

IEEE Guide for Automatic Reclosing of Circuit Breakers for AC Distribution and Transmission Lines

IEEE Power & Energy Society

Sponsored by the
Power System Relaying Committee

IEEE
3 Park Avenue
New York, NY 10016-5997
USA

IEEE Std C37.104™-2012
(Revision of
IEEE Std C37.104-2002)

6 July 2012

IEEE Guide for Automatic Reclosing of Circuit Breakers for AC Distribution and Transmission Lines

Sponsor

Power System Relaying Committee
of the
IEEE Power & Energy Society

Approved 8 June 2012

IEEE-SA Standards Board

Abstract: Current reclosing practices for transmission and distribution lines are described. Application considerations and coordination practices of reclosing are also discussed.

Keywords: automatic operation, circuit breaker, distribution, IEEE C37.104, reclosing, transmission

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

Copyright © 2012 by The Institute of Electrical and Electronics Engineers, Inc.
All rights reserved. Published 6 July 2012. Printed in the United States of America.

IEEE is a registered trademark in the U.S. Patent & Trademark Office, owned by The Institute of Electrical and Electronics Engineers, Incorporated.

PDF: ISBN 978-0-7381-7293-4 STD97268
Print: ISBN 978-0-7381-7345-0 STDPD97268

IEEE prohibits discrimination, harassment, and bullying. For more information, visit <http://www.ieee.org/web/aboutus/whatis/policies/p9-26.html>. No part of this publication may be reproduced in any form, in an electronic retrieval system or otherwise, without the prior written permission of the publisher.

This is a preview. Click here to purchase the full publication.

Notice and Disclaimer of Liability Concerning the Use of IEEE Documents: IEEE Standards documents are developed within the IEEE Societies and the Standards Coordinating Committees of the IEEE Standards Association (IEEE-SA) Standards Board. IEEE develops its standards through a consensus development process, approved by the American National Standards Institute, which brings together volunteers representing varied viewpoints and interests to achieve the final product. Volunteers are not necessarily members of the Institute and serve without compensation. While IEEE administers the process and establishes rules to promote fairness in the consensus development process, IEEE does not independently evaluate, test, or verify the accuracy of any of the information or the soundness of any judgments contained in its standards.

Use of an IEEE Standard is wholly voluntary. IEEE disclaims liability for any personal injury, property or other damage, of any nature whatsoever, whether special, indirect, consequential, or compensatory, directly or indirectly resulting from the publication, use of, or reliance upon any IEEE Standard document.

IEEE does not warrant or represent the accuracy or content of the material contained in its standards, and expressly disclaims any express or implied warranty, including any implied warranty of merchantability or fitness for a specific purpose, or that the use of the material contained in its standards is free from patent infringement. IEEE Standards documents are supplied "AS IS."

The existence of an IEEE Standard does not imply that there are no other ways to produce, test, measure, purchase, market, or provide other goods and services related to the scope of the IEEE standard. Furthermore, the viewpoint expressed at the time a standard is approved and issued is subject to change brought about through developments in the state of the art and comments received from users of the standard. Every IEEE standard is subjected to review at least every ten years. When a document is more than ten years old and has not undergone a revision process, it is reasonable to conclude that its contents, although still of some value, do not wholly reflect the present state of the art. Users are cautioned to check to determine that they have the latest edition of any IEEE standard.

In publishing and making its standards available, IEEE is not suggesting or rendering professional or other services for, or on behalf of, any person or entity. Nor is IEEE undertaking to perform any duty owed by any other person or entity to another. Any person utilizing any IEEE Standards document, should rely upon his or her own independent judgment in the exercise of reasonable care in any given circumstances or, as appropriate, seek the advice of a competent professional in determining the appropriateness of a given IEEE standard.

Translations: The IEEE consensus development process involves the review of documents in English only. In the event that an IEEE standard is translated, only the English version published by IEEE should be considered the approved IEEE standard.

