

# 电力专业英语



能源部华北电业管理局编写

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## 内 容 提 要

《电力专业英语》是电力企业从事工程技术与经济管理的技术人员学习专业英语的教本，也是中级及以上专业技术职务英语水平考试的教材。全书分为六部分，主要内容包括：中国的电力工业、锅炉及热力工程、汽轮机、电气工程、供用电工程、计算机应用及经济管理。其中每部分均包括若干课文和阅读材料，并附有译文、习题与答案以及必要的注释。

本书除作为电力技术与管理人员英语培训教材之外，也可以作为高等院校有关电力、热力等专业师生学习专业英语的教学参考书。

## 编 者 的 话

为适合电力工业技术干部和管理人员中级及高级专业技术职务评定外语水平考试的需要,能源部华北电业管理局责成华北电业联合职工大学和北京电机工程学会负责组织《电力专业英语》教材的编写工作。全书分为中国的电力工业、锅炉及热力工程、汽轮机、电气工程、供电、计算机应用及经济管理等六部分。PART I 至 IV 分别由董汉杰、王理珊、屠秉铎、张麟征编写, PART V 由周中一、张麟征编写(其中,译文由周中一负责编写,其它部分由张麟征编写), PART VI 由惠子厚、潘振华编写(其中,计算机应用部分由惠子厚编写,经济管理部分由潘振华、杨佳编写)。

本书由张麟征主编,董汉杰、王理珊为副主编。吴祖光主审。杨佳、周密协助整理 PART II、III、VI 的部分手稿。华北电业联合职工大学邓耀群、付涤先、汪新才和北京市电机工程学会杨丽亚、张玉萍等为组织此书的编写、审定付出了辛勤的劳动。

由于时间仓促,水平有限,书中的错误或不当之处恳请批评指正。

编者

## 序

当前，世界新技术浪潮汹涌澎湃，冲击着各个专业部门。这对于正在迈向现代化的我国经济建设来说，既是有利的机会，也是严肃的挑战。我们电业部门更是首当其冲的。因为电力工业是资金密集型和技术密集型的现代产业部门。电力工业具有大容量、高参数、高电压、大系统、高技术、发供用同时性与社会影响广泛性等特点。现代科学技术的一切最新成就与先进管理方法，几乎都是最早为电业部门全面吸收与综合应用。因此，我们电业部门工程技术人员与管理人員掌握外语就非常必要与迫切。改革开放十年来，电业部门对外经济技术活动越来越频繁，出国考察访问、技术交流协作、技术与设备引进、经济合作、劳务输出等等。我们已向先进工业国家引进了电力设备与技术。这个现实迫切地要求我们电业部门专业技术人员尽快地学好外语，提高外语水平。

国家在专业技术职务任职资格评审文件中已明确规定：今后凡不能达到一定的外语水平者，不能评聘为中级专业技术职务。这个要求是时代的要求，形势的要求，也是发展社会主义建设的要求。

我局华北电业联合职工大学与北京电机工程学会为适应需要，聘请了英语水平高的电力专家教授们编撰了这本《电力专业英语》书。作为我局工程技术人员和管理人員中级、高级专业技术职务评定测试外语水平的培训教材，也愿意以此奉献给所有的电业同行们。

尊师重教是我们中华民族的传统美德，我热切期望学习

这本教材的人员以勤奋学习的实际行动来体现这种美德，以感谢为编撰这本教材而付出辛勤劳动的专家教授们和其他工作人员。

张绍贤

1990年 5月 4日

# 目 录

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<b>PART I . China's Power Industry</b> .....	(1)
Text The Status quo and Prospect of China's Power Industry .....	(1)
New Words and Expressions .....	(4)
Notes .....	(6)
Translation 中国电力工业现状及前景 .....	(8)
Exercises to the Text .....	(10)
练习答案 .....	(13)
Reading Material The Strategy for Developing Power Industry .....	(15)
New Words and Expressions .....	(19)
Notes .....	(22)
Translation 电力工业发展战略 .....	(23)
<b>PART I . Boilers and Thermal Engineering</b> .....	(27)
Text (A) Conceptual Design of an Advanced Boiler .....	(27)
New Words and Expressions .....	(30)
Notes .....	(34)
Translation(A) 一台先进锅炉的概念设计 .....	(35)
Exercises to the Text (A) .....	(37)
练习答案 .....	(38)
Text (B) A Coal Fired Utility Boiler .....	(39)

