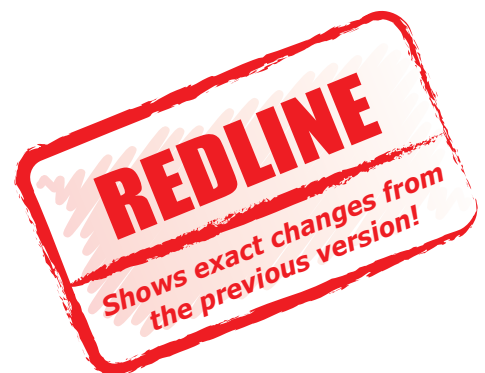




IEEE Standard Definitions for Excitation Systems for Synchronous Machines

IEEE Power Engineering Society

Sponsored by the
Energy Development and Power Generation Committee



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IEEE Standard Definitions for Excitation Systems for Synchronous Machines

Sponsor

**Energy Development and Power Generation Committee
of the
Power Engineering Society**

Approved 8 March 2007

IEEE-SA Standards Board

Abstract: This standard defines elements and commonly used components in excitation systems and contains definitions for excitation systems applied to synchronous machines. An included annex contains one-line block diagrams of some typical excitation systems. These are presented to illustrate the defined terminology referenced in this standard and clarify the understanding of the excitation control system.

Keywords: definitions of excitation controls, excitation block diagrams, excitation control systems, excitation systems terminology, synchronous generator controls

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Introduction

This introduction is not part of IEEE Std 421.1-2007, IEEE Standard Definitions for Excitation Systems for Synchronous Machines.

This standard defines elements and commonly used components in excitation systems and contains definitions for excitation systems applied to synchronous machines. For general requirements of a synchronous machine refer to IEEE Std C50.12™ and IEEE Std C50.13™.^a

A synchronous machine excitation control system operating under automatic control is a feedback control system. Thus, the Terminology of the Excitation System Subcommittee Working Group of the Energy Development and Power Generation (ED&PG) Committee adopted definitions that had a common basis to excitation systems. Efforts were made not to conflict with terms found in the most recent edition of *The Authoritative Dictionary of IEEE Standards Terms* [B11], but to clarify or more fully define terms as related specifically to excitation of synchronous machines.^b

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^a For more information on references, please refer to Clause 2.

^b The numbers in brackets correspond to those in the bibliography in Annex B.

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Contents

1. Overview	1
1.1 Scope	1
2. Normative references.....	1
3. Definitions	2
Annex A (normative) Typical elements and components of excitation control systems.....	10
Annex B (informative) Bibliography.....	22

