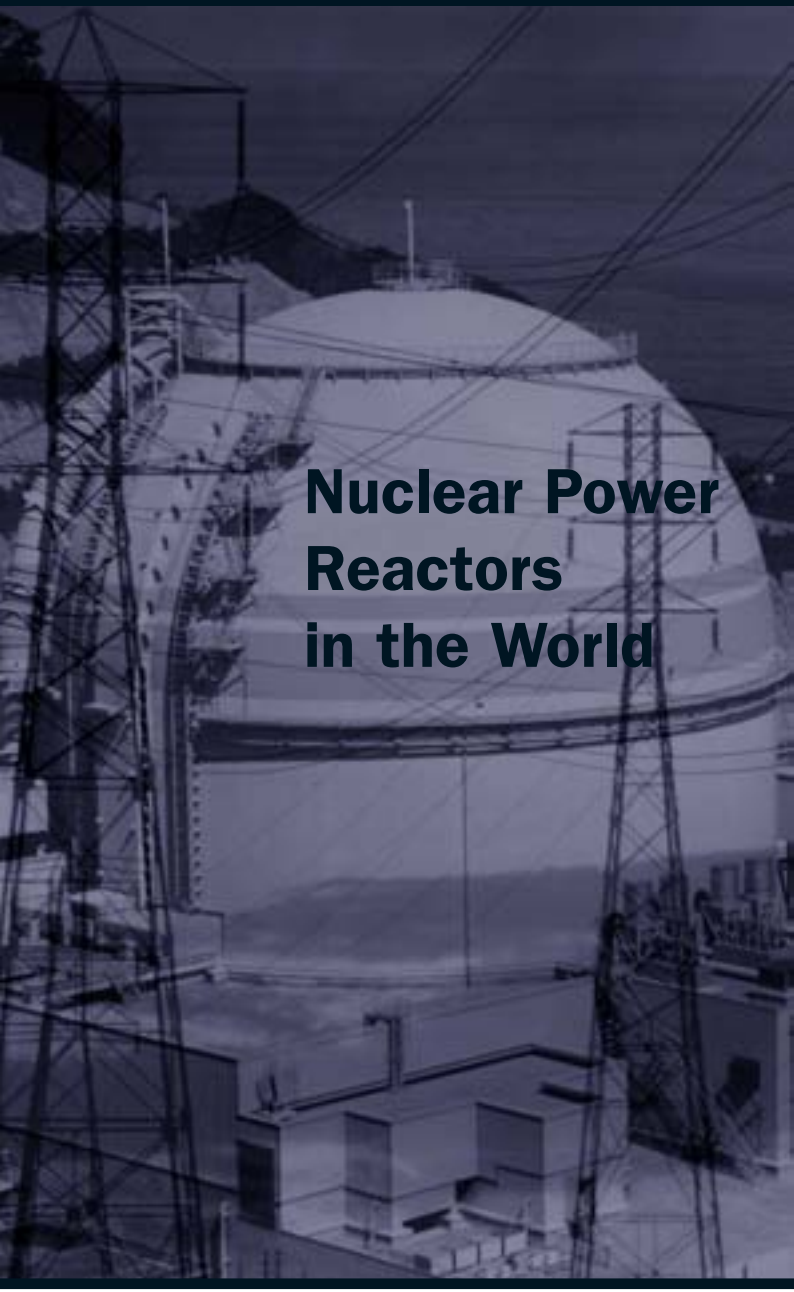
REFERENCE DATA SERIES No. 2 2007 Edition



# Nuclear Power Reactors in the World

IAEA
International Atomic Energy Agency

REFERENCE DATA SERIES No. 2

# NUCLEAR POWER REACTORS IN THE WORLD

2007 Edition

INTERNATIONAL ATOMIC ENERGY AGENCY
VIENNA, 2007

NUCLEAR POWER REACTORS IN THE WORLD
IAEA, VIENNA, 2007
IAEA-RDS-2/27
ISBN 978–92–0–105307–7
ISSN 1011–2642

Printed by the IAEA in Austria
June 2007

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# INTRODUCTION

This is the twenty-seventh edition of Reference Data Series No. 2, *Nuclear Power Reactors in the World*, which is published once per year, to present the most recent reactor data available to the Agency. It contains the following summarized information:

– General information as of the end of 2006 on power reactors operating or under construction, and shut down;
– Performance data on reactors operating in the Agency's Member States, as reported to the IAEA.

The Agency's Power Reactor Information System (PRIS) is a comprehensive data source on nuclear power reactors in the World. It includes specification and performance history data of operating reactors as well as reactors under construction or reactors being decommissioned. PRIS data are collected by the Agency through the designated national correspondents of Member States.

PRIS outputs are available in the annual publications and on the PRIS web site

www.iaea.org/programmes/a2.

