheduled for release in March 2012. Items shown in yellow highlight were issues identified by stakeholders as potential changes to Rule 012.

Table 1: Technical Issues and Administrative Items to be Addressed for March 2011 Revision of Rule 012: *Noise Control*.

Major Subject Area	Issue #	Specific Task (As Issued in Bulletins 2010-19 and 2010-28)
Clarify Objective of AUC Rule 012	1.0	The primary objectives of Rule 012 should be more clearly stated. The following is proposed for consideration. AUC Rule 012 is intended to ensure that noise emanating from AUC-regulated facilities is effectively managed to minimize nuisance to potentially affected parties.
	1.1	Should Rule 012, similar to ERCB Directive 038, include statements that limit the scope of its application? Rule 012 does not impose limits on noise experienced by livestock or wildlife, nor does it address noise that may affect any occupant of a structure (i.e. not just dwellings). Are there any other limitations to the scope of Rule 012 that should be specified?
	1.2	Imperial Oil Resources Please clarify who has jurisdiction over a site that could fall under ERCB's Directive 38 and AUC's Rule 12 (ex. A well site with a gen-set, or a cogen site such as Imperial Oil Resources (IOR)'s Cold Lake Operations)
Change management	2.0	Develop an implementation schedule for technical changes to Rule 012 to permit applications developed under the current version of Rule 012 to be evaluated under the current Rule 012, while avoiding an unreasonable delay to the adoption of a revised AUC Rule 012.
Encroachment of dwellings near existing noise source (Section 1.4)	3.0	Modify Section 1.4 to ensure consistency with Section 1.4.2 of ERCB Directive 38. If a new dwelling is constructed within 1.5 km of an existing facility, the PSL at that new dwelling will be the existing noise level at the time of construction of the new dwelling.
	3.1	Clarify basic policy about encroachment. The PSL for a new dwelling is the existing sound level only if the facility is meeting the PSL at 1.5 km from original facility property line.
	3.2	Clarify that if the facility property line changes, the PSL at an affected

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		dwelling will remain at the level established from the original property line.
	3.3	Imperial Oil Resources Care should be taken when using the term encroachment
Pre-1988 Facilities (Section 2.3)	4.0	Ensure AUC Rule 012 Section 2.3 is consistent with ERCB Directive 038, Section 2.2. For dwellings constructed after facility, the PSL will remain at the existing level.
Pre-1988 Facilities (Section 2.3)	4.1	Clarify that the pre-1988 deferral of applying a PSL as calculated in section 2.1 applies to adjacent facilities only if the deferred facility is operating. If the deferred facility is suspended or abandoned, the PSL reverts to that calculated without the pre-1988 facility deferral.
	4.2	AltaLink Management Ltd. Section 2.3 (3) applying pre-expansion PSL for pre-1988 facilities is inconsistent with Appendix 3 Noise Impact Assessment Summary Form in the Rule, and ERCB Directive 38.
	4.3	EPCOR Distribution & Transmission Inc. EPCOR recommends that the deferred status for facilities built and in operation prior to 1988 not expire as indicated
Noise Impact Assessment NIA form (Appendix 3)	7.0	Is a Noise Impact Assessment Summary Form appropriate as the only document required in an application? If so, need to provide rationale. Refer to Section 19.
	7.1	Are any modifications required to the Noise Impact Assessment Summary Form?
Measurement of noise	8.0	Clarify requirements for determining when a road is considered to be "heavily travelled". Clarify which supporting documentation needs to be submitted with NIA. If traffic volume diminishes over time and a road is no longer heavily traveled, does the PSL revert to a lower level?
	8.1	For Class A seasonal adjustments, winter conditions are defined as "There is snow, ice, or frozen ground cover and temperatures are below zero degrees Celcius ". Is that definition sufficient? How should NIAs be submitted and evaluated where in certain areas some of these conditions do not occur in the winter time?
	8.2	When assessing ambient noise levels (e.g. for an A2 adjustment), isolation analysis to remove non-facility noise tends to be minimal. Consequently, forecasts tend to increase the ambient noise levels as compared to isolation

