



Concrete Foundations FOR Turbine Generators

Analysis, Design, and Construction

Prepared by the Task Committee on
Turbine Generator Foundations

Edited by Hongchun Liu, P.E.

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Task Committee on Turbine Generator Foundations
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Energy Division of the
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PREFACE

In 1987, the Task Committee on Turbine Foundations of the Fossil Power Committee and the Nuclear Energy Committee of the Energy Division of the American Society of Civil Engineers (ASCE) published the first guide for the design of large steam turbine generator foundations.

Since the guide's publication, there have been significant changes in design codes, advances in computer analysis, and increased industry pressure to refine foundation designs. A new task committee was formed in April 2014, under the leadership of the ASCE Energy Division chaired by J. G. (Greg) Soules, to address the wide variation of analysis, design, and construction practice that have been applied throughout the industry for turbine generator foundation designs over the past 30 years in the United States.

Designing a turbine generator foundation requires not only advanced technical expertise in structural and soil dynamics, but also close collaboration with machine manufacturers and other disciplines (mechanical, electrical, and plant design). Different manufacturer requirements, and code provisions that are subjected to interpretations when applied to such foundations, present additional challenges to the design engineers.

This document was prepared by the task committee to provide practical guidance in the analysis, design, and construction of turbine generator foundations. It is a result of significant collaborative efforts from all committee members, as well as contributions from other industry experts and professionals.

The intended audience for this document includes structural design engineers, operating company personnel responsible for establishing structural design criteria and construction standards, and local building officials.

For more than three years, a number of key individuals dedicated significant amounts of time and effort to formulating, originating, and reviewing in detail, either the whole document or specific sections thereof. Those members are identified in the Acknowledgments.