New Words and Expressions .....	(42)
Notes .....	(45)
Translation(B) 燃煤电站锅炉 .....	(46)
Exercises to the Text (B) .....	(47)
练习答案 .....	(49)
Reading Material (A) Boiler Water .....	(50)
New Words and Expressions .....	(55)
Notes .....	(58)
Translation(A) 锅炉水质 .....	(59)
Reading Material (B) Machine Maintenance - aims, Strategies and Economics .....	(62)
New Words and Expressions .....	(66)
Translation(B) 机器维修的目标、 方针和经济性 .....	(69)
<b>PART III. Steam Turbines</b> .....	(72)
Text (A) Turbine Proper and HP Turbine .....	(72)
New Words and Expressions .....	(74)
Notes .....	(76)
Translation (A) 汽轮机本体与高压汽轮机 .....	(77)
Exercises to the Text (A) .....	(79)
练习答案 .....	(82)
Text (B) IP & LP Turbine and Condenser .....	(83)
New Words and Expressions .....	(86)
Notes .....	(89)
Translation(B) 中低压汽轮机与凝汽器 .....	(90)
Exercises to Text (B) .....	(92)
练习答案 .....	(95)

Reading Material (A) Upgrading of Old Turbine - generator Sets (Part One) .....	(96)
Translation(A) 老式发电用汽轮机的改造 (第一部分).....	(102)
Reading Material (B) Upgrading of Old Turbine - generator Sets (Part Two) .....	(105)
Translation(B) 老式发电用汽轮机的改造 (第二部分).....	(109)
<b>PART IV. Electrical Engineering</b> .....	(113)
Text (A) Power System Stability .....	(113)
New Words and Expressions .....	(116)
Notes .....	(119)
Translation(A) 电力系统的稳定性 .....	(120)
Exercises to the Text (A) .....	(123)
练习答案.....	(126)
Text (B) Amplidyne and Metadyne Testing .....	(127)
New Words and Expressions .....	(131)
Notes .....	(133)
Translation (B) 交磁放大机的试验 .....	(134)
Exercises to the Text (B) .....	(137)
练习答案.....	(140)
Reading Material (A) Principles of Variable - frequency A. C. Drives .....	(142)
New Words and Expressions .....	(145)
Notes .....	(146)
Translation(A) 变频交流驱动装置的原理 .....	(146)
Reading Material (B) The Thyristor .....	(149)



New Words and Expressions .....	(152)
Notes .....	(153)
Translation(B) 晶闸管 .....	(153)
Reading Material (C) Synchronous Machines .....	(156)
Translation(C) 同步电机 .....	(159)
<b>PART V. Electrical Power Supply .....</b>	<b>(162)</b>
Text (A) Electric Power Network .....	(162)
New Words and Expressions .....	(166)
Notes .....	(168)
Translation(A) 电力网络 .....	(169)
Exercises to the Text (A) .....	(172)
练习答案 .....	(175)
Text (B) Substation .....	(177)
New Words and Expressions .....	(180)
Notes .....	(182)
Translation(B) 变电站 .....	(183)
Exercises to the Text (B) .....	(186)
练习答案 .....	(189)
Reading Material (A) Circuit Breakers .....	(190)
New Words and Expressions .....	(195)
Notes .....	(196)
Translation(A) 断路器 .....	(197)
Reading Material (B) Development of a New after Laying Test Method for High Voltage Power Cable Systems .....	(200)
New Words and Expressions .....	(204)
Notes .....	(204)

Translation(B) 高压电缆系统敷设后的新试验 方法的发展.....	(205)
<b>PART VI. Computer Application and Economic</b>	
<b>Management</b> .....	(209)
Text (A) Microprocessors Generation Control Technology .....	(209)
New Words and Expressions .....	(212)
Notes .....	(213)
Translation(A) 微型处理机发电控制技术 .....	(214)
Exercises to the Text (A) .....	(216)
练习答案.....	(218)
Text (B) Economic Evaluation of Electric Power Project .....	(220)
New Words and Expressions .....	(223)
Translation(B) 电力工程项目的经济评价.....	(224)
Exercises to the Text (B) .....	(226)
练习答案.....	(227)
Reading Material (A) On - line Real - time Systems .....	(228)
New Words and Expressions .....	(231)
Notes .....	(232)
Translation(A) 在线实时系统 .....	(232)
Reading Material (B) How to study Tariffs .....	(234)
Translation(B) 怎样研究电价问题. ....	(237)

# PART I . China's Power Industry

## Text

### The Status quo and Prospect of China's Power Industry

Since the founding of the People's Republic of China in 1949, the electric power industry<sup>1</sup> of our country has made big strides in its development, the total installed capacity<sup>2</sup> increased from 1,850 MW in 1949 to more than 100 GW<sup>3</sup> by the end of 1987, the annual generation of electricity from 4.3 TWH<sup>4</sup> to 496 TWH. The installed capacity has moved up from 25th to 6th in the world and annual electricity generation ranked 5th only after U. S. A. , USSR<sup>5</sup>, Japan and Canada. By the end of 1987, the electric power was generated mainly by thermal<sup>6</sup> and hydro<sup>7</sup> power plants, among which hydropower capacity was 29.5% and the rest was thermal generating capacity. The portion of electricity generated by hydropower plants was around 20%.