Detail outputs are accessible to registered users through on-line applications. Enquiries should be addressed to:

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A-1400 Vienna, Austria

# DEFINITIONS

**Performance Factors**

$$\text{EAF (\%)} = \frac{(\text{REG} - \text{PEL} - \text{UEL} - \text{XEL})}{\text{REG}} \times 100$$

$$\text{UCF (\%)} = \frac{(\text{REG} - \text{PEL} - \text{UEL})}{\text{REG}} \times 100$$

$$\text{LF (\%)} = \frac{\text{EG}}{\text{REG}} \times 100$$

where

EAF is the energy availability factor, expressed in per cent.

UCF is the unit capability factor, expressed in per cent.

LF is the load factor, expressed in per cent.

REG reference energy generation: is the net electrical energy [MW·h], which would have been supplied when a unit is continuously operated at the reference unit power during the entire reference period.

PEL planned energy loss: is the energy [MW·h] that was not supplied during the period because of planned shutdowns or load reductions due to causes under plant management control. Energy losses are considered planned if they are scheduled at least four weeks in advance.

UEL unplanned energy loss: the energy [MW·h] that was not supplied during the period because of unplanned shutdowns, outage extensions, or load reductions due to causes under plant management control. Energy losses are considered to be unplanned if they are not scheduled at least four weeks in advance.

XEL external energy loss: the energy [MW·h], that was not supplied due to constraints reducing plant availability and being beyond plant management control.

EG the net electrical energy supplied during the reference period as measured at the unit outlet terminals, i.e. after deducting the electrical energy taken by unit auxiliaries and the losses in transformers that are considered integral parts of the unit.

**Construction Start**
Date when first major placing of concrete, usually for the base mat of the reactor building, is done.

**First Criticality**
Date when the reactor is made critical for the first time.

**Grid Connection**
Date when the plant is first connected to the electrical grid for the supply of power. After this date, the plant is considered to be in operation.

**Commercial Operation**
Date when the plant is handed over by the contractors to the owner and declared officially to be in commercial operation.

**Permanent Shutdown**
Date when the plant is officially declared to be shut down by the owner and taken out of operation permanently.

**Long-term Shutdown**
A unit is considered in the long-term shutdown status, if it has been shut down for an extended period (usually several years) without any firm recovery schedule at the beginning but there is the intention to re-start the unit eventually.

**Units and Energy Conversion**
1 terawatt-hour [TW·h] = $10^6$ megawatt-hours [MW·h].
For an average power plant,
1 TW·h = 0.39 megatonnes of coal equivalent (input)
= 0.23 megatonnes of oil equivalent (input).

TABLE 1. REACTORS IN OPERATION, LONG-TERM SHUTDOWN AND UNDER CONSTRUCTION, 31 DEC. 2006

| Country | Reactors in Operation | | Long-term Shut Down Reactors | | Reactors under Construction | | Nuclear Electricity Supplied in 2006 | |
|---|---|---|---|---|---|---|---|---|
| | No of Units | Total MW(e) | No of Units | Total MW(e) | No of Units | Total MW(e) | TW(e).h | % of Total |
| ARGENTINA | 2 | 935 | | | 1 | 692 | 7.15 | 6.93 |
| ARMENIA | 1 | 376 | | | | | 2.42 | 41.95 |
| BELGIUM | 7 | 5824 | | | | | 44.31 | 54.43 |
| BRAZIL | 2 | 1901 | | | | | 12.98 | 3.31 |
| BULGARIA | 2 | 1906 | | | 2 | 1906 | 18.15 | 43.64 |
| CANADA | 18 | 12610 | 4 | 2658 | | | 92.43 | 15.81 |
| CHINA | 10 | 7572 | | | 4 | 3610 | 51.81 | 1.93 |
| CZECH R. | 6 | 3523 | | | | | 24.50 | 31.48 |
| FINLAND | 4 | 2696 | | | 1 | 1600 | 22.00 | 27.99 |
| FRANCE | 59 | 63260 | | | | | 429.82 | 78.07 |
| GERMANY | 17 | 20339 | | | | | 158.71 | 31.82 |
| HUNGARY | 4 | 1755 | | | | | 12.51 | 37.70 |
| INDIA | 16 | 3577 | | | 7 | 3112 | 15.59 | 2.62 |
| IRAN | | | | | 1 | 915 | | |
| JAPAN | 55 | 47587 | 1 | 246 | 1 | 866 | 291.54 | 29.97 |
| KOREA RP | 20 | 17454 | | | 1 | 960 | 141.18 | 38.64 |
| LITHUANIA | 1 | 1185 | | | | | 7.94 | 72.30 |
| MEXICO | 2 | 1360 | | | | | 10.40 | 4.86 |
| NETHERLANDS | 1 | 482 | | | | | 3.27 | 3.47 |
| PAKISTAN | 2 | 425 | | | 1 | 300 | 2.55 | 2.74 |

