

ICS 25.040.40; 27.100
CCS N 18



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

GB/Z 21193.1-2007

**Fossil-fired steam power stations -- Part 1: Limiting controls
(English Translation)**

Issued on: November 14, 2007

Implemented on: May 1, 2008

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine of the People's Republic of China, China National
Standardization Administration**

Table of Contents

- Foreword
- Introduction
- 1 Scope
- 2 Symbols, subscripts, abbreviations
- 2.1 Symbol

Foreword

GB/Z21193 "Mineral Combustion Steam Power Station" is divided into the following sections.

- Part 1. Limiting control;
- Part 2. Drum water level control;
- Part 3. Steam temperature control.

This part is the first part of GB/Z21193.

This part is equivalent to IEC/T R62140-1.2002 "Mineral Combustion Steam Power Station Part 1. Limiting Control" (English version).

For ease of use, the following compile changes have been made to IEC/T R62140-1.2002.

- a) the words "technical report" were replaced by the words "guidance technical documents";
- b) delete the preface to IEC/T R62140-1.2002;
- c) delete the introduction to IEC/T R62140-1.2002;
- d) the term "limiter control" in this part is equivalent to "limit control" in the standard GB/T 2900.56-2002;
- e) According to the regular publications and standards of the power industry, the abbreviation "Boiler SG" in this section is changed to "Boiler B".

Appendix A, Appendix B, Appendix C, Appendix D, Appendix E, Appendix F and Appendix G of this part are informative annexes.

This part was proposed by the China Machinery Industry Federation.

This part is under the jurisdiction of the Second Technical Committee of the National Industrial Process Measurement and Control Standardization Technical Committee.

This section is responsible for drafting the unit. Southwest University.

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Introduction

This part is part of GB/Z21193, which contains the correct design and operation of the control circuit for the mineral burning power station.

Suggestions. They are based on the current technical solutions, and in order to understand them correctly, this section also presents the necessary backs.

Scene information.

This section proposes or contains special technical solutions, mainly to meet the needs of similar user needs, forming a recognized Method to represent the functional needs of operators and suppliers of mineral burning power plants.

In the given time, this section is strictly regarded as a specific technical solution example, the purpose of which is to encourage the topic.

The idea is unified and the discussion is promoted.

There are two types of instructional technical documents in GB/Z21193.

The first type of guidance technical document relates to special control loops for boilers, such as drum water level control or steam temperature control, and the normal operating conditions in which they are located.

The second type of guidance technical document points out special ways to ensure proper operation under restricted conditions, such as rising and falling During the period, or in abnormal operating conditions, or they are related to the furnace control system, such as load control system or frequency control system. These ones Guidance technical documents usually group power plant units into one.

Each part of GB/Z21193 is independent of each other, however, their content is largely coordinated. This department Columns can be added.

GB/Z21193.1-2007/IEC/TR62140-1:2002 Mineral burning steam power station Part 1.
Limiting control

1 Scope

This section covers the limiting control of mineral-fired steam power stations.

From the perspective of the task and role of the limit control, they are located between the actual operational control and the protection device. The task of running control is the resulting output always controls the power generation process in a manner corresponding to the preset values, and for this purpose each subsystem is economically and cyclically the requirements of the environment are running. The task of protecting equipment is primarily to protect people, the environment, and the equipment and its components from damage by means of downtime.

The limiter control is used to support the run control, so it can run continuously under the constraints that may be imposed during the transition, for example, at boot and during downtime, as well as in abnormal operating conditions.

Limiting control often uses actuators with operational controls that can be cut off like operational controls. However, when the limit control is when cutting off, the pre-automatic clipping of the process value no longer exists before the protection device is triggered. Therefore, the limiting control is different from the protection device.

The protective device cannot be cut off, and most of it works through its dedicated actuator. This guidance technical document and operational control the system is independent of the protection device.

Subsystem control tasks can vary with the overall device operating conditions. In order to adapt to various control tasks, the structural transformation is carried out. The following are optional structures available for the device.

- between the operation control and the limit control;
- Within the limit control;
- In the operation control.

Therefore, for process tasks, structural transformation is not an isolated control solution, they are involved in this section along with clipping control.

(See Appendix A to Appendix G).

2 Symbols, subscripts, abbreviations

The following symbols, subscripts and abbreviations apply to this section.

2.1 Symbol

Speed

Power P ;

Heat Q ;

Heat flux Q ;

Temperature ;

Temperature difference Δ ;

Material stress σ ;

GB/Z21193.1-2007/IEC/TR62140-1:2002