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IEEE Guide for Animal Deterrents for Electric Power Supply Substations

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Approved 16 February 2015

IEEE-SA Standards Board

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Abstract: This guide documents methods and designs to mitigate interruptions, equipment damage and personnel safety issues resulting from animal intrusions into electric power supply substations, thereby improving reliability and safety, and minimizing the associated revenue loss.

Keywords: animal, barriers, coating, damage, deterrent, IEEE 1264™, insulation, intrusion, mitigation, noise, outages, program, repellent, survey

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Introduction

This introduction is not part of IEEE Std 1264™-2015, IEEE Guide for Animal Deterrents for Electric Power Supply Substations.

IEEE Std 1264™-1993(R2009) was revised by members of the IEEE Guide for Animal Deterrents for Electric Power Supply Substations Working Group and is under the sponsorship of the Transmission and Distribution Substations Operations Subcommittee of the Substations Committee of the IEEE Power and Energy Society.[a, b] This guide provides guidance and information to substation engineers on the problems animals cause in electric power supply substations. Further, it recommends criteria for applying mitigation methods, documents survey-reported effectiveness of various methods and recommends factors for evaluating effectiveness of methods once they are applied.

Updates were made to several clauses to incorporate valuable industry feedback from members and balloters, in particular the clauses on line barriers and insulating coverings. The Working Group had originally planned to send out a new survey and incorporate updated findings in this revision, yet resources to accomplish this were not available.

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1. Overview

This guide is divided into seven clauses. Clause 1 provides the purpose and scope of this guide. Clause 2 lists references to other standards. Clause 3 provides definitions of terms that are used in the guide, but are listed here as a quick reference. Clause 4 discusses the various types of animals and the problems they may cause. Clause 5 recommends criteria for implementing a mitigation program. Clause 6 explains different mitigation methods. Clause 7 describes the effectiveness of the various mitigation methods.

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1.1 Scope

This guide documents methods and designs to mitigate interruptions, equipment damage, and personnel safety issues resulting from animal intrusions into electric power supply substations, thereby improving reliability and safety, and minimizing the associated revenue loss

1.2 Purpose

Intrusion by animals into electric power supply substations has been a problem experienced by most of the electric utility industry. The costs associated with outages caused by animals continue to escalate. Although animal problems differ in nature geographically, the damage to equipment, interruption of or loss of service to customers, and safety problems encountered by operating personnel result in the same general concerns.

This guide identifies various animals, the problems they cause, and mitigation methods. Further, it recommends criteria for applying mitigation methods, documents survey-reported effectiveness of various methods and recommends factors for evaluating effectiveness of methods once they are applied.

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.

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