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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 32821-2025

Replacing GB/T 32821-2016

Gas turbine applications - Safety

燃气轮机应用 安全

(English Translation)

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

This document replaces GB/T 32821-2016 Gas Turbine Application Safety. Compared with GB/T 32821-2016, except for the structural adjustment, Besides the editorial changes, the main technical changes are as follows.

- a) Added the element "fan blade sparks" (see 5.18.3);
- b) Deleted "Maintenance and calibration" of combustible gas detection (see 5.19.6 of the 2016 edition);
- c) Added the element "cybersecurity" (see 5.20.10);
- d) Changed the element "public supply" to "public air supply" (see 5.24.4, 5.24.4 of the

2016 edition);

e) The element "noise" has been added (see 7.9).

This document is equivalent to ISO 21789:2022 "Safety of gas turbine operations".

Introduction

This document is a Class C standard in GB/T 15706-2012.

This document is intended for the following groups.

---Machine manufacturers (small, medium and large enterprises);

--- Health and safety agencies (regulatory agencies, prevention agencies, market surveillance, etc.).

Other organizations affected by the above groups.

---Users/employers (small, medium and large enterprises);

---Users/employees (such as trade unions and organizations with special needs);

---Service providers, such as maintenance (small, medium and large enterprises);

--- Consumer (where the consumer plans to use the machinery).

The above groups may have been involved in the drafting of this document.

This document covers the relevant machines and the hazards they present, hazardous situations that may be encountered, and potential dangerous accidents.

For machines designed and manufactured in accordance with the provisions of this Category C standard, if the provisions of this Category C standard differ from those of Category A or Category B standards, the provisions of this C-type standard take precedence over those of other standards.

If local or national regulations accept other established codes or standards, or provide alternative national codes or standards that provide equivalent requirements for achieving risk reduction, If there are no international or national standards, the use of these alternative specifications or standards is allowed.

The scope of application of the referenced documents is limited to the main body of this document. All dated referenced standards are applicable only if their subsequent versions meet the requirements of this document.

The requirements of this document for safety issues and identified hazards may be applied to subsequent versions of the standard.

Only the text of this clause and the referenced documents in this clause shall apply.

Gas Turbine Application Safety

1 Scope

This document specifies various types of open (simple, coupled) reactors for use on land and at sea, including floating platforms, using liquid or gaseous fuels.

Combination, recuperation, reheat, etc.) cycles of aviation-derived and industrial gas turbines (hereinafter referred to as "gas turbines"), as well as safety-related control, Safety requirements for detection systems and necessary auxiliary facilities.

This document applies to the mechanical, electrical and pressure equipment components and systems of gas turbines, including but not limited to gas turbine auxiliary gear this document also covers the installation of Safety risks, such as exhaust purge or drain.

This document details the anticipated significant hazards associated with aircraft-derived and industrial gas turbines and identifies potential mitigation or this document deals with hazards to human health and the environment. It does not cover hazards related to human health.

equipment damage not related to personal health or environmental hazards.

The purpose of this document is to ensure that the design, manufacture, operation and maintenance of equipment throughout its service life comply with GB/T 15706-2012.

This document defines the safety of gas turbines from an international perspective, based to the greatest extent possible on existing certified ISO and IEC standards.

For parts not covered by ISO or IEC standards, other specifications or standards (such as EN, NFPA, etc.) shall be used.

This document does not include a minimum level of functional safety, which is determined by the application and site.

This document is not applicable to the following items, but may be used as general guidance for these devices when required.

- Exhaust system structure design;
- Driven equipment;
- Micro gas turbines covered in GB/T 38180-2019;
- Gas turbines primarily used for direct and indirect propulsion;
- Mobile gas turbines;
- Gas turbines using special heat sources;
- Gas turbines under research and development;