SLOVENSKI STANDARD
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Guide for procurement of power station equipment - Part 2-2: Electrical equipment - Uninterupptible power supplies

Guide for procurement of power station equipment -- Part 2-2: Electrical equipment - Uninterruptible power supplies

Leitfaden für die Beschaffung von Ausrüstung für Kraftwerke -- Teil 2-2: Elektrische Ausrüstung - Unterbrechungsfreie Stromversorgungen

Guide pour l'acquisition d'équipements destinés aux centrales de production d'électricité -- Partie 2-2: Equipements électriques - Alimentations sans interruption

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Guide for procurement of power station equipment
Part 2-2: Electrical equipment - Uninterruptible power supplies

Guide pour l'acquisition d'équipements destinés aux centrales de production d'électricité
Partie 2-2: Equipements électriques
Alimentations sans interruption

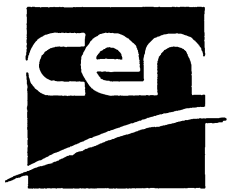
Leitfaden für die Beschaffung von Ausrüstung für Kraftwerke
Teil 2-2: Elektrische Ausrüstung
Unterbrechungsfreie Stromversorgungen

This European Standard was approved by CEN and CENELEC on 1998-10-01. CEN and 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 or 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 or CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN and CENELEC members are the national standards bodies and national electrotechnical committees of Austria, Belgium, Czech Republic, 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 the British Standards Institution.

The text of the draft was submitted to the formal vote and was approved by CEN and CENELEC as EN 45510-2-2 on 1998-10-01.

The following dates were fixed:

- *latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement* (dop) 1999-11-01
- *latest date by which the national standards conflicting with the EN have to be withdrawn* (dow) 1999-11-01

Annexes designated "informative" are given for information only.
In this standard, annex A is informative.

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_x) 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_x) 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*
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 minor changes have been made to sentences in the "common clauses" these are marked by a vertical line in the left margin as shown here.*

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

*In this Guide, words and sentences not in italics are specific to this Guide and refer to the particular **equipment** covered.*

1 Scope

This standard gives guidance on writing the technical ***specification*** *for the procurement of* static a.c. uninterruptible power supplies (UPS's) *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 UPS's consisting of rectifiers, batteries, inverters, transfer switches and bypass switches.

This equipment usually forms part of either a centralised or unit UPS system for duties such as computer, control and instrumentation, etc., supplies.

For additional, or specific, requirements for batteries and battery chargers refer to the relevant guides in this series.

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.

European Norms

EN ISO 8402	Quality management and quality assurance - Vocabulary
EN ISO 9001	*Quality systems - Model for quality assurance in design, development, production, installation and servicing*
EN ISO 9002	*Quality systems - Model for quality assurance in production, installation and servicing*
EN 45510	Guide for procurement of power station equipment Part 2-7: Electrical equipment - Switchgear and controlgear Part 2-9: Electrical equipment - Cabling systems
EN 50091	Uninterruptable Power Systems (UPS) Part 1-1: General and safety requirements for UPS used in operator access areas Part 2: EMC requirements
EN 60529	Degrees of protection provided by enclosures (IP Code) (IEC 60529)

International standards

IEC 60050 (191)	*International electrotechnical vocabulary* Chapter 191: Dependability and Quality of Services
IEC 60050 (486)	International Electrotechnical Vocabulary (IEV) Chapter 486: Secondary cells and batteries
IEC 60050 (551)	International Electrotechnical Vocabulary (IEV) Chapter 551: Power electronics

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

The technical terms used are in accordance with the EN 50091 series and the international definitions of IEC 60050(486) and IEC 60050(551).

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.* For example a rectifier, or inverter, is a significant component.

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 60050(191).*

3.3.11 ***reliability****: As defined in IEC 60050(191).*

3.3.12 ***maintainability****: As defined in IEC 60050(191).*

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****.*