Noise from Greek High Voltage Distribution Box

Summary of Content

The humming or buzzing noise from high-voltage distribution boxes is primarily caused by transformer vibrations and corona discharge, influenced by electrical, mechanical, and environmental factors.

Transformer-Related Noise

Transformers inside distribution boxes are a major source of audible noise. This occurs due to magnetostriction, a property of the core material that causes it to expand and contract as the magnetic field changes, producing vibrations at twice the power frequency (around 100 Hz) and its harmonics, which are audible to humans . Additional noise arises from winding vibrations, cooling systems (fans or oil pumps), and structural resonance, where vibrations are amplified by the transformer's frame or mounting . Noise intensity increases with higher load currents and voltage harmonics.

Corona Discharge Noise

High-voltage conductors can produce a hissing or buzzing sound due to corona discharge, which occurs when the electric field around the conductor exceeds the breakdown strength of the surrounding air . This discharge ionizes the air, generating audible noise, faint visible glow, and minor energy loss known as corona loss. Environmental conditions such as humidity, rain, fog, and air density can intensify this noise, making it louder on humid or wet days . Sharp points, surface contamination, or weathering on conductors can also increase corona activity.

Electromagnetic Interference

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Experimental study of the noise generated by urban high-voltage ...

This work aimed at studying the sound pressure level in different high-voltage substations operating in urban zones to

Why Is My Electrical Panel Buzzing?

“Why is my electrical panel buzzing?” If, for some reason, you found yourself asking this question, then this guide is

Power-Line Noise FAQ

Simply make a high quality recording of each suspected noise source in the field. Replay the sounds for signature analysis at your

Transformer Noise 2025: dB Specs, Causes & Mitigation

This guide examines the physics behind transformer noise generation, explains how manufacturers specify sound

Why do high-voltage power lines sometimes audibly hum or buzz

This post will demystify that sound, explaining the science behind why those high-voltage lines hum and why the

the Greek Transmission and Distribution System

This paper describes a pilot project in Greece that, in accordance with OneNet''s architecture, addresses the challenges of

Here''s Why High-Voltage Power Lines Make Noise

Learn why high-voltage power lines buzz, crackle, or hum. NCE explains corona discharge, weather impacts, and

Corona Discharge Sound: Why Do Power Lines Buzz

The sound you hear from overhead power lines results from a phenomenon known as corona

Noise management | National Grid

With years of experience in identifying and minimising the impact of high voltage (HV) asset noise, our Noise Management service

Corona Discharge Sound: Why Do Power Lines Buzz (Humming Sound)?

The sound you hear from overhead power lines results from a phenomenon known as corona discharge. This electrical

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