TABLE 1. REACTORS IN OPERATION, LONG-TERM SHUTDOWN AND UNDER CONSTRUCTION, 31 DEC. 2006 — continued

| Country | Reactors in Operation | | Long-term Shut Down Reactors | | Reactors under Construction | | Nuclear Electricity Supplied in 2006 | |
|---|---|---|---|---|---|---|---|---|
| | No of Units | Total MW(e) | No of Units | Total MW(e) | No of Units | Total MW(e) | TW(e).h | % of Total |
| ROMANIA | 1 | 655 | | | 1 | 655 | 5.18 | 9.00 |
| RUSSIA | 31 | 21743 | | | 5 | 4525 | 144.64 | 15.91 |
| S.AFRICA | 2 | 1800 | | | | | 10.07 | 4.41 |
| SLOVAKIA | 5 | 2034 | | | | | 16.60 | 57.16 |
| SLOVENIA | 1 | 666 | | | | | 5.29 | 40.26 |
| SPAIN | 8 | 7450 | | | | | 57.43 | 19.82 |
| SWEDEN | 10 | 9097 | | | | | 65.05 | 47.98 |
| SWITZERLAND | 5 | 3220 | | | | | 26.37 | 37.41 |
| UK | 19 | 10965 | | | | | 69.39 | 18.40 |
| UKRAINE | 15 | 13107 | | | 2 | 1900 | 84.91 | 47.53 |
| USA | 103 | 99257 | 1 | 1065 | | | 788.31 | 19.42 |
| Total | 435 | 369682 | 6 | 3879 | 29 | 23641 | 2660.86 | 18.76 |

Note: The total includes the following data in Taiwan, China:

— 6 units, 4921 MW(e) in operation; 2 units, 2600 MW(e) under construction;

— 38.32 TW(e).h of nuclear electricity generation, representing 19.49% of the total electricity generated there;

The total share is related only to the countries with NPPs in operation.

TABLE 2. REACTOR TYPES AND NET ELECTRICAL POWER, REACTORS CONNECTED TO THE GRID, 31 DEC. 2006

| Country | PWR | | BWR | | GCR | | PHWR | | LWGR | | FBR | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | No. | MW(e) | No. | MW(e) | No. | MW(e) | No. | MW(e) | No. | MW(e) | No. | MW(e) | No. | MW(e) |
| ARGENTINA | | | | | | | 2 | 935 | | | | | 2 | 935 |
| ARMENIA | 1 | 376 | | | | | | | | | | | 1 | 376 |
| BELGIUM | 7 | 5824 | | | | | | | | | | | 7 | 5824 |
| BRAZIL | 2 | 1901 | | | | | | | | | | | 2 | 1901 |
| BULGARIA | 2 | 1906 | | | | | | | | | | | 2 | 1906 |
| CANADA | | | | | | | 18 | 12610 | | | | | 18 | 12610 |
| CHINA | 8 | 6272 | | | | | 2 | 1300 | | | | | 10 | 7572 |
| CZECH R. | 6 | 3523 | | | | | | | | | | | 6 | 3523 |
| FINLAND | 2 | 976 | 2 | 1720 | | | | | | | | | 4 | 2696 |
| FRANCE | 58 | 63130 | | | | | | | | | 1 | 130 | 59 | 63260 |
| GERMANY | 11 | 13968 | 6 | 6371 | | | | | | | | | 17 | 20339 |
| HUNGARY | 4 | 1755 | | | | | | | | | | | 4 | 1755 |
| INDIA | | | 2 | 300 | | | 14 | 3277 | | | | | 16 | 3577 |
| JAPAN | 23 | 18420 | 32 | 29167 | | | | | | | | | 55 | 47587 |
| KOREA RP | 16 | 14825 | | | | | 4 | 2629 | | | | | 20 | 17454 |
| LITHUANIA | | | | | | | | | 1 | 1185 | | | 1 | 1185 |
| MEXICO | | | 2 | 1360 | | | | | | | | | 2 | 1360 |
| NETHERLANDS | 1 | 482 | | | | | | | | | | | 1 | 482 |
| PAKISTAN | 1 | 300 | | | | | 1 | 125 | | | | | 2 | 425 |
| ROMANIA | | | | | | | 1 | 655 | | | | | 1 | 655 |
| RUSSIA | 15 | 10964 | | | | | | | 15 | 10219 | 1 | 560 | 31 | 21743 |
| S.AFRICA | 2 | 1800 | | | | | | | | | | | 2 | 1800 |
| SLOVAKIA | 5 | 2034 | | | | | | | | | | | 5 | 2034 |

