



# ***New Inukjuak Backup Thermal Generating Station***

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**Supplement to the application to amend the certificate of authorization (201 EQA)**

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Responses to questions and comments  
from Québec's Ministère de l'Environnement et de la Lutte  
contre les changements climatiques,  
de la Faune et des Parcs

October 2023

## ■ QC -1

The introduction to the Noise Monitoring Program During Operation Phase states that “[t]he draft-design study showed that noise emissions from the new backup thermal generating station would be compliant with the noise level criteria established for the village’s built and inhabited areas, specifically 55 dBA LAr for 12 hours a day and 45 dBA LAr for 1 hour in the evening and night.” However, it was clearly established at the time of the impact statement analysis that the applicable criteria based on instruction memorandum 98-01 “Traitement des plaintes sur le bruit et exigences aux entreprises qui le génèrent” [processing of complaints about noise and requirements for the companies producing the noise], issued by the Ministère de l’Environnement, de la Lutte contre les changements climatiques, de la Faune et des Parcs (MELCCFP), were:

- LAr, 1 hour in the day, 45 dBA;
- LAr, 1 hour at night, 40 dBA.

In fact, these criteria were presented by the proponent in table QC-9-1, submitted in response to QC-9 of the questions and comments document dated September 2021.

The proponent must modify the applicable criteria from instruction memorandum 98-01 presented in its Noise Monitoring Program During Operation Phase, to bring the program in line with the correct applicable criteria from the memorandum and the commitments the proponent made during the impact statement analysis.

## RESPONSE

The criteria of 55 dBA LAr for 12 hours a day and 45 dBA LAr for 1 hour in the evening and night are an error. The criteria provided in the response to QC-9-1 are the correct ones. The Noise Monitoring Program During Operation Phase was revised to reflect this (see Appendix A).

## ■ QC -2

Section 2 of the Noise Monitoring Program During Operation Phase presents the methodology suggested to carry out the monitoring. In addition to the details about the simulation and its validation by measurements taken at sensitive receptors, this section should also mention that the program is compliant with the methodology outlined in instruction memorandum 98-01 issued by the MELCCFP.

The proponent must add a statement to that effect in Section 2 of its Noise Monitoring Program During Operation Phase.

## RESPONSE

A statement was added at the end of the Noise Monitoring Program During Operation Phase.

**APPENDIX A – REVISED NOISE MONITORING PROGRAM DURING OPERATION PHASE**



## Technical Report

Date October 10, 2023

To Ministère de l'environnement (MELCCFP)

From **Djibril Sy, Eng., M.Sc.A.**  
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No. \_\_\_\_\_  
(Filing code)

Subject **New Inukjuak generating station – Noise monitoring program during operation phase (Revision 1)**

### 1. Introduction

In the second half of 2023, the community of Inukjuak will start being supplied by a new hydroelectric generating station (Innavik generating station). To provide a backup electricity supply for the new generating station, Hydro-Québec plans to build a new thermal generating station north of the village of Inukjuak. The backup thermal generating station will operate only a few hours a month, only during the day, for a preventive startup, and it will only be used to supplement Inukjuak's energy needs during a temporary shutdown of the hydroelectric generating station.

The draft-design study showed that noise emissions from the new backup thermal generating station would be compliant with the noise level criteria established for the village's built and inhabited areas, specifically 45 dBA LAr for 1 hour in the day and 40 dBA LAr for 1 hour at night. To ensure compliance with these criteria, we are implementing a noise monitoring program covering the content presented below.

### 2. Methodology

The methodology suggested for monitoring noise is made up of three components:

- Noise surveys conducted with class 1 sound level meters in inhabited areas located near the thermal generating station's noise sources.
- Sound propagation modeling carried out based on the noise surveys to validate compliance over a larger area.
- Identification of noise mitigation measures, if necessary, in the event of non-compliance.

In the village, noise surveys will be conducted at the inhabited sites identified during the draft design, specifically at points R1 to R4 in Figure 1 below.



Figure 1: Location of measuring points in the village

The envelope of the generating sets is the source of the noise emissions, and the noise is transmitted to the outside through the walls of the generating station and through ventilation openings; this is the noise emitted by fuel combustion exhaust, the ventilation of cooling air intake and exhaust and, lastly, the radiators.

Noise surveys will be conducted near these noise emission sources. Based on these surveys, we will then model the noise propagation using the SoundPlan 8.2 ® software. Outdoor noise propagation will be calculated using the ISO 9613 method, which allows us to calculate the attenuation of sound as it propagates in order to forecast the noise level at a given distance from the emission source. The method takes into account geometric divergence, atmospheric absorption, the effect of hard or porous soil, reflection from surfaces, the screening effect and topography. It predicts the noise level under meteorological conditions that are favorable to the propagation of sound from its emission sources to its receivers. Only continuous noise is considered.

Thanks to the propagation modeling, validated by the sound surveys, the compliance of noise emissions will be confirmed at all receiving points in the village.

In the event of non-compliance, the propagation model will be used to identify the dominant noise sources, and mitigation measures will be considered. These measures may include (though are not limited to) adding absorbent material along the inner walls of the engine bays or adding mufflers on air intake and output openings.

The noise monitoring will be conducted by a qualified professional (e.g., acoustic engineer) and will comply with the methodology outlined in instruction memorandum 98-01.

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