The average annual increase rate of the installed capacity and electricity generation were respectively 11% and 13.4% during the past 38 years.

At the time of liberation, there was not any complete power network<sup>8</sup> in the country (there was only one 220 kv and several 154 kv transmission lines<sup>9</sup> in the Northeast China Region), whereas by the end of 1987, there were 12 power networks each with a

capacity of over 1,000MW, among which 4 have a capacity of over 12,000 MW each i. e. Northeast China, North China, East China and Central China Networks.

There were by 1987 in the whole country 4,202 km of 500 kv transmission lines with a transformation capacity of 12,390 MVA<sup>11</sup>, 2,462 km of 330 kv lines with a capacity of 2,790 MVA<sup>10</sup>. 99.4 % of the counties and 88.9% of the villages of our country had got electricity supply.

Up to the end of 1987<sup>12</sup>, there were in operation 9 thermal power plants and 2 hydro power plants each with an installed capacity of more than 1,000 MW<sup>13</sup>.

China's largest thermal power plant at present is Jianbi Power Plant in Jiangsu Province, with an installed capacity of 1,625 MW while the largest hydropower plant is in Gezhouba in Hubei Province with an installed capacity by the end of 1987 of 2,215 MW (its ultimate capacity will be 2,715MW).

At present, the largest operating thermal generating unit is 600 MW in capacity, which was installed in Yuanbaoshan Power Plant and put into operation at the end of 1985. By the end of 1986, there were 25 thermal generating units of 300 MW and 80 units of 200 — 250 MW in operation.

The largest China-made hydro power unit has a Capacity of 320MW, totalling 7 in number in operation.

China's nuclear power had already made a start. The 2 × 900MW PWR<sup>14</sup> reactor and turbogenerator units imported from France and the United Kingdom<sup>15</sup> being installed at Daya Bay Nuclear Power Plant in Guangdong Province are scheduled to be put

into operation in 1992. One China-made 300 MW PWR reactor and turbogenerator unit has been installed at Qinshan in Zhejiang Province, and is scheduled to be put into operation around 1990.

Of China's 100 GW generating equipment installed, 18.3% was imported from abroad, among which 6.9% was imported from USSR, 2.17% from Japan, 0.9% from France, 0.6% from Italy, 2.5% from Czechoslovakia and the remaining 5.19% from other countries. During the 7th Five Year Plan another 8,583 MW of generating equipment will be imported and put into operation.

Notwithstanding the rapid development of the electric power industry since 1949, the rate of development of the national economy and the electric power consumption for the daily use increase still faster. Hence there exists a wide gap between supply and demand in our country. Therefore, we must speed up the construction of the electric power industry to make the rate of development exceed, or at least keep in step with that of the national economy.

The "Outline of Electric Power Development for the Period 1986 — 2015" has clearly set the goals for the years 2000 and 2015. The basis of these two goals is to put the development of the electric power industry in step with, or slightly in advance of<sup>16</sup>, the development of the national economy.

The goal of Electric Power Development for the year 2000: By the end of this century<sup>17</sup>, China's GNP<sup>18</sup> is scheduled to be quadrupled as compared with that of 1980. The rate of development of electric power should at least keep pace with<sup>19</sup> this. The total installed capacity in the year 1980 was around 60 GW. Therefore in the year 2000, it should at least be fourfold of this

figure, i. e. 240 GW with a yearly generation of 1,200 TWH. The average yearly growth rate of the installed capacity should be 7% from 1980 — 2000. The execution of the 6th and 7th Five Year Plans promised to be propitious, the 6th Five Year Plan was fulfilled one year ahead of<sup>20</sup> schedule<sup>21</sup>, and it is expected that the 7th Five Year Plan will also be ahead of time. Thus judging from the actual rate of growth attained, the total installed capacity of generating equipment may reach 290 GW by the year 2000, and the yearly generation of electricity may reach 1,450 TWH.

The goal of Electric Power Development for the Year 2015: If the GNP of our country is to be doubled within the period from 2000 to 2015, the total installed capacity of generating equipment will reach 480 — 580 GW by 2015, the average yearly growth rate will be 4.37% during this period, which is realizable.

