P115

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Type of Project: Modification to Approved PAR
PAR Request Date: 16-Jan-2009
PAR Approval Date: 19-Mar-2009
PAR Expiration Date: 31-Dec-2009
Status: Modification to a Previously Approved PAR for the Revision of a Standard 115-1995
Root PAR: P115 **Approved on:** 04-Mar-2005
Project Record: 115

1.1 Project Number: P115
1.2 Type of Document: Guide
1.3 Life Cycle: Full Use

2.1 Title: Guide for Test Procedures for Synchronous Machines
Part I - Acceptance and Performance Testing
Part II - Test Procedures and Parameter Determination for Dynamic Analysis

Old Title: Standard for Test Procedures for Synchronous Machines

3.1 Working Group: Generator SC - Test Procedure for Synchronous Machines - WG#7 (PE/EM/GEN - WG115)
Contact Information for Working Group Chair
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None

3.2 Sponsoring Society and Committee: IEEE Power & Energy Society/Electric Machinery (PE/EM)
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4.1 Type of Ballot: Individual
4.2 Expected Date of submission of draft to the IEEE-SA for Initial Sponsor Ballot: 04/2009
4.3 Projected Completion Date for Submittal to RevCom: 10/2009

5.1 Approximate number of people expected to be actively involved in the development of this project: 27

5.2 Scope: This guide contains instructions for conducting generally applicable and accepted tests to determine the performance characteristics of synchronous machines. Although the tests described are applicable in general to synchronous generators, synchronous motors (larger than fractional horsepower), synchronous condensers, and synchronous frequency changers, the descriptions make reference primarily to synchronous generators and synchronous motors. The tests described may be applied to motors and generators, as needed, and no attempt is made to partition this guide into clauses applying to motors and clauses applying to generators. It is not intended that this guide shall cover all possible tests, or tests of a research nature, but only those general methods that may be used to obtain performance data. The schedule of factory and field tests, which may be required on new equipment, is normally specified by

Old Scope: The scope of the project is to: a) New test results published in IEEE (see attached) requires revision of section 7.3.6. b) In view of increased interest in vibration test procedures should be added.

applicable standards or by contract specifications. This guide should not be interpreted as requiring any specific test in a given transaction or implying any guarantee as to specific performance indices or operating conditions.
The term specified conditions for tests as used in this guide will be considered as rated conditions unless otherwise agreed upon. Rated conditions apply usually to the quantities listed on the machine nameplate.

5.3 Is the completion of this standard dependent upon the completion of another standard: No

5.4 Purpose: The guide will not contain a purpose clause. The purpose of the project is to:
a) Section 7.3.6 needs revision.
b) A new section on vibration tests needs to be added.
c) The 1995 draft needs to be updated to reflect state of the art.

Old Purpose: The purpose of the project is to: a) Section 7.3.6 needs revision. b) A new section on vibration tests needs to be added. c) The 1995 draft needs to be updated to reflect state of the art.

5.5 Need for the Project: The standard does not include methods of measurement of vibration in synchronous machines. Vibration tests are now required for both diagnostic and acceptance testing by industrial customers and utilities. New test results reported in IEEE papers require revision of acceleration torque test procedure in the current document. The primary stakeholders for the project are the manufacturers of synchronous machines and their customers.
5.6 Stakeholders for the Standard: Manufacturers and users of synchronous machines.

Intellectual Property
6.1.a. Has the IEEE-SA policy on intellectual property been presented to those responsible for preparing/submitting this PAR prior to the PAR submittal to the IEEE-SA Standards Board?: Yes
If yes, state date: 20-Jul-2008
6.1.b. Is the Sponsor aware of any copyright permissions needed for this project?: No
6.1.c. Is the Sponsor aware of possible registration activity related to this project?: No

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7.1 Are there other standards or projects with a similar scope?: No
7.2 International Activities
a. Adoption
Is there potential for this standard (in part or in whole) to be adopted by another national, regional or international organization?: Do Not Know
Organization:
Technical Committee Name:
Technical Committee Number:
Contact Name:
Phone:
Email:
b. Joint Development
Is it the intent to develop this document jointly with another organization?: No
c. Harmonization
Are you aware of another organization that may be interested in portions of this document in their standardization development efforts?: No

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8.1 Additional Explanatory Notes (Item Number and Explanation): The working group would like to keep the same title as the existing document.
5.2 This guide is a revision of the IEEE Std. 115 1995 (R2002) and contains the following updates:
A new clause 3.16 on vibration testing to recommend procedures for performing vibration tests according to current industry practices.
Revised section 7.3.6 to correct errors in the prevision addition.

Updated procedures to reflect the state of the art.
Reedited all equations to make them flexible to further changes and corrections.
Added an annex on the load rejection test procedure in section 11

Updated references and bibliographies.
At the time of revision of this document, a separate IEEE working group is working to develop a guide for superconducting machines.

Although some test procedures described in this revision of IEEE 115 might be applicable to superconducting machines, the working group has decided that insufficient experience with commercially available machines exists to make it feasible to cover testing procedures for this emerging technology. The decision to include superconducting machines to the scope of future revisions of IEEE 115 will depend on the advancement of the state of the art of the technology and the emergence of consensus concerning testing procedures.