TABLE 2. REACTOR TYPES AND NET ELECTRICAL POWER, REACTORS CONNECTED TO THE GRID, 31 DEC. 2006 — continued

| Country | PWR | | BWR | | GCR | | PHWR | | LWGR | | FBR | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | No. | MW(e) | No. | MW(e) | No. | MW(e) | No. | MW(e) | No. | MW(e) | No. | MW(e) | No. | MW(e) |
| SLOVENIA | 1 | 666 | | | | | | | | | | | 1 | 666 |
| SPAIN | 6 | 5940 | 2 | 1510 | | | | | | | | | 8 | 7450 |
| SWEDEN | 3 | 2819 | 7 | 6278 | | | | | | | | | 10 | 9097 |
| SWITZERLAND | 3 | 1700 | 2 | 1520 | | | | | | | | | 5 | 3220 |
| UK | 1 | 1196 | | | 18 | 9769 | | | | | | | 19 | 10965 |
| UKRAINE | 15 | 13107 | | | | | | | | | | | 15 | 13107 |
| USA | 69 | 66668 | 34 | 32589 | | | | | | | | | 103 | 99257 |
| TOTAL | 264 | 242332 | 93 | 83956 | 18 | 9769 | 42 | 21531 | 16 | 11404 | 2 | 690 | 435 | 369682 |

The totals include 6 units, 4921 MW(e) in Taiwan, China.

During 2006, 2 reactors, 1490 MW(e) were newly connected to the grid.

TABLE 3. REACTOR TYPES AND NET ELECTRICAL POWER, REACTORS UNDER CONSTRUCTION, 31 DEC. 2006

| Country | PWR | | BWR | | PHWR | | LWGR | | FBR | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | No. | MW(e) | No. | MW(e) | No. | MW(e) | No. | MW(e) | No. | MW(e) | No. | MW(e) |
| ARGENTINA | | | | | 1 | 692 | | | | | 1 | 692 |
| BULGARIA | 2 | 1906 | | | | | | | | | 2 | 1906 |
| CHINA | 4 | 3610 | | | | | | | | | 4 | 3610 |
| FINLAND | 1 | 1600 | | | | | | | | | 1 | 1600 |
| INDIA | 2 | 1834 | | | 4 | 808 | | | 1 | 470 | 7 | 3112 |
| IRAN | 1 | 915 | | | | | | | | | 1 | 915 |
| JAPAN | 1 | 866 | | | | | | | | | 1 | 866 |
| KOREA RP | 1 | 960 | | | | | | | | | 1 | 960 |
| PAKISTAN | 1 | 300 | | | | | | | | | 1 | 300 |
| ROMANIA | | | | | 1 | 655 | | | | | 1 | 655 |
| RUSSIA | 3 | 2850 | | | | | 1 | 925 | 1 | 750 | 5 | 4525 |
| UKRAINE | 2 | 1900 | | | | | | | | | 2 | 1900 |
| TOTAL | 18 | 16741 | (*) 2 | 2600 | 6 | 2155 | 1 | 925 | 2 | 1220 | (*) 29 | 23641 |

(*) The totals include 2 BWR units, 2600 MW(e) in Taiwan, China.

During 2006, 4 reactors (3320 MW(e)) started construction.

TABLE 4. CONSTRUCTION STARTS DURING 2006

| Country | Reactor | | Type | Capacity MW(e) | | Operator | NSSS Supplier | Construction Start | First Criticality | Grid Connection | Commercial Operation |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Code | Name | | Net | Gross | | | | | | |
| CHINA | CN -13 | LINGAO 4 | PWR | 1000 | 1086 | LDNPC | DFEC | 2006-6 | — | — | — |
| | CN -14 | QINSHAN 2-3 | PWR | 610 | 650 | NPQJVC | CNNC | 2006-3 | 2010-11 | 2010-12 | 2011-3 |
| KOREA RP | KR -21 | SHIN-KORI-1 | PWR | 960 | 1000 | KHNP | DHICKOPC | 2006-6 | 2010-7 | 2010-8 | 2010-12 |
| RUSSIA | RU -116 | BELOYARSKY-4(BN-800) | FBR | 750 | 800 | REA | | 2006-7 | — | — | — |

During 2006, 4 reactors (3320 MW(e)) started construction.

TABLE 5. CONNECTIONS TO THE GRID DURING 2006

| Country | Reactor | | Type | Capacity MW(e) | | Operator | NSSS Supplier | Construction Start | First Criticality | Grid Connection | Commercial Operation |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Code | Name | | Net | Gross | | | | | | |
| CHINA | CN -10 | TIANWAN 1 | PWR | 1000 | 1060 | JNPC | ASEA | 1999-10 | 2005-12 | 2006-5 | — |
| INDIA | IN -23 | TARAPUR-3 | PHWR | 490 | 540 | NPCIL | NPCIL | 2000-5 | 2006-5 | 2006-6 | 2006-8 |

During 2006, 2 reactors (1490 MW(e)) were newly connected to the grid.

