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IEEE Std 3006.2™-2016

Recommended Practice
forEvaluating the Reliability
of Existing Industrial and
Commercial Power Systems

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IEEE Recommended Practice for Evaluating the Reliability of Existing Industrial and Commercial Power Systems

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Approved 30 June 2016

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Abstract: Described in this recommended practice are criteria for evaluating the reliability of existing 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.

Keywords: availability, IEEE 3006.2™, reliability, reliability analysis

The Institute of Electrical and Electronics Engineers, Inc.
3 Park Avenue, New York, NY 10016-5997, USA

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PDF: ISBN 978-0-5044-2136-2 STD20997
Print: ISBN 978-0-5044-2137-9 STDPD20997

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Robert Arno, *Chair*
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Michael Simon	Robert Schuerger

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Introduction

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When this project is completed, the technical material in the 13 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™:

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— Emergency, Standby Power, and Energy Management Systems (3005 series)
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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 4 of IEEE Std 493™ (*IEEE Gold Book*™).

IEEE Std 3006.2™

This publication provides a recommended practice for the power engineer. It is likely to be of greatest value to the power-oriented engineer with design experience. It can also be an aid to all engineers responsible for comparing different designs and assessing the potential performance of the system. However, it is not intended as a replacement for the many excellent engineering texts and handbooks commonly in use, nor is it detailed enough to be a design manual. It should be considered a guide and general reference for commercial and industrial facilities.

Tables, charts, and other information that have been extracted from codes, standards, and other technical literature are included in this publication. Their inclusion is for illustrative purposes; where technical accuracy is important, the latest version of the referenced document should be consulted to assure use of complete, up-to-date, and accurate information.

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Contents

1. Scope 10

2. Normative references 10

3. Definitions and acronyms 11
   3.1 Definitions 11
   3.2 Acronyms 11

4. General 11

5. Evaluation methodology—overview 12
   5.1 Utility supply 12
   5.2 Configuration 13
   5.3 Control and protection 13
   5.4 Physical installation 13
   5.5 Operations and maintenance 13

6. Utility supply availability 13
   6.1 Use of historical data 13
   6.2 Operational issues 14
   6.3 Multiple sources 15
   6.4 Power quality considerations 15

7. Configuration 16
   7.1 Where to begin—the one-line diagram 16
   7.2 Analysis 17

8. Assessing control and protection 18

9. Physical assessment 20

10. Operations and maintenance 21
   10.1 Electrical acceptance testing and commissioning 21
   10.2 Training 22
   10.3 System documentation 22
   10.4 Spare parts levels 22

11. Other vulnerable areas 24

12. Conclusion 25

Annex A (informative) Bibliography 26

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1. Scope

This recommended practice describes how to evaluate the reliability of existing 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 design of industrial and commercial power systems. It contains recommendations for assessing power system conditions and assembling the data required for full reliability calculations for large or critical facilities as well as recommendations for inspection, maintenance, and engineering activities that will benefit smaller or less critical facilities.

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 141™, IEEE Recommended Practice for Electric Power Distribution for Industrial plants (IEEE Red Book™).[1,2]

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