



**SLOVENSKI STANDARD**  
**SIST EN 45510-1:1999**  
**01-april-1999**

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Guide for procurement of power station equipment - Part 1: Common clauses

Leitfaden für die Beschaffung von Ausrüstungen für Kraftwerke - Teil 1: Allgemeingültige Festlegungen

Guide pour l'acquisition d'équipements destinés aux centrales de production d'électricité - Partie 1: Clauses communes (standards.iteh.ai)

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## Guide for procurement of power station equipment - Part 1: Common clauses

Guide pour l'acquisition d'équipements destinés aux  
centrales de production d'électricité - Partie 1: Clauses  
communes

Leitfaden für die Beschaffung von Ausrüstungen für  
Kraftwerke - Teil 1: Allgemeingültige Festlegungen

This European Standard was approved by CEN/CENELEC on 1 October 1997.

CEN/CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN/CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN/CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

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CENELEC members are the national electrotechnical committees of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.



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**Foreword**

*This standard takes the form of a recommendation and is therefore entitled a "Guide".*

*This Guide for procurement has been prepared by the CEN/CENELEC Joint Task Force Power Engineering (JTFPE) of which the secretariat is held by BSI.*

*This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by April 1998, and conflicting national standards shall be withdrawn at the latest by April 1998.*

*This Guide for procurement has been prepared under mandates given to CEN and CENELEC by the European Commission and the European Free Trade Association.*

*This Guide for procurement is a part of a series of Guides mandated to cover the procurement of power station plant and equipment in conformity with European Procurement Directives. The Guides are:*

**EN 45510: Guide for procurement of power station equipment**

**Part 1: Common clauses**

**Part 2-1: Electrical equipment - Power transformers**

**Part 2-2: Electrical equipment - Uninterruptible power supplies**

**Part 2-3: Electrical equipment - Stationary batteries and chargers**

**Part 2-4: Electrical equipment - High power static convertors**

**Part 2-5: Electrical equipment - Motors**

**Part 2-6: Electrical equipment - Generators**

**Part 2-7: Electrical equipment - Switchgear and controlgear**

**Part 2-8: Electrical equipment - Power cables**

**Part 2-9: Electrical equipment - Cabling systems**

**Part 3-1: Boilers - Water tube boilers**

**Part 3-2: Boilers - Shell boilers**

**Part 3-3: Boilers - Boilers with fluidized bed firing**

**Part 4-1: Boiler auxiliaries - Equipment for reduction of dust emissions**

**Part 4-2: Boiler auxiliaries - Gas-air, steam-air and gas-gas heaters**

**Part 4-3: Boiler auxiliaries - Draught plant**

**Part 4-4: Boiler auxiliaries - Fuel preparation equipment**

**Part 4-5: Boiler auxiliaries - Coal handling and bulk storage plant**

**Part 4-6: Boiler auxiliaries - Flue gas desulphurization (De-SO<sub>x</sub>) plant**

**Part 4-7: Boiler auxiliaries - Ash handling plant**

**Part 4-8: Boiler auxiliaries - Dust handling plant**

**Part 4-9: Boiler auxiliaries - Sootblowers**

**Part 4-10: Boiler auxiliaries - Flue gas denitrification (De-NO<sub>x</sub>) plant**

**Part 5-1: Turbines - Steam turbines**

**Part 5-2: Turbines - Gas turbines**

**Part 5-3: Turbines - Wind turbines**

**Part 5-4: Turbines - Hydraulic turbines, storage pumps and pump-turbines**

**Part 6-1: Turbine auxiliaries - Deaerators**

**Part 6-2: Turbine auxiliaries - Feedwater heaters**

**Part 6-3: Turbine auxiliaries - Condenser plant**

**Part 6-4: Turbine auxiliaries - Pumps**

**Part 6-5: Turbine auxiliaries - Dry cooling systems**

**Part 6-6: Turbine auxiliaries - Wet and wet/dry cooling towers**

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*Part 6-7: Turbine auxiliaries - Moisture separator reheaters*