TABLE 6. SCHEDULED CONNECTIONS TO THE GRID DURING 2007

| Country | Reactor | | Type | Capacity MW(e) | | Operator | NSSS Supplier | Construction Start | First Criticality | Grid Connection | Commercial Operation |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Code | Name | | Net | Gross | | | | | | |
| CHINA | CN -11 | TIANWAN 2 | PWR | 1000 | 1060 | JNPC | AEE&ZAES | 2000-10 | 2007-10 | 2007-11 | — |
| INDIA | IN -15 | KAIGA-3 | PHWR | 202 | 220 | NPCIL | NPCIL | 2002-3 | 2007-2 | 2007-4 | 2007-6 |
| | IN -16 | KAIGA-4 | PHWR | 202 | 220 | NPCIL | NPCIL | 2002-5 | 2007-6 | 2007-7 | 2007-9 |
| | IN -19 | RAJASTHAN-5 | PHWR | 202 | 220 | NPCIL | NPCIL | 2002-9 | 2007-5 | 2007-6 | 2007-8 |
| | IN -20 | RAJASTHAN-6 | PHWR | 202 | 220 | NPCIL | NPCIL | 2003-1 | 2007-11 | 2007-12 | 2008-2 |
| IRAN | IR -1 | BUSHEHR-1 | PWR | 915 | 1000 | AEOI | ASE | 1975-5 | 2007-6 | 2007-11 | 2008-6 |
| ROMANIA | RO -2 | CERNAVODA-2 | PHWR | 655 | 706 | SNN | AECL | 1983-7 | 2007-4 | 2007-7 | 2007-8 |

During 2007, 7 reactors (3378 MW(e)) are expected to achieve grid connection.

TABLE 7. REACTOR YEARS EXPERIENCE, UP TO 31 DEC. 2006

| Country | Reactors Connected to the Grid | | Long-term Shut Down Reactors | | Permanently Shut Down Reactors | | Total, Operating and Shut Down | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | No | Capacity MW(e) Net | No | Capacity MW(e) Net | No | Capacity MW(e) Net | No | Capacity MW(e) Net | Experience Years | Months |
| ARGENTINA | 2 | 935 | | | | | 2 | 935 | 56 | 7 |
| ARMENIA | 1 | 376 | | | 1 | 376 | 2 | 752 | 32 | 8 |
| BELGIUM | 7 | 5824 | | | 1 | 11 | 8 | 5835 | 212 | 7 |
| BRAZIL | 2 | 1901 | | | | | 2 | 1901 | 31 | 3 |
| BULGARIA | 2 | 1906 | | | 4 | 1632 | 6 | 3538 | 141 | 3 |
| CANADA | 18 | 12610 | 4 | 2568 | 3 | 478 | 25 | 15656 | 528 | 1 |
| CHINA | 10 | 7572 | | | | | 10 | 7572 | 66 | 7 |
| CZECH R. | 6 | 3523 | | | | | 6 | 3523 | 92 | 10 |
| FINLAND | 4 | 2696 | | | | | 4 | 2696 | 111 | 4 |
| FRANCE | 59 | 63260 | | | 11 | 3951 | 70 | 67211 | 1523 | 2 |
| GERMANY | 17 | 20339 | | | 19 | 5944 | 36 | 26283 | 700 | 5 |
| HUNGARY | 4 | 1755 | | | | | 4 | 1755 | 86 | 2 |
| INDIA | 16 | 3577 | | | | | 16 | 3577 | 267 | 7 |
| ITALY | | | | | 4 | 1423 | 4 | 1423 | 81 | |
| JAPAN | 55 | 47587 | 1 | 246 | 3 | 320 | 59 | 48153 | 1276 | 8 |
| KAZAKHSTAN | | | | | 1 | 52 | 1 | 52 | 25 | 10 |
| KOREA RP | 20 | 17454 | | | | | 20 | 17454 | 279 | 8 |
| LITHUANIA | 1 | 1185 | | | 1 | 1185 | 2 | 2370 | 40 | 6 |
| MEXICO | 2 | 1360 | | | | | 2 | 1360 | 29 | 11 |
| NETHERLANDS | 1 | 482 | | | 1 | 55 | 2 | 537 | 62 | |

TABLE 7. REACTOR YEARS EXPERIENCE, UP TO 31 DEC. 2006 — continued

| Country | Reactors Connected to the Grid | | Long-term Shut Down Reactors | | Permanently Shut Down Reactors | | Total, Operating and Shut Down | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | No | Capacity MW(e) Net | | | No | Capacity MW(e) Net | No | Capacity MW(e) Net | Experience Years | Months |
| PAKISTAN | 2 | 425 | | | | | 2 | 425 | 41 | 10 |
| ROMANIA | 1 | 655 | | | | | 1 | 655 | 10 | 6 |
| RUSSIA | 31 | 21743 | | | 5 | 786 | 36 | 22529 | 901 | 4 |
| S.AFRICA | 2 | 1800 | | | | | 2 | 1800 | 44 | 3 |
| SLOVAKIA | 5 | 2034 | | | 2 | 518 | 7 | 2552 | 118 | 7 |
| SLOVENIA | 1 | 666 | | | | | 1 | 666 | 25 | 3 |
| SPAIN | 8 | 7450 | | | 2 | 621 | 10 | 8071 | 245 | 6 |
| SWEDEN | 10 | 9097 | | | 3 | 1225 | 13 | 10322 | 342 | 6 |
| SWITZERLAND | 5 | 3220 | | | | | 5 | 3220 | 158 | 10 |
| UK | 19 | 10965 | | | 26 | 3324 | 45 | 14289 | 1400 | 8 |
| UKRAINE | 15 | 13107 | | | 4 | 3500 | 19 | 16607 | 323 | 6 |
| USA | 103 | 99257 | 1 | 1065 | 28 | 9764 | 132 | 110086 | 3188 | 2 |
| Total | 435 | 369682 | 6 | 3879 | 119 | 35165 | 560 | 408726 | 12599 | 1 |

Notes:

1. The total includes the following data in Taiwan, China:

   — reactors connected to the grid: 6 units, 4921 MW(e), 152 years 1 month.