Official Statements: A statement, written or oral, that is not processed in accordance with the IEEE-SA Standards Board Operations Manual shall not be considered the official position of IEEE or any of its committees and shall not be considered to be, nor be relied upon as, a formal position of IEEE. At lectures, symposia, seminars, or educational courses, an individual presenting information on IEEE standards shall make it clear that his or her views should be considered the personal views of that individual rather than the formal position of IEEE.

Comments on Standards: Comments for revision of IEEE Standards documents are welcome from any interested party, regardless of membership affiliation with IEEE. However, IEEE does not provide consulting information or advice pertaining to IEEE Standards documents. Suggestions for changes in documents should be in the form of a proposed change of text, together with appropriate supporting comments. Since IEEE standards represent a consensus of concerned interests, it is important to ensure that any responses to comments and questions also receive the concurrence of a balance of interests. For this reason, IEEE and the members of its societies and Standards Coordinating Committees are not able to provide an instant response to comments or questions except in those cases where the matter has previously been addressed. Any person who would like to participate in evaluating comments or revisions to an IEEE standard is welcome to join the relevant IEEE working group at <http://standards.ieee.org/develop/wg/>.

Comments on standards should be submitted to the following address:

Secretary, IEEE-SA Standards Board
445 Hoes Lane
Piscataway, NJ 08854
USA

Photocopies: Authorization to photocopy portions of any individual standard for internal or personal use is granted by The Institute of Electrical and Electronics Engineers, Inc., provided that the appropriate fee is paid to Copyright Clearance Center. To arrange for payment of licensing fee, please contact Copyright Clearance Center, Customer Service, 222 Rosewood Drive, Danvers, MA 01923 USA; +1 978 750 8400. Permission to photocopy portions of any individual standard for educational classroom use can also be obtained through the Copyright Clearance Center.

Notice to users

Laws and regulations

Users of IEEE Standards documents should consult all applicable laws and regulations. Compliance with the provisions of any IEEE Standards document does not imply compliance to any applicable regulatory requirements. Implementers of the standard are responsible for observing or referring to the applicable regulatory requirements. IEEE does not, by the publication of its standards, intend to urge action that is not in compliance with applicable laws, and these documents may not be construed as doing so.

Copyrights

This document is copyrighted by the IEEE. It is made available for a wide variety of both public and private uses. These include both use, by reference, in laws and regulations, and use in private self-regulation, standardization, and the promotion of engineering practices and methods. By making this document available for use and adoption by public authorities and private users, the IEEE does not waive any rights in copyright to this document.

Updating of IEEE documents

Users of IEEE Standards documents should be aware that these documents may be superseded at any time by the issuance of new editions or may be amended from time to time through the issuance of amendments, corrigenda, or errata. An official IEEE document at any point in time consists of the current edition of the document together with any amendments, corrigenda, or errata then in effect. In order to determine whether a given document is the current edition and whether it has been amended through the issuance of amendments, corrigenda, or errata, visit the IEEE-SA Website at <http://standards.ieee.org/index.html> or contact the IEEE at the address listed previously. For more information about the IEEE Standards Association or the IEEE standards development process, visit IEEE-SA Website at <http://standards.ieee.org/index.html>.

Errata

Errata, if any, for this and all other standards can be accessed at the following URL: <http://standards.ieee.org/findstds/errata/index.html>. Users are encouraged to check this URL for errata periodically.

Patents

Attention is called to the possibility that implementation of this standard may require use of subject matter covered by patent rights. By publication of this standard, no position is taken by the IEEE with respect to the existence or validity of any patent rights in connection therewith. If a patent holder or patent applicant has filed a statement of assurance via an Accepted Letter of Assurance, then the statement is listed on the IEEE-SA Website at <http://standards.ieee.org/about/sasb/patcom/patents.html>. Letters of Assurance may indicate whether the Submitter is willing or unwilling to grant licenses under patent rights without compensation or under reasonable rates, with reasonable terms and conditions that are demonstrably free of any unfair discrimination to applicants desiring to obtain such licenses.

