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IEEE Std 3006.9™-2013

IEEE Recommended Practice for Collecting Data for Use in Reliability, Availability, and Maintainability Assessments of Industrial and Commercial Power Systems

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IEEE Recommended Practice for Collecting Data for Use in Reliability, Availability, and Maintainability Assessments of Industrial and Commercial Power Systems

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Abstract: Collection of data for use in reliability, availability, and maintainability assessments of industrial and commercial power systems is described in this recommended practice. It is likely to be of greatest value to the power-oriented engineer with limited experience in the area of reliability. It can also be an aid to all engineers responsible for the electrical design of industrial and commercial power systems.
Keywords: data collection forms, database analysis, database development, design reliable industrial and commercial power systems, equipment reliability, IEEE 3006.9™, maintainability, reliability analysis

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Introduction

This introduction is not part of IEEE Std 3006.9-2013, IEEE Recommended Practice for Collecting Data for Use in Reliability, Availability, and Maintainability Assessments of Industrial and Commercial Power Systems.

IEEE 3000 Standards Collection™

This recommended practice was developed by the Technical Books Coordinating Committee of the Industrial and Commercial Power Systems Department of the Industry Applications Society as part of a project to repackage the popular IEEE Color Books®. The goal of this project is to speed up the revision process, eliminate duplicate material, and facilitate use of modern publishing and distribution technologies.

When this project is completed, the technical material in the thirteen IEEE Color Books will be included in a series of new standards—the most significant of which will be a new standard, IEEE Std 3000™, IEEE Recommended Practice for the Engineering of Industrial and Commercial Power Systems. The new standard will cover the fundamentals of planning, design, analysis, construction, installation, startup, operation, and maintenance of electrical systems in industrial and commercial facilities. Approximately 60 additional dot standards, organized into the following categories, will provide in-depth treatment of many of the topics introduced by IEEE Std 3000™:

— Power Systems Design (3001 series)

— Power Systems Analysis (3002 series)

— Power Systems Grounding (3003 series)

— Protection and Coordination (3004 series)

— Emergency, Standby Power, and Energy Management Systems (3005 series)

— Power Systems Reliability (3006 series)

— Power Systems Maintenance, Operations, and Safety (3007 series)

In many cases, the material in a dot standard comes from a particular chapter of a particular IEEE Color Book. In other cases, material from several IEEE Color Books has been combined into a new dot standard.

The material in this recommended practice largely comes from Chapter 11 of IEEE Std 493™ (*IEEE Gold Book™*).

IEEE Std 3006.9™

Five categories of information contain the necessary data for reliability modeling: site identification, site one line drawings, nameplate information, critical equipment designation and sparing, and maintenance data. When combined, this information gives the analyst all the necessary data to populate a reliability model. Data collection for facilities is not intended to be done in a single setting nor in a single month. This is an ongoing activity that should be completed in as timely a manner as possible without impacting the readiness of the facility. Once completed, updates to the information are only necessary as maintenance is performed on the equipment.

Contents

IEEE Recommended Practice for Collecting Data for Use in Reliability, Availability, and Maintainability Assessments of Industrial and Commercial Power Systems

1. Overview

1.1 Scope

This recommended practice describes how to collect data for use in reliability, availability, and maintainability assessments of industrial and commercial power systems. It is likely to be of greatest value to the power-oriented engineer with limited experience in the area of reliability. It can also be an aid to all engineers responsible for the electrical design of industrial and commercial power systems.

2. Normative references

The following referenced documents are indispensable for the application of this document (i.e., they must be understood and used, so each referenced document is cited in text and its relationship to this document is explained). For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments or corrigenda) applies.

IEEE Std 493™ (*IEEE Gold Book™*), Design of Reliable Industrial and Commercial Power Systems.