2. Operating experience is counted from grid connection.

TABLE 8. OPERATING REACTORS AND NET ELECTRICAL POWER, 1975 TO 2006

| Country | Number of Units and Net Capacity (MW(e)) Connected to the Grid at 31st Dec. of Each Year | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1975 | | 1980 | | 1985 | | 1990 | | 1995 | | 2000 | | 2005 | | 2006 | |
| | No. | MW(e) | No. | MW(e) | No. | MW(e) | No. | MW(e) | No. | MW(e) | No. | MW(e) | No. | MW(e) | No. | MW(e) |
| ARGENTINA | 1 | 319 | 1 | 335 | 2 | 935 | 2 | 935 | 2 | 935 | 2 | 935 | 2 | 935 | 2 | 935 |
| ARMENIA | | | 2 | 752 | 2 | 752 | | | 1 | 376 | 1 | 376 | 1 | 376 | 1 | 376 |
| BELGIUM | 4 | 1680 | 4 | 1670 | 8 | 5464 | 7 | 5501 | 7 | 5631 | 7 | 5712 | 7 | 5801 | 7 | 5824 |
| BRAZIL | | | | | 1 | 626 | 1 | 626 | 1 | 626 | 2 | 1901 | 2 | 1901 | 2 | 1901 |
| BULGARIA | 2 | 811 | 3 | 1224 | 4 | 1632 | 5 | 2585 | 6 | 3538 | 6 | 3666 | 4 | 2722 | 2 | 1906 |
| CANADA | 7 | 2531 | 10 | 5172 | 16 | 9741 | 20 | 13993 | 21 | 14902 | 14 | 9998 | 18 | 12584 | 18 | 12610 |
| CHINA | | | | | | | | | 3 | 2188 | 3 | 2188 | 9 | 6587 | 10 | 7572 |
| CZECH R. | | | | | 1 | 391 | 4 | 1632 | 4 | 1782 | 5 | 2560 | 6 | 3373 | 6 | 3523 |
| FINLAND | | | 4 | 2208 | 4 | 2300 | 4 | 2310 | 4 | 2310 | 4 | 2656 | 4 | 2676 | 4 | 2696 |
| FRANCE | 10 | 2931 | 22 | 14388 | 43 | 37478 | 56 | 55808 | 56 | 58573 | 59 | 63183 | 59 | 63363 | 59 | 63260 |
| GERMANY | 12 | 4068 | 19 | 10403 | 24 | 18190 | 21 | 21197 | 19 | 20942 | 19 | 21177 | 17 | 20339 | 17 | 20339 |
| HUNGARY | | | | | 2 | 825 | 4 | 1710 | 4 | 1729 | 4 | 1729 | 4 | 1755 | 4 | 1755 |
| INDIA | 3 | 606 | 4 | 832 | 6 | 1143 | 7 | 1314 | 10 | 1746 | 14 | 2508 | 15 | 2993 | 16 | 3577 |
| ITALY | 3 | 563 | 4 | 1112 | 3 | 1273 | | | | | | | | | | |
| JAPAN | 13 | 6258 | 23 | 14918 | 33 | 23612 | 41 | 30867 | 50 | 39625 | 52 | 43245 | 55 | 47593 | 55 | 47587 |
| KAZAKHSTAN | 1 | 135 | 1 | 135 | 1 | 135 | 1 | 135 | 1 | 50 | | | | | | |
| KOREA RP | | | 1 | 564 | 5 | 3580 | 9 | 7220 | 11 | 9115 | 16 | 12990 | 20 | 16810 | 20 | 17454 |
| LITHUANIA | | | | | 1 | 1380 | 2 | 2760 | 2 | 2370 | 2 | 2370 | 1 | 1185 | 1 | 1185 |
| MEXICO | | | | | | | 1 | 640 | 2 | 1256 | 2 | 1290 | 2 | 1360 | 2 | 1360 |
| NETHERLANDS | 2 | 498 | 2 | 498 | 2 | 508 | 2 | 539 | 2 | 510 | 1 | 449 | 1 | 450 | 1 | 482 |