*Part 6-8: Turbine auxiliaries - Cranes*

*Part 6-9: Turbine auxiliaries - Cooling water systems*

*Part 7-1: Pipework and valves - High pressure piping systems*

*Part 7-2: Pipework and valves - Boiler and high pressure piping valves*

*Part 8-1: Control and instrumentation*

*EN 45510 Part 1 contains those clauses common to all the above Guides giving the provisions of a non equipment specific nature for use in the procurement of power station plant. EN 45510 is the responsibility of JTFPE. The so called "common clauses", as appropriate, also appear in italics in the documents specific to particular equipment.*

Where paragraphs of "common clauses" are omitted, each paragraph omitted is indicated by the symbol \*\*\*\*\*.

*In this Guide, words in bold type indicate that they have the meaning given in the definitions, clause 3.*

In this Guide, sentences not in italics indicate the additional recommendations to be found in Guides specific to particular equipment.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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## Introduction

This document is the first part of a standard comprising a series of Guides for procurement (Guides) covering plant items, systems and equipment (**equipment**) that comprise a power station. The Guides were prepared to support the implementation of European Directives covering procurement in the utilities sector. Each Guide is complete in itself, but this part 1 is designed to give an indication of the content of all of the Guides and to present those clauses which are independent of the **equipment** being purchased (the so called "common clauses") as a single document. As such, this part gives a general indication of how to prepare technical specifications for power station **equipment**. The particular issues referring to specific **equipment** items are not covered in this part and the user can obtain these from the parts covering the specific **equipment**. This part 1 has the same structure and clause numbering as the parts covering specific **equipment**. This part also identifies where in the Guides the specific technical matters are covered. In some Guides, technical matters are included in additional positions and small changes have been made to the wording of the common clauses to make them relevant to the particular **equipment**. The printing of common clauses in italics and specific technical matters in upright type allows these differences to be identified. All the Guides are listed in the foreword.

### 1 Scope

*This standard gives guidance on writing the technical specification for the procurement of equipment for use in electricity generating stations (power stations). This Guide for procurement is not applicable to equipment for use in the nuclear reactor plant area of nuclear power stations. Other possible applications of such equipment have not been considered in the preparation of this Guide.*

This Guide covers those matters that are common to all **equipment** (the common clauses). In specific Guides, the **equipment** covered by the Guide is defined here.

*The equipment covered by this Guide is defined by its function rather than design type. Therefore, the guidance to the specification is stated in performance terms rather than being specified by a detailed description of the equipment to be supplied.*

*This Guide indicates to potential purchasers how their specification should be prepared so that:*

- *the equipment type and capacity interfaces correctly with other elements of the systems;*
- *predicted performance is achieved;*
- *ancillary equipment is properly sized;*
- *reliability, availability and safety requirements are achieved;*
- *proper consideration is given to the evaluation process and the quality measures to be applied.*

*This Guide does not determine the type of specification (e.g. detailed, performance, functional) or the extent of supply for any given contract which is normally decided on the basis of the purchaser's project strategy. It does not cover:*

- *any commercial, contractual or legal issues which are normally in separate parts of an enquiry;*
- *any allocation of responsibilities which are determined by the contract.*

*This Guide does not prescribe the arrangement of the documents in the enquiry.*

**NOTE:** *As a comprehensive European environmental policy is still under preparation, this Guide does not address the environmental implications of the equipment.*

## 2 Normative references

*This Guide for Procurement incorporates by dated or undated reference, provisions from other publications. These normative references are cited in the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this Guide only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies.*

*EN ISO 9001 Quality systems - Model for quality assurance in design, development, production, installation and servicing (ISO 9001:1994)*

*EN ISO 9002 Quality systems - Model for quality assurance in production, installation and servicing (ISO 9002:1994)*

*IEC 50 (191) International electrotechnical vocabulary  
Chapter 191: Dependability and quality of services*

The specific guides give other relevant normative references here, if appropriate.