Essential Patent Claims may exist for which a Letter of Assurance has not been received. The IEEE is not responsible for identifying Essential Patent Claims for which a license may be required, for conducting inquiries into the legal validity or scope of Patents Claims, or determining whether any licensing terms or conditions provided in connection with submission of a Letter of Assurance, if any, or in any licensing agreements are reasonable or non-discriminatory. Users of this standard are expressly advised that determination of the validity of any patent rights, and the risk of infringement of such rights, is entirely their own responsibility. Further information may be obtained from the IEEE Standards Association.

Participants

At the time this IEEE guide was completed, the D2 Working Group had the following membership:

Gary L. Kobet, *Chair*
Gregory Sessler, *Vice Chair*

George Bartok
Kenneth Behrendt
Dean Bender
Martin Best
Albert N. Darlington
Alla Deronja
Dominick Fontana
Fredric Friend
Robert Frye
Gerald Johnson
Meyer Kao

Don Lukach
Bruce Mackie
Walter McCannon
Michael Meisinger
Adi Mulawarman
Pratap Mysore
James O'Brien
Russ Patterson
Claire Patti
Joe Perez

Ryland Revelle
Tony Seegers
Bill Strang
Charles Sufana
Philip Tatro
Quintin Verzosa
Ilia Voloh
John Wang
Phil Waudby
Thomas Wiedman
Richard Young

The following members of the individual balloting committee voted on this guide. Balloters may have voted for approval, disapproval, or abstention.

William Ackerman
Satish Aggarwal
Ali Al Awazi
Steven Alexanderson
George Bartok
David Bassett
Philip Beaumont
Kenneth Behrendt
Steven Bezner
Stan Billings
Wallace Binder
Kenneth Birt
Thomas Blackburn
Chris Brooks
Gustavo Brunello
Eldridge Byron
Paul Cardinal
Stephen Conrad
James Cornelison
Randall Crellin
Randall Cunico
Kevin Donahoe
Gary Donner
Michael Dood
Ahmed Elneweihi
Gary Engmann
Dan Evans
Marcel Fortin
Fredric Friend
Doaa Galal
Rafael Garcia
David Gilmer
Mietek Glinkowski
Jalal Gohari
Stephen Grier
Randall Groves
Wayne Hartmann

Roger Hedding
Jerry Hohn
David Horvath
Joseph Jancauskas
Gerald Johnson
Gael Kennedy
Yuri Khersonsky
James Kinney
Gary L. Kobet
Joseph L. Koepfinger
Jim Kulchisky
Chung-Yiu Lam
Raluca Lascu
Albert Livshitz
Federico Lopez
Greg Luri
Bruce Mackie
William McBride
Walter McCannon
Michael McDonald
Nigel McQuin
Steven Meiners
Michael Meisinger
Dean Miller
Adi Mulawarman
Jerry Murphy
R. Murphy
Arthur Neubauer
Michael S. Newman
Joe Nims
James O'Brien
Ted Olsen
Mohamed Omran
Lorraine Padden
Mirko Palazzo
Donald Parker
Christopher Petrola

Robert Pettigrew
Farnoosh Rahmatian
Moises Ramos
Ryland Revelle
Michael Roberts
Charles Rogers
Bob Saint
Miriam Sanders
Bartien Sayogo
Thomas Schossig
Tony Seegers
Gregory Sessler
Devki Sharma
Gil Shultz
James Smith
Jerry Smith
Joshua Smith
Gary Stodter
Charles Sufana
James Swank
Michael Swearingen
Richard Taylor
William Taylor
Maria Tomica
Demetrios Tziouvaras
Eric Udren
John Vergis
Quintin Verzosa
Ilia Voloh
John Wang
Solveig Ward
Yingli Wen
Kenneth White
Thomas Wiedman
Philip Winston
Richard Young
Jian Yu