TABLE 8. OPERATING REACTORS AND NET ELECTRICAL POWER, 1975 TO 2006 — continued

| Country | Number of Units and Net Capacity (MW(e)) Connected to the Grid at 31st Dec. of Each Year | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1975 | | 1980 | | 1985 | | 1990 | | 1995 | | 2000 | | 2005 | | 2006 | |
| | No. | MW(e) | No. | MW(e) | No. | MW(e) | No. | MW(e) | No. | MW(e) | No. | MW(e) | No. | MW(e) | No. | MW(e) |
| PAKISTAN | 1 | 126 | 1 | 125 | 1 | 137 | 1 | 125 | 1 | 125 | 2 | 425 | 2 | 425 | 2 | 425 |
| ROMANIA | | | | | | | | | | | 1 | 655 | 1 | 655 | 1 | 655 |
| RUSSIA | 14 | 4301 | 20 | 8596 | 28 | 15841 | 29 | 18898 | 30 | 19848 | 30 | 19848 | 31 | 21743 | 31 | 21743 |
| S.AFRICA | | | | | 2 | 1840 | 2 | 1840 | 2 | 1840 | 2 | 1840 | 2 | 1800 | 2 | 1800 |
| SLOVAKIA | 1 | 100 | 2 | 780 | 4 | 1632 | 4 | 1632 | 4 | 1632 | 6 | 2440 | 6 | 2442 | 5 | 2034 |
| SLOVENIA | | | | | 1 | 632 | 1 | 620 | 1 | 620 | 1 | 676 | 1 | 656 | 1 | 666 |
| SPAIN | 3 | 1073 | 3 | 1073 | 8 | 5608 | 9 | 7099 | 9 | 7097 | 9 | 7468 | 9 | 7591 | 8 | 7450 |
| SWEDEN | 5 | 3186 | 8 | 5515 | 12 | 9455 | 12 | 9919 | 12 | 10058 | 11 | 9417 | 10 | 8916 | 10 | 9097 |
| SWITZERLAND | 3 | 1006 | 4 | 1940 | 5 | 2881 | 5 | 2942 | 5 | 3056 | 5 | 3170 | 5 | 3220 | 5 | 3220 |
| UK | 30 | 4515 | 33 | 6507 | 38 | 10151 | 37 | 11410 | 35 | 12922 | 33 | 12498 | 23 | 11852 | 19 | 10965 |
| UKRAINE | | | 3 | 2286 | 10 | 8324 | 15 | 13020 | 15 | 13045 | 13 | 11195 | 15 | 13107 | 15 | 13107 |
| USA | 54 | 35991 | 69 | 50849 | 90 | 74283 | 108 | 96188 | 108 | 97933 | 103 | 96156 | 103 | 98145 | 103 | 99257 |
| WORLD | 169 | 70580 | 245 | 133122 | 363 | 245752 | 416 | 318386 | 434 | 341429 | 435 | 349852 | 441 | 368239 | 435 | 369682 |

Note: The world total includes the following data in Taiwan, China:

— 1980: 2 units 1208 MW(e),1985 6 units, 4890 MW(e),1990 6 units, 4828 MW(e),1995,2000,2005: 6 units, 4884 MW(e) 2006 6 units, 4921 MW(e).

Estimates for 2007 based on current expected grid connection dates for reactors under construction as of 31 December 2006.

