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

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Replacing GB/T 30966.6-2015

**Wind energy generation systems - Communications for
monitoring and control of wind power plants - Part 6: Logical
node classes and data classes for condition monitoring**

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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 is part 6 of GB/T 30966 "Wind Turbine Wind Farm Monitoring System Communication". GB/T 30966 has

The following parts have been published.

- Part 1. Principles and models;
- Part 2. Information model;
- Part 3. Information exchange model;
- Part 4. Mapping to communication protocol;
- Part 5. Conformance testing;
- Part 6. Logical node classes and data classes for status monitoring.

This document replaces GB/T 30966.6-2015 "Wind Turbine Wind Farm Monitoring System Communication Part 6. Status Monitoring

Logical Node Classes and Data Classes for Testing", compared with GB/T 30966.6-2015, except for structural adjustments and editorial changes, the main technical changes as follows.

a) Changed the restructured data model (see 5.1, 7.1, 7.3, 7.4, 7.5, 7.6, 7.7, 7.8, 5.1, 7.1, 7.3, 7.4, 7.5, 7.6, 7.7, 7.8);

b) Delete the UFF58 format (see Chapter 9 of the.2015 edition);

c) Added reporting and logging functions for data access usage standards (see 6.2, 8.2 of the.2015 edition).

This document is equivalent to IEC 61400-25-6.2016 "Wind Turbine Generating Sets Part 25-6.Communication of Wind Farm Monitoring System

Logical Node Classes and Data Classes for Condition Monitoring".

The following minimal editorial changes have been made to this document.

--- In order to coordinate with existing standards, change the name of the standard to "Wind Turbine Wind Farm Monitoring System Communication Part 6.

Logical node class and data class for state monitoring";

--- Added examples and application examples of condition monitoring cabins (see Appendix C and Appendix D).

Please note that some contents of this document may refer to patents. The issuing agency of this document assumes no responsibility for identifying patents.

Introduction

GB/T 30966 "Wind Turbine Wind Farm Monitoring System Communication" defines the information model and information exchange of wind farm monitoring.

It is possible to switch models, thereby enabling commonality of access between different clients and servers from different manufacturers and suppliers. GB/T 30966

Mainly based on the international document IEC 61400-25, it defines the mapping of wind farm specific information, information exchange mechanism and communication protocol. At this

On the one hand, IEC 61400-25 specifies detailed requirements for exchanging available information with wind farm components in a manufacturer-independent environment. These need

It is required to give the definition in IEC 61400-25 or refer to other standards.

GB/T 30966 (all parts) currently consists of the following 6 parts.

--- Part 1.Principles and models. The purpose is to study the general communication between the wind farm SCADA system and the wind turbine

sexual demands.

--- Part 2.Information Model. The purpose is to specify the summary description of the logical node class, the logical node class of the wind farm to the common logical node class definitions and requirements.

--- Part 3.Information exchange model. The purpose is to specify an information exchange model that can be used by clients and servers to access

The content and structure of the wind farm information model defined in GB/T 30966.2.

--- Part 4.Mapping to the communication protocol. The purpose is to specify a specific mapping oriented to the protocol stack, and provide a link between the client and the remote server.

Provide the required information encoding for information exchange between them.

--- Part 5.Conformance testing. The purpose is to specify the various components (such as wind turbines) and participants (such as wind turbines) in the wind farm

General requirements for communication between SCADA systems), detailing standard techniques for implementing conformance testing, and deterministic

Specific measurement techniques applied when parameters are available.

--- Part 6.Logical node classes and data classes for status monitoring. Its purpose is to control wind turbine or wind farm components or structures

Observe the components for a period of time, evaluate the state and state changes of the components or structural parts, so as to find potential faults

early signs.

Condition monitoring functions can be realized by different physical devices. Some information may be monitored by the generator set controller (TCD), others

Some information may be the responsibility of other Condition Monitoring Devices (CMDs). Each participant can request to exchange data in TCD or CMD.

SCADA equipment can request to call information in TCD or CMD; CMD can also request to call TCD

information within. Information exchange between participants and equipment in a wind farm requires the use of the information exchange defined in IEC 61400-25-3

Serve. A schematic illustration of the above is shown in Figure 1.

Figure 1 Status monitoring with TCD/CMD functions separated from each other

Control and condition monitoring applications in the wind power industry use the technical structure of separate devices. For this reason, the information model and information

The information exchange model is based on a structure consisting of a TCD and a CMD.

The main content of the GB/T 30966.6 document is condition monitoring, which is an extension of the IEC 61400-25 series of documents.

Wind Turbine Wind Farm Monitoring System Communication

Part 6. Logical node classes and data classes for condition monitoring

1 Scope

This document specifies information models related to condition monitoring of wind farms and information exchange of data values related to these information models.

Note. The premise of conforming to the principles of this document is to comply with GB/T 30966.2, GB/T 30966.3 and GB/T 30966.4.

Figure 2 shows the information flow of a system that can use the condition monitoring function to complete condition maintenance. This diagram illustrates how to pass

The information link centralizes and refines the data, so as to achieve the ultimate goal of state maintenance, that is, to issue work instructions to the maintenance team, and then take

Corresponding measures are taken to ensure the good operation of wind farms.

Figure 2 Status monitoring information flow chart