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IEEE Standard for the Measurement of Audible Noise from Overhead Transmission Lines

IEEE Power and Energy Society

Sponsored by the
Transmission and Distribution Committee

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3 Park Avenue
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USA

IEEE Std 656™-2018
(Revision of IEEE Std 656-1992)

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Approved 15 February 2018

IEEE-SA Standards Board

Abstract: Uniform procedures are established for manual and automatic measurement of audible noise from overhead transmission lines. Their purpose is to allow valid evaluation and comparison of the audible noise performance of various overhead lines. Definitions are provided, and instruments are specified. Measurement procedures are set forth, and precautions are given. Supporting data that should accompany the measurement data are specified, and methods for presenting the latter are described.

Keywords: audible noise, IEEE 656™, overhead transmission lines

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PDF: ISBN 978-1-5044-4511-5 STD23066
Print: ISBN 978-1-5044-4512-2 STDPD23066

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Introduction

This introduction is not part of IEEE Std 656™-2018, IEEE Standard for the Measurement of Audible Noise from Overhead Transmission Lines.

This standard was the result of several years of effort by the Corona Effects Working Group and its predecessor, the Audible Noise Working Group, of the Corona and Field Effects Subcommittee of the Transmission and Distribution Committee of the IEEE Power Engineering Society. This standard is the direct outgrowth of a report that was prepared by a task force of the subcommittee and published as "Measurement of Audible Noise From Transmission Lines" in *IEEE Transactions on Power Apparatus and Systems* [B8].[1] The report is recommended as a tutorial for this standard.

The 1992 revision of this standard incorporates minor revisions, based upon application of this standard, and a new annex that contains the results of work by the Psychoacoustics Task Force on definitions of instrumentation for psychoacoustic testing.

The 2018 revision of the standard primarily consists of additional minor revisions throughout and updates related to recording equipment. Additionally, a new informative Annex B was added regarding application of noise measurements primarily relating to regulatory requirements, mitigation techniques, and comparison to ambient noise.

[1]The numbers in brackets correspond to those of the bibliography in Annex A.

Contents

IEEE Standard for the Measurement of Audible Noise from Overhead Transmission Lines

1. Overview

1.1 Scope

This standard describes manual and automated procedures for measuring audible noise from overhead power transmission lines.

1.2 Purpose

The purpose of this standard is to establish uniform procedures for the measurement of audible noise from overhead transmission lines, using instrumentation that conforms to ANSI S1.4 or IEC 61672-1 [B2] standards.[2] A uniform procedure is a prerequisite to valid evaluation and comparisons of the audible-noise performance of various overhead power transmission lines.

2. Normative references

The following referenced documents are indispensable for the application of this document (i.e., they must be understood and used, so each referenced document is cited in text and its relationship to this document is explained). For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments or corrigenda) applies.

ANSI S1.4, American National Standard Specification for Sound Level Meters.[3]

ANSI S1.6, American National Standard Preferred Frequencies, Frequency Levels, and Band Numbers for Acoustical Measurements.

ANSI S1.11, American National Standard Specifications for Octave, Half Octave, and Third Octave Band Filter Sets.

[2]Information on references can be found in Clause 2.
[3]ANSI publications are available from the American National Standards Institute (http://www.ansi.org/).