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		analysis for comprehensive sound level (CSL) surveys conducted when measuring for compliance. Is there a more accurate means of isolation analysis that would result in consistency of forecasts? Should statistical isolation analysis be adopted?
	8.4	Hatch Associates Ltd. Include dry roads in Table 4 favourable summertime weather conditions
	8.6	Hatch Associates Ltd. Modify modes of Isolation Analysis
Noise Complaint Investigation (Section 4)	9.0	Clarify that if there are no residents, the PSL is applied at 1.5 km from facility property line.
	9.1	Clarify that when isolating facility noise for comparison to the PSL, the noise from all energy-related facilities that contribute to total noise are included and only extraneous noises are excluded, such as dogs barking close to the microphone.
	9.2	Clarify that for determining compliance of facilities that operate only for short periods of time (e.g. wind turbines, peak shaving units) the L_{eq} is calculated based on noise generated for the duration of operation and not averaged over the entire night time or day time period.
	9.6	GL Garrad Hassan Table 4: The height of the wind speed must be specified.
Complaint Investigation Form	10.1	There is inconsistency between isolation analysis used for ambient noise surveys (e.g. for an A2 adjustment) compared to isolation analysis used for CSL surveys. Is there a more precise (consistent) means of isolation analysis that could be used? Should statistical isolation analysis be considered?
Noise Management Plans (Section 5)	11.0	A Noise Management Plan may be accepted if a CSL survey is not practical. Should we determine when a CSL survey is not practical?
	11.1	Clarify the use of the term Noise Management Plan? Do we need a different term to distinguish between a Noise Management Plan developed for a region and a facility-specific noise compliance plan?
	11.2	Imperial Oil Resources Will the AUC allow self-monitoring programs as proof of compliance with Rule 12? Is self-monitoring considered a "Noise Management Plan"? IOR currently has a Compliance Self-Assessment Agreement with the ERCB for its Cold Lake Operations. The ERCB has ruled that this Agreement meets the intentions and requirements of Directive 38.

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Cumulative Noise from energy related facilities (Section 3.4)	12.0	Define "energy-related facility". Should the definition include any facility approved by the AUC and ERCB and whose noise is subject to regulation? Should the list of facilities also include NEB-regulated facilities? Any others?
	12.1	Forecasts and measurement of cumulative noise includes proposed facilities. Clarify if "proposed facilities" includes wells & facilities licensed/approved, even if not yet built, as well as those for which an application has been submitted to the AUC, ERCB and NEB but not yet approved? Should any other energy-related facilities be included?
	12.2	Clarify that if noise from "other proposed facilities" is not included in the assessment of cumulative noise, the NIA is incomplete and therefore, the application is deficient?
	12.3	ATCO Structures & Logistics Ltd. When there are two or more AUC (or energy-related) facilities within 3,000 metres (m) of each other in an area without any receptors, clarification is required as to where the PSL must apply. The 1,500 m radius from one site may be quite near the other site(s), and thus the cumulative ASL at these locations could be well above 40 dBA.
Noise modeling	13.2	AltaLink Management Inc. Need to define "major" noise sources, in section 3.8.
Heavily travelled roads	14.0	Clarify the information required to determine if a road is heavily travelled. How to ensure that the required information is available to applicants?
	14.1	If the use of a road changes over time and that road is no longer heavily-travelled, does the PSL revert to that PSL without a heavily-travelled road adjustment?
A2 adjustment	15.0	Is the A2 adjustment consistent with the objective of AUC Rule 012?
	15.1	Are any changes to AUC Rule 012, Table 1 needed? Clarify the situation where it would be correct to use A2 adjustment to the PSL?
	15.2	Clarify the information that must be provided in support of the use of an A2 adjustment.
	15.3	What is the process for a pre-application request for an A2 adjustment?
Submitting octave band information	16.0	Clarify the purpose of requiring octave band information.
	16.1	Are there any facility types for which submission of octave band data should

