

# IEEE Guide for the Design and Testing of Transmission Modular Restoration Structure Components

Sponsor

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**Abstract:** A generic specification, including design and testing, for transmission modular restoration structure components used by electric utilities is provided.

**Keywords:** box sections, column sections, end plates, foundations, gimbals, guy plates, transmission mutual aid

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# Introduction

(This introduction is not part of IEEE Std 1070-1995, IEEE Guide for the Design and Testing of Transmission Modular Restoration Structure Components.)

In the past few years, most of the utilities in North America have joined together through mutual aid programs to help one another in case of emergencies. As part of the mutual aid for transmission, a modular restoration structure has been developed and is now being used by several utilities. The versatility of this structure and its contribution to our industry has prompted the preparation of the IEEE Guide for the Design and Testing of Transmission Modular Restoration Components.

This guide is generic in its design so that any utility desiring to use the modular concept as part of a mutual aid plan can do so. Structures built to this design would then be compatible with the structures of another company using the same concept. This feature affords many positive results in that savings are realized in crew training and readiness for emergencies, and in the total investment (fewer structures, that is, loan of structures from mutual aid participants) of emergency structures. Of course, this modular concept is not limited to any particular application.

Numerous requests for a generic design of a modular structure have been received from throughout the industry. The Subcommittee on Engineering in the Safety, Maintenance and Operation of Lines (ESMOL), part of the Transmission and Distribution (T & D) Committee of IEEE, accepted this project. A Task Group from the ESMOL subcommittee was formed to complete this task.

This guide represents a significant contribution to our industry that emphasized the spirit of cooperation between diverse groups in the preparation of such a document, and is based on sound engineering principles and accepted operational practices. It is our intention to keep this guide current and to update it as future needs dictate.

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# IEEE Guide for the Design and Testing of Transmission Modular Restoration Structure Components

## 1. Overview

### 1.1 Scope

This guide will provide the electric industry with a generic specification, including design and testing, for transmission modular restoration structure components.

### 1.2 Purpose

The purpose of this guide is to provide the industry with a generic specification that can be used by electric utilities for acquiring transmission modular restoration structure components. This particular design would then be compatible with the modular restoration structures presently in use within the industry and would allow the highly successful plan of transmission mutual aid to be greatly enhanced.

The testing prescribed in this guide provides a high level of confidence between manufacturers and/or suppliers and is intended to promote competitive acquisition practices within the industry.

## 2. References

This guide shall be used in conjunction with the following standards. When the following standards are superseded by an approved revision, the revision shall apply.

Aluminum Association, Technical Specification No. 1, Aluminum Standards and Data, 9th ed., July 1988.

Aluminum Association, Technical Specification No. 25, Qualification Standard for Structural Welding of Aluminum, 1988.

Aluminum Association, Technical Specification No. 33, Engineering Data for Aluminum Structures, 5th ed., Dec. 1986.<sup>1</sup>

ANSI/AWS D1.2-1990, Structural Welding Code—Aluminum (includes ANSI/AWS D1.2A-83, Commentary).<sup>2</sup>

<sup>1</sup>Aluminum Association publications may be purchased from the Publications Department, Aluminum Association, 900 19th Street, N.W., Washington, DC 20006, USA.

<sup>2</sup>ANSI publications are available from the Sales Department, American National Standards Institute, 11 West 42nd Street, 13th Floor, New York, NY 10036, USA.