

The International Electrotechnical Commission
and the
U.S. National Committee of the IEC

A PRACTICAL GUIDE

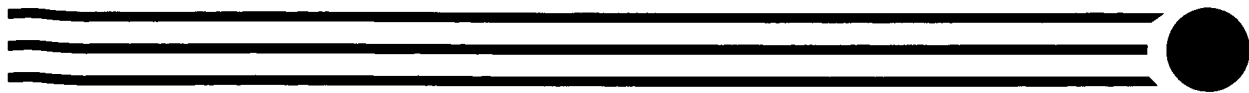


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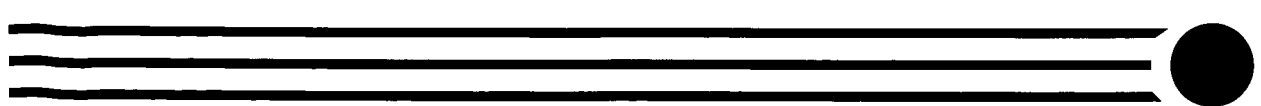
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Foreword

The International Standards Policy Committee (ISPC) of the National Electrical Manufacturers Association (NEMA) directed the development of this guide, which was prepared by NEMA's Engineering Department. The intent was to keep NEMA members informed about issues related to international standards and conformity assessment.

This document provides a general overview of the voluntary international standards organization that is of primary interest to the electroindustries, the International Electrotechnical Commission (IEC). Although several international, regional, and national voluntary and treaty-based standards organizations exist, the IEC has a significant impact on a wide range of NEMA member companies. Brief mention will also be made of the other major international standards organization, the International Organization for Standardization (ISO).

This guide will discuss the:

- International Electrotechnical Commission (IEC) Structures and Procedures
- United States Support Structure for Participation in the IEC through the U.S. National Committee of the IEC (USNC/IEC)
- European Union (EU) organization CENELEC and its special relationship to the IEC

Although much information has been extracted from official documents developed by the previously mentioned organizations, this document is not a definitive text on the operations of the International Electrotechnical Commission, the U.S. National Committee of the IEC, or other national or regional organizations. A list of reference documents has been included in APPENDIX "A". These documents provide detailed information on the practices and procedures of these organizations and should be considered as definitive sources by persons participating in IEC, USNC/IEC, United States Technical Advisory Group (U.S. TAG), or CENELEC (European Committee for Electrotechnical Standardization) activities. Individuals participating in any facet of these activities should consider developing a basic reference library. The content of the library should be

determined by the level at which the individual participates.

On the basis of reference material listed in Appendix A, this guide provides an overview of the voluntary international standards system and identifies the interrelationships between various organizations.

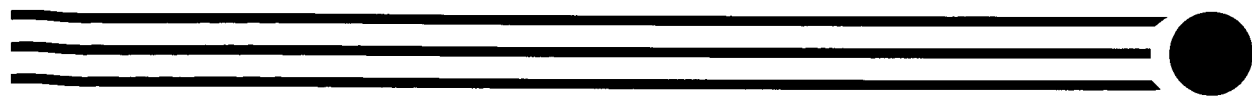
The goals of this document are to:

- Assist those members who would like to learn more about the international standards process
- Help members with experience in international standards to understand changes that have occurred in the last few years and help prepare for other expected changes

The voluntary international standards process is complex. There are many demands on the system, resources are limited, and voluntary participation is a key element. For standards to be accepted, they must be not only technically correct but also representative of the consensus opinion of a large percentage of industrialized nations. To meet these wide-ranging requirements, the IEC has evolved into a complex organization with the flexibility and control needed to operate effectively. International standards are becoming an increasingly important part of national and international commerce. Many emerging nations, such as China, have expressed a desire to adopt international standards rather than develop national standards. The European Union has also indicated it will rely heavily on international standards when establishing a European Single Internal Market.

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Chapter 1

Introduction

1.1 Value of International Standards

International standards are of value to both manufacturers and users of products. International standards benefit manufacturers by enabling them to access international markets with a single set or, at most, a limited set of products. Users benefit by being able to purchase and use the best products, regardless of where in the world they are manufactured and without costly customization.

Where international standards do not exist, manufacturers must produce products that comply with a multitude of product standards developed by individual countries. Where national standards do not exist, companies may have to develop their own standards. As broader geographic markets are entered, companies must increasingly rely on national and international standards in place of company standards.

In some cases, national standards are developed to reflect the legitimate needs or customs of a country. It is not difficult to understand why electrical safety standards in the United States might differ from the safety standards in developing countries. Since these differences can be rationally justified by national conditions, international harmonization of standards may not always be possible. Other national standards, though, are developed by countries that are trying to protect national industries. However, there is increasing pressure from governments and customers alike for national standards to be harmonized with international standards.

National standards do not have to completely prohibit the importation of foreign products to be effective barriers to trade. Instead, a country can use national standards to make it uneconomical for foreign firms to offer products that must comply with the requirements of a limited market. The end result is two fold:

- National standards act as barriers to free trade. Unless the market within a country is large, creating products that comply with standards adopted by one or even a few countries may not be economical for companies wishing to export to these markets. These barriers to trade are not an effective shelter for United States firms, since the United States is the largest homogeneous market in the world.

- National standards deny a country's manufacturers access to the most effective, efficient, and lowest cost products. In the long run, this may further reduce the ability of national industries to be competitive.

Although the goal of developing international standards is to promote the spread of technology and enhance international trade, countries must take care to preserve those legitimate needs or customs that are embedded in national standards. This can best be done by active participation in the international standards process.

1.2 Establishment of International Standardization Groups

Since the early 1900s business has realized that voluntary international standards play an important role in the application of technology and in international trade. The International Electrotechnical Commission (IEC), an organization created to develop voluntary international standards in electrical and, now, electronic engineering, has been in existence since 1906. The purpose of the IEC is essentially three-fold: (1) to develop standards to ensure that products perform satisfactorily and safely; (2) to assess conformity to standards; and (3) to assure the quality in standards. The development of standards for the safe use of electricity helped to nurture the emerging electrical industry during the early 1900s.

Attempts to develop voluntary, international standards in other areas were initiated during the early 1900s, but many of these early