## New Words and Expressions

- status quo ['steitəskwou] n. 现状
- prospect ['prɒspekt] n. 前景
- stride [straɪd] n. 大步,阔步,进展,进步
- instal(l) [ɪn'stɔ:l] vt. 安装,设置
- capacity [kə'pæsɪti] n. 容量
- annual ['ænjʊəl] a. 每年的,年度的
- generation [dʒenə'reɪʃən] n. 产生,发生(电、热光等)
- move up 提前,上升
- rank [ræŋk] v. 列为,列在
- generate ['dʒenəreɪt] vt. 发生,产生(电、热、光等)

thermal [ˈθɜ:məl] *a.* 热的, 由热造成的  
hydro [ˈhaɪdrəʊ] (=hydroelectric) *a.* 水力发电的  
portion [ˈpɔ:ʃən] *n.* 一部分, 一份  
respectively [rɪsˈpektɪvli] *ad.* 分别地  
network [ˈnetwɜ:k] *n.* 网络、电路  
transmission [trænzˈmɪʃən] *n.* 传输, 传送  
region [ˈri:dʒən] *n.* 地区  
whereas [hweəˈæz] *conj.* 而, 却  
North China 华北  
Northeast China 中国东北  
ultimate [ˈʌltɪmɪt] *a.* 最终的, 最后的  
China-made 中国制造的  
nuclear [ˈnju:kliə] *a.* 原子能的  
reactor [riːˈæktə] *n.* 反应堆  
turbogenerator [tɜ:bouˈdʒenəreɪtə] *n.* 汽轮发电机  
import [ɪmˈpɔ:t] *vt.* 进口; 引入  
Kingdom [ˈkɪŋdəm] *n.* 王国  
schedule [ˈʃedju:l] *n.* 时间表; 计划表  
put into operation 投入运行  
Czechoslovakia [ˈtʃekou-slouˈvækɪə] *n.* 捷克斯洛伐克  
remaining [riˈmeɪnɪŋ] *a.* 剩余的, 其余的  
notwithstanding [nɒtwɪðˈstændɪŋ] *prep.* 尽管  
consumption [kənˈsʌmpʃən] *n.* 消费, 消耗  
gap [gæp] *n.* 差距  
outline [ˈaʊtlaɪn] *n.* 大纲, 提纲  
goal [gəʊl] *n.* 目的, 目标  
century [ˈsentʃuri] *n.* 世纪, 百年

- quadruple ['kwɒdrʌpl] *vt.* (使)成四倍  
 compare [kəm'peə] *vt.* 比较  
 pace [peɪs] *n.* 步;速度,进度  
 fourfold ['fɔ:fəʊld] *a.* 四倍的  
 figure ['fɪgə] *n.* 数字;外形,轮廓  
 execution [ˌɛksɪ'kju:ʃən] *n.* 实行;执行  
 promise ['prɒmɪs] *vt.* 给人以……的指望  
 propitious [prə'pɪʃəs] *a.* 顺利的,有利的,适合的  
 fulfil(1) [ful'fɪl] *vt.* 完成(计划,任务等)  
 judge [dʒʌdʒ] *vt.* 判断,断定  
 growth [grəʊθ] *n.* 增长,发展  
 attain [ə'teɪn] *vt.* 达到,完成  
 double ['dʌbl] *vt.* 使……加倍  
 realizable ['ri:əlaɪzəbl] *a.* 可实现的

## Notes

1. power industry = electric power industry 电力工业
2. installed capacity 装机容量
3. GW = gigawatt 千兆瓦
4. TWH = terawatt hour 10 亿千瓦小时  
 tera- [ˈterə] 垓, 万亿
5. USSR = the Union of Soviet Socialist Republic 苏维埃社会主义共和国联盟, 简称苏联
6. thermal power plant (station) 火力发电厂(站), 简称火电厂(站)



7. hydro(electric)power plant(station)水力发电厂(站)
8. power network = electric power network 电力网络,简称电网
9. transmission line 输电线路,有时在前边加 electric power 或 power
10. 这个 there be 句型中的后部成分太长,所以把 by 1987 in the whole country 这部分时间状语和地点状语插在句子中间,使句子显得紧凑些。
11. MVA = megavolt ampere 兆伏安
12. up to the end of 1987 到 1987 年底
13. 此句中 in operation 的位置同注 10
14. PWR = pressurized water reactor 压力水反应堆,简称压水堆
15. the United Kingdom 联合王国,指英国。其正式名称为 the United Kingdom of Great Britain and North Ireland 大不列颠与北爱尔兰联合王国
16. in advance of... 超过……
17. by the end of this century 到本世纪末
18. GNP = gross national product 国民生产总值
19. keep pace with... 同……齐步,同……并进;跟上
20. ahead of... 在……前面;优于
21. ahead of schedule = ahead of time 提前 例: one year ahead of schedule (time) 提前一年