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

DL/T 1083-2019

**Specification of distributed control system for fossil fuel power
plant
(English Translation)**

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard is to revise DL/T 1083-2008 "Technical Conditions for Distributed Control System of Thermal Power Plants". Except for editorial amendments in addition, the main technical content changes are as follows.

- The quality and performance indicators of DCS hardware and system software have been revised;

- Increased requirements for information security technology.

- Revised the technical requirements of the analog control system;

- Increased the technical requirements of the furnace safety monitoring system;

- Revised the sequence control system and added the technical requirements for the desulfurization and denitration control system;

- Increased the technical requirements of the electrical control system;

- Increased the technical requirements of the fieldbus control system.

- Added the technical requirements for DCS packaging and storage;

Please note that certain contents of this document may involve patents. The issuing agency of this document is not responsible for identifying these patents.

This standard was proposed by the China Electricity Council.

This standard is under the jurisdiction of the Power Industry Thermal Automation and Information Standardization Technical Committee (TC28).

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1 Scope

This standard specifies the hardware, system software, application functions, materials, packaging of the distributed control system (DCS) of thermal power plants Technical requirements for storage and acceptance testing.

This standard applies to the distributed control system (DCS) of newly built or expanded thermal power plants with a single capacity of 300MW and above, and others the DCS of the capacity unit can be implemented by reference.

2 Normative references

The following documents are indispensable for the application of this document. For dated reference documents, only the dated version applies in this document. For undated references, the latest version (including all amendments) applies to this document.

GB/T 2421.1 Overview and Guidelines for Environmental Testing of Electrical and Electronic Products GB/T 4208 Enclosure protection grade (IP code) GB/T 8117.2 Steam Turbine Thermal Performance Acceptance Test Procedure Part 2: Method B. Steam Turbine Width of Various Types and Capacity Accuracy test GB/T 10184 Specification for performance test of power station boilers GB/T 13384 General technical conditions for packaging of mechanical and electrical products GB/T 17214.1 Working conditions of industrial process measurement and control equipment Part 1: Climatic conditions GB/T 17626.2 Electromagnetic compatibility test and measurement technology Electrostatic discharge immunity test GB/T 17626.3 Electromagnetic compatibility test and measurement technology Radio frequency electromagnetic field radiation immunity test GB/T 17626.4 Electromagnetic compatibility test and measurement technology Electrical fast transient pulse group immunity test GB/T 17626.5 Electromagnetic compatibility test and measurement technology surge (impact) immunity test GB/T 17626.8 Electromagnetic compatibility test and measurement technology Power frequency magnetic field immunity test GB/T 17626.11 Electromagnetic compatibility test and measurement technology Voltage sag, short-term interruption and voltage change immunity test GB 17859 Classification criteria for security protection levels of computer information systems GB/T 18271.3 General performance evaluation methods and procedures for process measurement and control devices Part 3: Tests for influence GB/T 26863-2011 Thermal

power plant monitoring system terminology GB/T 29247-2012 General experimental methods for industrial automation instruments GB/T 30372 Guidelines for Acceptance of Distributed Control Systems in Thermal Power Plants GB/T 33009.1 Industrial Automation and Control System Network Security Distributed Control System (DCS) Part 1: Protection Requirements DL/T 1091 Technical specification for boiler furnace safety monitoring system in thermal power plant DL/T 1213 Technical Regulations for Load Reduction of Auxiliary Equipment of Thermal Power Generating Sets

3 Terms, definitions and abbreviations

The following terms, definitions and abbreviations apply to this document. For ease of use, GB/T 26863-2011 is listed repeatedly below Some terms, definitions and abbreviations specified in the are also listed here.

Distributed control system; DCS Using computer, communication and screen display technology to realize the data collection, control and protection functions of the production process, use A multi-computer monitoring system that realizes data sharing by communication technology. Its main features are decentralized functions, centralized operation and display, and shared data enjoy. Depending on the specific situation, it can also be a dispersion of hardware arrangements.

[GB/T 26863-2011, definition 8.13] 3.2 Control processor with a microcomputer or a microprocessor as the core, it is a special modular unit that completes the control logic and control algorithm.

Process control station distributed process A device that can realize the data collection, control and protection functions of relatively independent subsystems in the production process.

Man-machine interface the hand of a person (ie a user) interacting with a system (ie a specific machine, device, computer program or other complex tool, etc.) A collection of segments. The user interface provides the following means.

--Input. Allow the user to operate the system.

--Output. Allow the system to indicate the response of the user's operation.

[GB/T 26863-2011, definition 5.6] 3.5 Input and output module Convert the production process parameters into digital signals that can be received by the industrial control computer system, or convert the industrial control computer system the digital signal output by the system converts the component or assembly of the physical signal that the production equipment can receive.

Main communication network Number of process control stations, man-machine interface stations (operator station, engineer station) or man-machine interface in the distributed control system According to the real-time data communication network of the server.