

IEEE Guide for Animal Deterrents for Electric Power Supply Substations

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Abstract: Methods and designs to mitigate interruptions and equipment damage resulting from animal intrusions into electric power supply substations thereby improving reliability and minimizing the associated revenue loss are addressed.

Keywords: barrier, flashover, mitigation, phase-to-ground fault, phase-to-phase fault

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Introduction

(This introduction is not a part of IEEE Std 1264-1993, IEEE Guide for Animal Deterrents for Electric Power Supply Substations.)

This guide was prepared by members of Working Group G3, Substation Security, and is under the sponsorship of the Substation Environmental Subcommittee of the IEEE/PES Substations Committee.

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IEEE Guide for Animal Deterrents for Electric Power Supply Substations

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.

1.1 Purpose

Intrusion by animals into electric 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.

1.2 Scope

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

2. References

This guide shall be used in conjunction with the following publication:

IEEE Std 100-1992 The New IEEE Standard Dictionary of Electrical and Electronics Terms (ANSI)¹.

¹IEEE publications are available from the Institute of Electrical and Electronics Engineers, Service Center, 445 Hoes Lane, P. O. Box 1331, Piscataway, NJ 08855-1331, USA.