## 3 Definitions

*For the purposes of this Guide, the following definitions apply:*

### 3.1 Organisational terms

**3.1.1 purchaser:** Recipient of a product and/or a service provided by a supplier.

**3.1.2 supplier:** Person or organisation that provides a product and/or a service to the purchaser.

**3.1.3 specification:** Document stating technical requirements of the purchaser. It may form part of an enquiry issued by a purchaser.

**3.1.4 enquiry:** Invitation to tender issued by a purchaser. It will normally include a specification together with the necessary contractual and commercial conditions.

**3.1.5 tender:** Offer made by a tenderer in response to an enquiry.

**3.1.6 tenderer:** Person or organisation submitting a tender for the equipment in response to the enquiry.

**3.1.7 site:** Place to which the equipment is to be delivered or where work is to be done by the supplier, together with so much of the area surrounding as the supplier may, with the consent of the purchaser, use for the purposes of the contract.

*NOTE: Further definitions of useful organisational terms may be found in EN ISO 8402 (see Annex A).*

### 3.2 Technical terms

In the specific Guides, the technical terms used in the Guide are defined here.

### 3.3 General terms

**3.3.1 equipment:** Plant, component, system and/or associated service to be provided in response to the enquiry.

**3.3.2 conformity:** Fulfilment of specified requirements by a product, process or service.

**3.3.3 performance:** Obligations verified by specified tests.

**3.3.4 operating period:** Time between planned outages or maintenance periods during which the **equipment** is in operation and/or does not restrict operational requirements of the power station.

**3.3.5 life expectancy:** Time period over which the **equipment** might be expected to operate with planned maintenance but without replacement of a significant component. The specific Guides give examples of significant components here, if appropriate.

**3.3.6 design life:** Operating hours of the **equipment** on which design calculations are based.

**3.3.7 acceptability:** Compliance with criteria defined by the **purchaser** for assessing the suitability of **equipment**.

**3.3.8 equipment margins:** Allowance for design, fabrication or operating contingency defined in the **specification**. These are separate to those normally included by the **supplier** for his own purposes.

**3.3.9 proven equipment:** **Equipment** which may be demonstrated to be similar to that offered and has operated for a sufficient time to have demonstrated performance and availability.

**3.3.10 availability:** As defined in IEC 50 (191).

**3.3.11 reliability:** As defined in IEC 50 (191).

**3.3.12 maintainability:** As defined in IEC 50 (191).

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## 4 Brief overall project description

### 4.1 Role and organisation of purchaser

The **enquiry** should define the **purchaser's** role in the project, including whether the **purchaser** will assume responsibility for the planning and technical coordination of the project, or whether other organisations will be appointed to carry out all or part of this function. The **enquiry** should define all organisational interfaces and the procedures to be employed for managing the contract and the site.

### 4.2 Site location

The **specification** should describe the geographical location of the **site** which may include surveying points, the previous use of the **site** and any local features such as impact of industrial or military activities and planning restrictions.

Where applicable, the **specification** should indicate **site datum** on **specification** drawings and specify **site** and drawing orientation and define co-ordinate axes (x,y,z) and numbering order to ensure consistency between suppliers of connected equipment.

Where appropriate, the **specification** should define the permitted ground loading, dimensional and time restrictions on access routes up to but not including public roads or railways.

The **specification** should identify, where appropriate, the environment of the **site** in which the **equipment** will operate. The following factors may normally be included if appropriate:

- climatic e.g. atmospheric pressure, annual variation of air and cooling water temperature, relative humidity, rain fall, icing, snow, wind velocity (normal and maximum), lightning;
- geological e.g. seismic conditions and characteristics of subsoil (e.g. caverns, gliding stratifications, load bearing capability of subsoils);
- geographic e.g. elevation, influence of local topography and structures;
- hydrological e.g. flooding and tides.