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

GB/T 11348.2-2012

Replacing GB/T 11348.2-2007

Mechanical vibration -- Evaluation of machines vibration by measurements on rotating shafts -- Part 2: Land-based steam turbine-generators in excess of 50MW with normal operating speeds of 1500r/min, 1800r/min, 3000r/min and 3600r/min

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Foreword

GB/T 11348 "mechanical vibration measurement and evaluation of the machine on the rotating shaft vibration" is divided into five parts.

--- Part 1. General;

--- Part 2. power greater than 50 MW, rated operating speed 1500r/min, 1800r/min, 3000r/min,

3600r/min land installed turbines and generators;

--- Part 3. Coupled industrial machines;

--- Part 4. Gas turbine sets with a sliding bearing;

--- Part 5. Hydroelectric power plants and pump stations.

This part of GB/T 11348 Part 2.

This section drafted in accordance with the rules of GB/T 1.1-2009 and GB/T 20000.2-2009 given.

This Part replaces GB/T 11348.2-2007 "Measurement and evaluation criteria - Part 2 shafts rotating machinery vibration. 50MW to

The rated speed 1500r/min, 1800r/min, 3000r/min, 3600r/min steam turbines and generators installed on land. "

This section compared with the GB/T 11348.2-2007, the main modifications are as follows.

--- Modify the standard name, measurement and evaluation of the original "shafts of rotating machinery vibration - Part 2. 50MW or more,

Rated speed 1500r/min, 1800r/min, 3000r/min, 3600r/min land turbines and generators installed "

To "mechanical vibration measurement and evaluation of the machine on the rotating shaft

vibration - Part 2. power greater than 50MW, rated operating switch

Speed 1500r/min, 1800r/min, 3000r/min, 3600r/min steam turbines and generators installed on land. "

--- Increasing the safe operation of the basic assumptions is to avoid metal to metal contact between the rotating shaft and the fixed part of. They can serve as

Acceptance of the provisions on the basis (see 4.1);

--- Modify the previous edition of "vibration amplitude" in many translations of the words "vibration values";

--- Modified example of an evaluation of regional boundaries used in different regions of the boundary values (see 4.2.2.4);

--- When the new machine does not have to establish an effective baseline data, recommended its alarm steady state operation under the rated operating speed should be revised to

Over the zone boundary B/C value (see 4.2.3.2);

--- Increase in the content of the second set down the value of the alarm (see 4.2.3.3);

--- Increased vibration magnitude transient operating conditions (transient operation) during "downtime amplification factor" concept, before the establishment of the steady-state conditions, it

Automatically enhance the "alarm" and "Stop value" (see 4.2.4). About "Stop amplification factor" is used (see 4.2.4.4);

--- Modify the acceleration, deceleration and speed during vibration magnitude, and the deletion of the previous version of FIG. 1 (see 4.2.4.3);

--- Added Appendix A for instructions on the S_{max} . If you are not using peak - peak displacement S (pp) max, but from a measuring surface

Exported output orthogonal sensors S_{max} , as a general guide values in Table A.1 should be divided by 1.85.

This section uses redrafted Law Amendment uses ISO 7919-2:2009 "Mechanical vibration of a rotating shaft measurement and evaluation of the machine

Part 2. power greater than 50MW, rated operating speed 1500r/min, 1800r/min, 3000r/min, 3600r/min land security

Installed turbines and generators. "

This part of ISO 7919-2:2009 as compared to the main technical differences are.

--- Appendix A Table A.1 and A.2 recommended assessment area boundary B/C values

band C/D ratio from one value to a limit

Range to adapt to China's practical application.

This part of the National mechanical vibration, shock and condition monitoring Standardization Technical Committee (SAC/TC53) and focal points.

This section is drafted. Zhengzhou Machinery Research Institute, Xi'an Thermal Power Research Institute Co., Ltd., Beijing Electric Power Construction Research Institute, Harbin motor

Research Institute, Shanghai Design and Research Institute of complete sets of power generation equipment, Southeast University.

Introduction

When the rotary shaft vibration measurement, GB/T 11348.1 is to evaluate the various basic documents required for general machine vibration. GB/T 11348

This part of the evaluation at or near a large turbine and generator shafts bearing at the specified vibration intensity. In these locations

Measurements can characterize a good machine vibration condition. Evaluation criteria based on past experience, the vibration can be used to evaluate the status of these machines.

In the steady state running conditions, it proposed two criteria evaluation machine vibration. The first criterion to consider is the measured vibration magnitude; s

Two criteria to consider is the change the vibration magnitude. In addition, transient operating conditions provides different criteria. However, the rotary shaft vibration is not

The only basis for evaluation of vibration intensity. For large turbines and generators are usually evaluated on a non-rotating parts vibration measurement. Non

Vibration measurement requirements, see GB/T 6075.1 and GB/T 6075.2 on rotating parts.

Evaluation Method GB/T 11348 in this section is based on broadband measurements. However, due to technological advances, the narrowband spectrum analysis measurements or have

After increasingly widely available, especially for vibration evaluation, condition monitoring and diagnostics. These measurements evaluation criteria beyond the present

Range section. See ISO 13373 (all parts) determined machine vibration condition monitoring requirements.

Mechanical vibration measurement and evaluation of the machine on the rotating shaft

Vibration - Part 2. power greater than 50MW, rated

Working speed 1500r/min, 1800r/min,

3000r/min, 3600r/min land installation

Turbine and generator

1 Scope

This section GB/T 11348 gives the rotation axis at or near the site evaluation main bearing radial vibration measured at the intensity of specific regulations

set. include.

--- Normal steady-state operating conditions of vibration;

--- Transients (including the raising speed or deceleration, plus initial load and load changes), the other (non-steady-state) conditions during vibration;

--- Normal steady state vibration changes during operating conditions.

This section applies to the rated operating speed 1500r/min, 1800r/min, 3000r/min or 3600r/min, the output power is greater than

50MW of turbines and generators installed on land, but also for direct connection with a gas turbine and a steam turbine (or) a generator (such as the United

Combined cycle applications). Under these circumstances, the guidelines in this section apply only to the steam turbine and generator (including synchronizing clutch). Gas Turbine Vibration

Motion shall GB/T 11348.4 and GB/T 6075.4 comment.

These vibration values specified in this section is not the sole basis for evaluation of vibration intensity. For large turbines and generators often

Evaluated by vibration measurements on non-rotating parts. These vibration measurement requirements, see GB/T 6075.1 and GB/T 6075.2.

2 Normative references

The following documents for the application of this section is essential. For dated references, only the edition date of this Part apply to

Minute. For undated references, the latest edition (including any amendments) apply to this section.

GB/T 11348.1-1999 rotation measurement and evaluation criteria - Part 1 mechanical shaft radial vibration. General (idt, ISO 7919-1.

1996)