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S3.8(2)		be specified as an application requirement? If yes, how to process applications where octave band data is not available.
Examples provided in Rule 012	17.0	Review and update the examples provided in Rule 012, Appendix 6 and include electrical facilities.
	17.1	Consider re-doing example 1 Rule 012, Appendix 6. Example no. 1 shows how the A2 adjustment is applied. A2 adjustments are rare and therefore, the example tends to send the wrong message.
Requirements to submit a Noise Impact Assessment	19.0	Should NIAs be required for all facility types or are certain facility types exempt from the requirement of a full NIA? Should the AUC introduce a significance test to evaluate the need for an NIA to include minor noise sources, discontinuous noise sources, equipment that replaces existing noisy equipment with quieter equipment, etc.? Specifically consider small power plants < 1 mW, wind turbines that are defined as microgeneration in AUC Rule 024, and lower voltage transformers/substations?
	19.1	Is it reasonable to file a separate NIA to the AUC when the AUC facility is minor part of a much larger project and where the larger project is a regulated facility (e.g. oil sands processing plant, or an unregulated facility (e.g. pulp and paper plant)?
Appendix 1 Definitions	20.0	Rule 012 limits noise at a dwelling. Consider including other noise receptors in addition to a dwelling. Should the term "receptor" be defined as a generic term or should some other term be defined?
Definition of receptor	20.1	Should Rule 012 restrict noise at public institutions where noise may affect users of overnight stay locations, such as hospitals, extended care facilities and/or other locations without over night stay, such as schools and libraries?
Definition of dwelling and dwelling unit	20.4	The term dwelling unit is no longer used in Rule 012. Should this definition be deleted or combined with "dwelling"?
	20.5	EDTI Does the 'dwelling' mean the exterior wall of a building intended primarily for the ongoing habitation and use by people? How do patios or attached decks fit into the definition of 'dwellings'?
Complaint Investigation Form	23.0	HFP Acoustical Consultants Section 4.1 (6) has a typo.
Appendix 1 Definitions	25.0	HFP Acoustical Consultants There is no definition for "combined sound level". Section 3.3 can also

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		specifically refer to "combined sound level".
Cumulative Noise Assessment	26.0	HFP Acoustical Consultants When there are no dwellings within 1.5 km of a facility, and that facility's 1.5 km boundary overlaps with an adjacent facility's 1.5 km boundary, should cumulative impacts be assessed?
Other Administrative issues	New	How long is an NIA considered technically valid?
	New	Definitions for energy related facility, most affected dwelling, temporary noise generating activity, proposed facility. Replace 'worst impacted' with 'most affected' as appropriate

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Table 2: Technical Issues to be Deferred to the March 2011-March 2012 Review

Major Subject Area	Issue #	Specific Task
Clarify objective of Rule 012	1.2	Imperial Oil Resources Please clarify who has jurisdiction over a site that could fall under ERCB's Directive 38 and AUC's Rule 12 (ex. A well site with a gen-set, or a cogen site such as Imperial Oil Resources (IOR)'s Cold Lake Operations)
Encroachment of dwellings near existing noise source (Section 1.4)	3.4	EPCOR Distribution & Transmission Inc. Location where noise measurements should be made to determine compliance.
	3.5	TransAlta Corporation Consider eliminating section 3.5 specifying noise modelling parameters
	3.6	TransAlta Corporation Section 3.6 requiring assessment of low frequency noise where data are available appears vague, consider removing
	3.7	TransAlta Corporation Section 3.1 (5) to ensure no increase in overall sound does not appear to be practical.
Wind Turbines	5.0	For wind turbines clarify how to predict noise to represent "worst case" noise conditions and measure noise for compliance assessment.
	5.1	For assessing noise from wind turbines, does the rule need to specify that special environmental conditions (i.e. wind speed, direction, shelter belts, inversions, atmospheric stability) be used to predict noise when modelling and measuring noise for compliance?
	5.2	How should wind noise be determined when measuring noise from wind turbines? The maximum sound power of a wind turbine is at wind speeds above the maximum recommended for sound level measurement. Could an increment for wind noise be added relative to ambient noise (e.g. Ontario approach) or should a physical barrier be used to screen wind for measurement of other noise when determining the noise from a wind turbine at a receptor?
	5.3	GL Garrad Hassan Clarify height of wind speed measurement
	5.4	GL Garrad Hassan Model wind turbine noise using maximum acoustic power
	5.5	GL Garrad Hassan

