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Guidance on Practice for Power Generators

GP 12-80

BP GROUP
ENGINEERING TECHNICAL PRACTICES

Foreword

This is the first issue of Engineering Technical Practice (ETP) GP 12-80. This Guidance on Practice (GP) is based on parts of heritage documents from the merged BP companies as follows:

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1. Scope

This GP document provides guidance for design, installation, operation and maintenance of synchronous generators suitable for operation on alternating current supplies at voltages in excess of 1kV but not exceeding 15kV.

2. Normative references

The following normative documents contain requirements that, through reference in this text, constitute requirements of this technical practice. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this technical practice are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies.

BP Engineering Technical Practices (ETP)

GIS 12-801	Guidance on Industry Standard for Power Generators (IEC)
GIS 12-802	Guidance on Industry Standard for Power Generators (ANSI)
GP 12-03	Guidance on Practice for Power System Protection and Control
GP 12-10	Guidance on Practice for Switchgear and Controlgear
GP 12-25	Guidance on Practice for Earthing/Grounding
GP 12-55	Guidance on Practice for Inspection & Testing of Electrical Systems
GP 30-01	Guidance on Practice for Temperature Instruments
GP 30-25	Guidance on Practice for Common Field Instrument Issues
GP 30-65	Guidance on Practice for Control Panels

Institute of Electrical and Electronic Engineers (IEEE)

IEEE 429	Recommended Practice for Thermal Evaluation of Sealed Insulation Systems for AC Electric Machinery Employing Form-Wound Pre-insulated Stator Coils for Machines Rated 6900V and Below
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International Organization for Standardization

ISO 281	Rolling bearings – Dynamic load rating and rating life
ISO 1680	Acoustics – Test code for the measurement of airborne noise emitted by rotating electrical machinery.

3. General

Synchronous generators suitable for operation on alternating current supplies at voltages in excess of 1kV but not exceeding 15kV should be of salient-pole rotor construction with integral brushless exciter. In certain applications however, a fast response (static) excitation system may be required, and guidance on the specification of such systems is provided.

Generator selection shall consider the requirements of the prime mover, characteristics of supply voltage available, and installation environment.

Note: This GP does not provide guidance on the specification of special design machines (e.g. high speed “super-synchronous” generators)

