

IEEE Guide for Protection Systems of Transmission-to-Generation Interconnections

IEEE Power and Energy Society

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Power System Relaying and Control Committee

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Power System Relaying and Control Committee
of the
IEEE Power and Energy Society

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Abstract: This guide documents accepted protection practices for transmission-to-generation interconnections. It is intended to cover the protection system applications at the interconnections between transmission systems and generation facilities greater than 10 MVA. This guide does not cover distributed energy resources.

Keywords: generation facility, generator owner, IEEE C37.246™, interconnection, interconnection protection, point of interconnection, power system, transmission owner, transmission system

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(corresponding)		Richard Young

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Ali Al Awazi	Randall Groves	Michael Newman
Radoslav Barac	Nathan Gulczynski	James O'Brien
Thomas Barnes	Roger Hedding	Lorraine Padden
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Introduction

This introduction is not part of IEEE Std C37.246–2017, IEEE Guide for Protection Systems of Transmission-to-Generation Interconnections.

This guide presents protection considerations for interconnections between transmission systems and generation facilities.

While some electric utilities have system protection requirements for interconnecting generation to their transmission systems, there had never been an industrywide document that incorporated commonalities between these requirements to drive application consistency. Industry deregulation, resulting in separate ownership of transmission and generation facilities, also contributed to the need for such a document. This guide should be especially beneficial for independent power producers and consulting engineers, who often design these interconnections, by providing instruction based on industry-recognized guidelines rather than on individual requirements of various utilities.

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1. Overview

1.1 Scope

This guide documents accepted protection practices for rgeneration interconnections. It is intended to cover the protection system applications at the interconnections between transmission systems and generation facilities greater than 10 MVA. This guide does not cover distributed energy resources.

1.2 Purpose

This guide provides guidance to those who are responsible for the protection of electrical interconnections between transmission systems and generation facilities greater than 10 MVA. It is not intended to supplant specific transmission or generator owner practices, procedures, requirements, or any contractual agreement between the transmission and generator owners.

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.

IEEE Std C37.2™, IEEE Standard for Electrical Power System Device Functional Numbers, Acronyms, and Contact Designations.^{1,2}

IEEE Std C37.90™, IEEE Standard for Relays and Relay Systems Associated with Electric Power Apparatus.

IEEE Std C37.102™, IEEE Guide for AC Generator Protection.

IEEE Std C37.113™, IEEE Guide for Protective Relay Applications to Transmission Lines.

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