



National Standards Authority of Ireland

IRISH STANDARD

I.S. EN 45510-6-6:2000

ICS 27.040  
27.100  
27.200

**GUIDE FOR PROCUREMENT OF POWER  
STATION EQUIPMENT - PART 6-6: TURBINE  
AUXILIARIES - WET AND WET/DRY  
COOLING TOWERS**

National Standards  
Authority of Ireland  
Dublin 9  
Ireland

Tel (01) 807 3800  
Tel (01) 807 3838

*This Irish Standard was  
published under the  
authority of the National  
Standards Authority of  
Ireland  
and comes into effect on:  
April 7, 2000*

**NO COPYING WITHOUT NSAI  
PERMISSION EXCEPT AS  
PERMITTED BY COPYRIGHT  
LAW**

© NSAI 2000

**Price Code I**

Údarás um Chaighdeán Náisiúnta na hÉireann



EUROPEAN STANDARD

EN 45510-6-6

NORME EUROPÉENNE

EUROPÄISCHE NORM

October 1999

ICS

English version

## Guide for procurement of power station equipment - Part 6-6: Turbine auxiliaries - Wet and wet/dry cooling towers

Guide pour l'acquisition d'équipements destinés aux centrales de production d'électricité - Partie 6-6: Auxiliaires de turbine - Aéroréfrigérants humides et humides/secs

Leitfaden für die Beschaffung von Ausrüstungen für Kraftwerke - Teil 6-6: Turbinenhilfseinrichtungen - Naß- und Naß/Trockenkühltürme

This European Standard was approved by CEN/CENELEC on 1 October 1999.

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.

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



**CEN Central Secretariat:**  
rue de Stassart, 36 B-1050 Brussels

**CENELEC Central Secretariat:**  
rue de Stassart, 35 B-1050 Brussels

## Contents

Page

<b>Foreword</b> .....	<b>4</b>
<b>1 Scope</b> .....	<b>6</b>
<b>2 Normative references</b> .....	<b>6</b>
<b>3 Definitions</b> .....	<b>7</b>
3.1 Organisational terms.....	7
3.2 Technical terms.....	7
3.3 General terms.....	8
<b>4 Brief overall project description</b> .....	<b>9</b>
4.1 Role and organisation of purchaser.....	9
4.2 Site location.....	9
4.3 Equipment task.....	9
4.4 Equipment to be purchased.....	9
4.5 Control and instrumentation.....	10
4.6 Electrical supplies and other services.....	10
4.7 Other interfaces.....	10
4.8 Project programme.....	10
4.9 Equipment identification systems.....	10
<b>5 Extent of supply</b> .....	<b>10</b>
<b>6 Terminal points</b> .....	<b>11</b>
<b>7 Operational requirements</b> .....	<b>11</b>
7.1 Operating environment.....	11
7.2 Manning levels.....	12
7.3 Normal operation.....	12
7.4 Operating hours.....	12
7.5 Start-up and shut-down.....	12
7.6 Abnormal conditions.....	12
7.7 Further operational requirements.....	12
<b>8 Life expectancy</b> .....	<b>13</b>
8.1 Design life.....	13
8.2 Components requiring periodic maintenance.....	13
<b>9 Performance requirements</b> .....	<b>13</b>
9.1 Duty 13.....	13
9.2 Performance.....	13
9.3 Equipment margins.....	14
9.4 Availability.....	14
9.5 Levels of component redundancy.....	14
9.6 Further performance requirements.....	14
<b>10 Design and fabrication</b> .....	<b>14</b>
10.1 Specific equipment features.....	14
10.2 Design justification.....	15
10.3 Material selection.....	16
10.4 Safety.....	16
10.5 Interchangeability.....	16
10.6 Fabrication methods.....	16
<b>11 Maintenance requirements</b> .....	<b>16</b>
11.1 Planned maintenance.....	16
11.2 Personnel safety.....	17
11.3 Requirements for access.....	17
11.4 Lifting requirements.....	17
11.5 Special tools.....	17
11.6 Test equipment.....	17
11.7 Spare parts strategy.....	17
11.8 Special precautions.....	17

<b>12</b>	<b>Technical documentation requirements .....</b>	<b>18</b>
12.1	Tender documentation.....	18
12.2	Contract documentation .....	18
<b>13</b>	<b>Applicable legislation, regulations, standards and further requirements .....</b>	<b>18</b>
13.1	Legislation and regulations .....	18
13.2	Standards .....	18
13.3	Further requirements .....	18
<b>14</b>	<b>Evaluation criteria.....</b>	<b>19</b>
14.1	General.....	19
14.2	Technical criteria.....	19
<b>15</b>	<b>Quality measures .....</b>	<b>20</b>
15.1	General.....	20
15.2	Approvals procedure.....	20
15.3	Inspection requirements .....	20
15.4	Non-conformity .....	20
<b>16</b>	<b>Site factors .....</b>	<b>20</b>
16.1	Access .....	20
16.2	Facilities.....	20
16.3	Site specific requirements .....	21
<b>17</b>	<b>Verification of specified performance .....</b>	<b>21</b>
17.1	General.....	21
17.2	Works tests.....	21
17.3	Test during installation and commissioning.....	21
17.4	Technical conditions for trial run.....	22
17.5	Functional and performance tests .....	22
	<b>Bibliography .....</b>	<b>23</b>

## **Foreword**

*This European Standard has been prepared by Technical Committee CEN/CLC JTFPE "Joint Task Force Power Engineering", the secretariat of which 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 2000, and conflicting national standards shall be withdrawn at the latest by April 2000.*

*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.*

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

*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 converters*

*Part 2-5: Electrical equipment - Motors*

*Part 2-6: Electrical equipment - Generators*

*Part 2-7: Electrical equipment - Switchgear and control gear*

*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 desulphurisation (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*

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

*Part 6-8: Turbine auxiliaries - Cranes*

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

This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

- 
- [Looking for additional Standards? Visit Intertek Inform Infostore](#)
  - [Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation](#)
-