

PC50.13

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Type of Project: Revision to IEEE Standard C50.13-2014

PAR Request Date: 02-Apr-2019

PAR Approval Date: 21-May-2019

PAR Expiration Date: 31-Dec-2023

Status: PAR for a Revision to an existing IEEE Standard

Root Project: C50.13-2014

1.1 Project Number: PC50.13

1.2 Type of Document: Standard

1.3 Life Cycle: Full Use

2.1 Title: Standard for 50 and 60 Hz Synchronous Generators for Non-Hydraulic Applications Rated 10 MVA and Above

Changes in title: ~~IEEE Standard for Cylindrical Rotor 50 Hz and 60 Hz Synchronous Generators~~ for Non-Hydraulic Applications Rated 10 MVA and Above

3.1 Working Group: Generator SC - Coordination of C50s and IEC - WG#8 (PE/EM/GEN - WG8)

Contact Information for Working Group Chair

Name: Kay Chen

Email Address: ke.chen@siemens.com

Phone: 9802634897

Contact Information for Working Group Vice-Chair

None

3.2 Sponsoring Society and Committee: IEEE Power and Energy Society/Electric Machinery (PE/EM)

Contact Information for Sponsor Chair

Name: Kay Chen

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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: 11/2020

4.3 Projected Completion Date for Submittal to RevCom

Note: Usual minimum time between initial sponsor ballot and submission to Revcom is 6 months.: 10/2021

5.1 Approximate number of people expected to be actively involved in the development of this project: 20

5.2 Scope: The requirements in this standard apply to all 50 Hz and 60 Hz synchronous generators driven by various sources such as reciprocating engines, steam turbines and/or by combustion gas turbines. The drive may be direct or through a gearbox or other device that permits different speeds for the turbine and the generator. Also included are synchronous compensators (condensers) of the same output range connected to a grid. Hydraulic driven applications are covered in ANSI/IEEE C50.12.

The generators covered by this standard are to have rated outputs of 10 MVA and above. Generators below this rating are generally covered by NEMA-MG 1 [B19]

Changes in scope: The requirements in this standard apply to all 50 Hz and 60 Hz; ~~two pole and four pole, cylindrical rotor~~ synchronous generators driven by **various sources such as reciprocating engines, steam turbines and/or by combustion gas turbines.** The drive may be direct or through a gearbox or other device that permits different speeds for the turbine and the generator. **Also included are synchronous compensators (condensers) of the same output range connected to a grid. Hydraulic driven applications are covered in ANSI/IEEE C50.12.** The generators covered by this standard are to have rated outputs of 10 MVA and above. ~~Cylindrical rotor, Generators two pole and four pole generators~~ below this rating are generally covered by NEMA-MG 1: [B19]

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

5.4 Purpose: The purpose of this standard is to establish a base set of accepted requirements for 50 Hz and 60 Hz electrical generators above 10 MVA driven by various sources such as reciprocating engines,

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steam turbines or combustion turbines. Also included are synchronous compensators (condensers) of the same output range connected to a grid.

The standard is used for specification of new generators, and also aspects of this standard may be applied for refurbishment of existing generators.

It is also intended that the standard provides guidance for determining other requirements that may stem from coordination with the specific applications including the prime mover characteristics, site conditions, and system interconnection.

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5.5 Need for the Project: This project is intended to perform the following:

1. Incorporate comments from the 2014 vote, including harmonization with the IEC 60034 series as much as possible.
2. Incorporate the recommendations from the EMC Grid Code Task Force shown in the forthcoming PES-TR69 particularly considering the significance of the present energy transition whereby large scale of introduction of renewable generation is occurring.
3. Update the title, scope and content to reflect the addition of salient pole machines and assure coverage of synchronous condenser applications.

5.6 Stakeholders for the Standard: Power engineers, manufacturers, utilities and universities.

Intellectual Property

6.1.a. Is the Sponsor aware of any copyright permissions needed for this project?: No

6.1.b. Is the Sponsor aware of possible registration activity related to this project?: No

7.1 Are there other standards or projects with a similar scope?: No

7.2 Joint Development

Is it the intent to develop this document jointly with another organization?: No

8.1 Additional Explanatory Notes: 5.2: C.50.12-2005: IEEE Standard for Salient Pole 50 and 60 HZ Synchronous Generators and Generators/Motors for Hydraulic Turbine Applications Rated 5MVA and Above. Source: IEEE-SA

MG-1-2016: Motors and Generators. Source: National Electrical Manufacturers Association