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		Section 3.7 (4) : A cut-off distance should be specified for the cumulative effect of a wind turbine.
Low Frequency Noise (S 4.2 and Appendix 5) Low Frequency Noise	6.0	Section 4.2(1) requires determination of LFN and identification of a tone. Is the two-part requirement necessary? Is there a concern about LFN that does not have a tone? If so how should it be determined, measured and managed?
	6.1	Is the identification of LFN as dBC-dBA > 20 dB sufficient? Some transformers have a 125 Hz tone which causes annoyance, but the dBC-dBA level is < 20 dB due to the difference in A-weighting correction. Also this approach may not account for ambient noise that contains LFN. The calculation could be changed to a cumulative LFN value to be consistent with compliance assessment.
	6.2	Is there a need to adopt a dBC noise threshold limit such as that used in other jurisdictions?
	6.3	Are there facility types that generate low frequency noise and therefore, require a routine assessment of LFN as a standard application requirement?
	6.4	GL Garrad Hassan Tone identification process should be separated from LFN issue.
Measurement of Noise	8.3	Is there value in adopting other statistical measures of noise such as L ₉₅ , L ₉₀ , L _{dn} ?
	8.5	Hatch Associates Ltd. Modify wind speed specified Table 4 favourable summertime weather conditions
	19.3	TransAlta Corporation May not be possible to meet requirements of section 2.1(5)(c) Preparation of a Noise Impact Assessment
Noise Complaint Investigation (Section 4)	9.4	Clarify duration of monitoring required for comprehensive sound level (CSL). In section 4.1, subsection (7), the first sentence indicates that at least nine hours of monitoring is required; however, the second sentence has been interpreted to mean that only six hours of monitoring is required.
	9.5	GL Garrad Hassan Section 4.4: the wind speed measurement height should be specified. What is the rational for these wind speed? Wind-induced noise can be minimized through the use of a wind screen and its effects/limitations can/shall be documented by the specialist in charge of the measurement.
Complaint Investigation Form	10.0	Clarify the use of the Complaint Investigation Form. When complainant is reluctant to communicate with a facility operator, how would the operator

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		determine conditions representative of the complaint?
Noise modeling	13.0	Clarify the use of absorption coefficients used in modelling noise (based on ISO 9613). Is the use of one or zero as an absorption coefficient appropriate?
	13.1	Add and clarify the meaning of noise modeling parameters specified in Directive 038 Section 3.5.1 (13) but missing from Rule 012. Directive 038 states: "Predictions must be field calibrated, frequency-specific predictions performed, and operational conditions quantified." How are predictions field calibrated when only model predictions are required for applications?
References provided in Rule 012 (Appendix 8)	18.0	Should Rule 012 contain a list of technical reference material, standards and protocol, or acronyms? If yes, does the current list (Appendix 8) need to be updated and expanded? Any suggested references to be included?
Requirements to submit a Noise Impact Assessment	19.2	GL Garrad Hassan Modify the requirements for submitting a map of noise isocontours
Definition of Receptor	20.2	Should Rule 012 restrict noise at commercial or public buildings such as hotels, motels, churches, offices, restaurants, movie theatres?
	20.3	If no to Items 20.1 and 20.2, how should the AUC respond when a noise complaint is received by someone other than a dwelling occupant?
Construction Noise	21.0	HFP Acoustical Consultants Existing PSLs should not be used to assess construction noise
	21.1	HFP Acoustical Consultants Timing of construction problematic – replace "must" statements
Noise modeling	22.0	HFP Acoustical Consultants Is it appropriate to adjust predicted noise by using wind rose data?
Measurement of noise	24.0	HFP Acoustical Consultants There is no guidance on microphone height anywhere in the Rule.