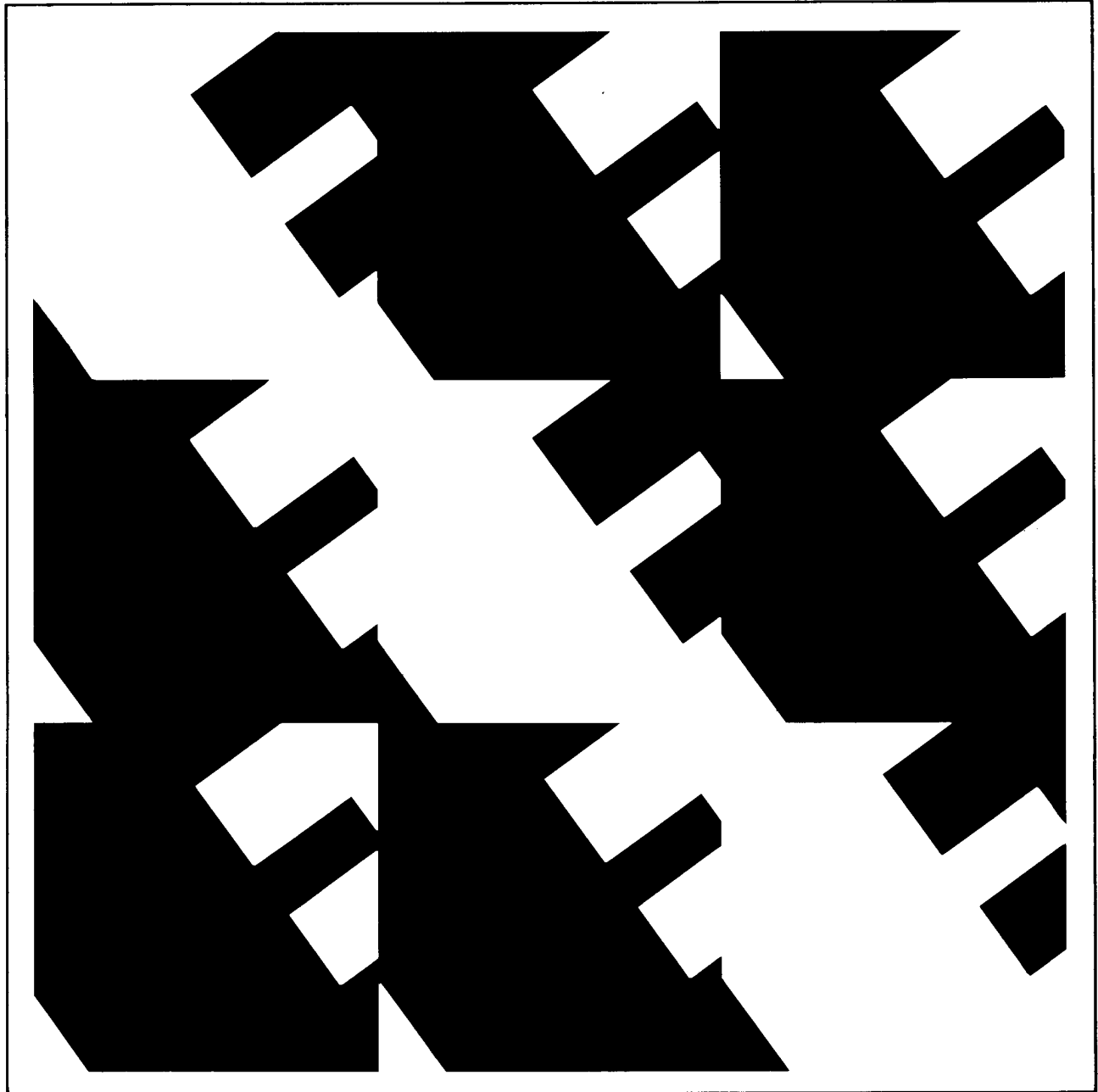


IEEE Recommended Practice for Functional and Performance Characteristics of Control Systems for Steam Turbine-Generator Units



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Sponsor

**Power Generation Committee of the
IEEE Power Engineering Society**

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Foreword

(This Foreword is not a part of IEEE Std 122-1985, IEEE Recommended Practice for Functional and Performance Characteristics of Control Systems for Steam Turbine-Generator Units.)

The formation of a joint AIEE/ASME committee for the purpose of preparing a recommended practice covering the speed-governing of prime movers intended to drive electric generators that may, if desired, be included in prime-mover purchase specifications, was approved by the AIEE Board of Directors on January 30, 1941 and by the ASME Council on June 15, 1941. The personnel of this joint committee was appointed jointly by the Chairman of the AIEE Power Generation Committee and by the ASME Standing Committee on Performance Test Codes under sponsorship of the ASME Division.

The work of the joint committee resulted in the issuance of AIEE No 600, Recommended Specification for Speed-Governing of Steam Turbines Intended to Drive Electric Generators Rated 500 kW and Larger, in May, 1949.

The joint committee was reorganized in 1955 and resulted in the update of AIEE No 600, Recommended Specifications for Speed-Governing of Steam Turbines Intended to Drive Electric Generators Rated 500 kW and Larger.

The joint committee was again reorganized in January, 1980 and instructed to prepare a revision of the Recommended Specification with its designation to be IEEE Std 122. This revision, like the original, is limited in its scope to steam turbine-generators rated at 500 kW and larger, designed to operate on a utility-type system. However, this revision has been expanded to include speed and load controls. In addition, the term *governor* has been replaced by the term *control systems* in the title and in the text to advance the understanding that control systems need not be limited to rotating flyweights but include mechanical, hydraulic, and electronic components. Users of this text should pay particular attention to the parts of Section 4 that indicate the need to specify or agree to limits with the manufacturer. Such specifications or agreements should be made before the manufacturer bids on a proposal.

This recommended practice does not cover emergency governors, or other overspeed control devices, and, in general, devices which are not responsive to speed. Exceptions to the latter were made for turbines designed to operate with controlled steam pressures, as in the case of turbines with initial or exhaust steam-pressure control, automatic-extraction and mixed-pressure turbines, or a combination of these, since the performance of the speed-governing system is affected by the performance of the steam-pressure regulating system.

Transient response was considered as a recommended specification and is represented in Appendix A. *Torsional* and other internal responses are beginning to be understood by the industry but are as much dependent upon the utility grid and operating methods as on the turbine generator itself, so they are not included as part of this recommended practice.

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