TABLE 9. REACTORS UNDER CONSTRUCTION, 31 DEC. 2006

| Country | Reactor | | Type | Capacity MW(e) | | Operator | NSSS Supplier | Construction Start | First Criticality | Grid Connection | Commercial Operation |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Code | Name | | Net | Gross | | | | | | |
| ARGENTINA | AR -3 | ATUCHA-2 | PHWR | 692 | 745 | NASA | SIEMENS | 1981-7 | — | — | — |
| BULGARIA | BG -7 | BELENE-1 | PWR | 953 | 1000 | KOZNPP | ASE | 1987-1 | — | — | — |
| | BG -8 | BELENE-2 | PWR | 953 | 1000 | KOZNPP | ASE | 1987-3 | — | — | — |
| CHINA | CN -12 | LINGAO 3 | PWR | 1000 | 1087 | LDNPC | DFEC | 2005-12 | 2010-7 | 2010-8 | 2010-12 |
| | CN -13 | LINGAO 4 | PWR | 1000 | 1086 | LDNPC | DFEC | 2006-6 | — | — | — |
| | CN -14 | QINSHAN 2-3 | PWR | 610 | 650 | NPQJVC | CNNC | 2006-3 | 2010-11 | 2010-12 | 2011-3 |
| | CN -11 | TIANWAN 2 | PWR | 1000 | 1060 | JNPC | AEE&ZAES | 2000-10 | 2007-10 | 2007-11 | — |
| FINLAND | FI -5 | OLKILUOTO-3 | PWR | 1600 | 1720 | TVO | Areva | 2005-8 | — | — | 2010-12 |
| INDIA | IN -15 | KAIGA-3 | PHWR | 202 | 220 | NPCIL | NPCIL | 2002-3 | 2007-2 | 2007-3 | 2007-3 |
| | IN -16 | KAIGA-4 | PHWR | 202 | 220 | NPCIL | NPCIL | 2002-5 | 2007-6 | 2007-7 | 2007-9 |
| | IN -25 | KUDANKULAM-1 | PWR | 917 | 1000 | NPCIL | MAEP | 2002-3 | 2008-12 | 2009-1 | 2009-3 |
| | IN -26 | KUDANKULAM-2 | PWR | 917 | 1000 | NPCIL | MAEP | 2002-7 | 2009-6 | 2009-7 | 2009-9 |
| | IN -29 | PFBR | FBR | 470 | 500 | BHAVINI | | 2004-10 | — | — | — |
| | IN -19 | RAJASTHAN-5 | PHWR | 202 | 220 | NPCIL | NPCIL | 2002-9 | 2007-5 | 2007-6 | 2007-8 |
| | IN -20 | RAJASTHAN-6 | PHWR | 202 | 220 | NPCIL | NPCIL | 2003-1 | 2007-11 | 2007-12 | 2008-2 |
| IRAN | IR -1 | BUSHEHR-1 | PWR | 915 | 1000 | AEOI | ASE | 1975-5 | 2007-6 | 2007-11 | 2008-6 |
| JAPAN | JP -64 | TOMARI-3 | PWR | 866 | 912 | HEPCO | MHI | 2004-11 | — | — | 2009-12 |
| KOREA RP | KR -21 | SHIN-KORI-1 | PWR | 960 | 1000 | KHNP | DHICKOPC | 2006-6 | 2010-7 | 2010-8 | 2010-12 |
| PAKISTAN | PK -3 | CHASNUPP 2 | PWR | 300 | 325 | PAEC | CNNC | 2005-12 | 2011-4 | 2011-5 | 2011-8 |

TABLE 9. REACTORS UNDER CONSTRUCTION, 31 DEC. 2006 — continued

| Country | Reactor | | Type | Capacity MW(e) | | Operator | NSSS Supplier | Construction Start | First Criticality | Grid Connection | Commercial Operation |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Code | Name | | Net | Gross | | | | | | |
| ROMANIA | RO -2 | CERNAVODA-2 | PHWR | 655 | 706 | SNN | AECL | 1983-7 | 2007-4 | 2007-7 | 2007-8 |
| RUSSIA | RU -114 | BALAKOVO-5 | PWR | 950 | 1000 | REA | | 1987-4 | 1999-12 | 2010-12 | — |
| | RU -116 | BELOYARSKY-4(BN-800) | FBR | 750 | 800 | REA | | 2006-7 | — | — | — |
| | RU -37 | KALININ-4 | PWR | 950 | 1000 | REA | | 1986-8 | 1999-12 | 2010-12 | — |
| | RU -120 | KURSK-5 | LWGR | 925 | 1000 | REA | FAEA | 1985-12 | 1999-12 | 2010-12 | — |
| | RU -62 | VOLGODONSK-2 | PWR | 950 | 1000 | REA | FAEA | 1983-5 | 1999-12 | 2008-12 | — |
| UKRAINE | UA -51 | KHMELNITSKI-3 | PWR | 950 | 1000 | NNEGC | | 1986-3 | — | 2015-1 | — |
| | UA -52 | KHMELNITSKI-4 | PWR | 950 | 1000 | NNEGC | | 1987-2 | — | 2016-1 | — |

Status as of 31 December 2006, 29 reactors (23641 MW(e)) are under construction, including 2 units (2600 MW(e)) in Taiwan, China.

TABLE 10. REACTORS IN OPERATION, 31 DEC. 2006

| Country | Reactor | | Type | Capacity MW(e) | | | Operator | NSSS Supplier | Construction Start | Grid Connection | Commercial Operation | LF % to 2005 | UCF % to 2005 | Non-Electrical Applics |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Code | Name | | Net | Gross | Thermal | | | | | | | | |
| ARGENTINA | AR -1 | ATUCHA-1 | PHWR | 335 | 357 | 1179 | NASA | SIEMENS | 1968-6 | 1974-3 | 1974-6 | 67.0 | 72.0 | - |
| | AR -2 | EMBALSE | PHWR | 600 | 648 | 2015 | NASA | AECL | 1974-4 | 1983-4 | 1984-1 | 84.0 | 87.0 | - |
| ARMENIA | AM -19 | ARMENIA-2 | PWR | 376 | 408 | 1375 | JSC | FAEA | 1975-7 | 1980-1 | 1980-5 | 58.0 | 67.0 | - |
| BELGIUM | BE -2 | DOEL-1 | PWR | 392 | 412 | 1192 | ELECTRAB | ACECOWEN | 1969-7 | 1974-8 | 1975-2 | 85.0 | 89.0 | - |
| | BE -4 | DOEL-2 | PWR | 433 | 454 | 1311 | ELECTRAB | ACECOWEN | 1971-9 | 1975-8 | 1975-12 | 81.0 | 86.0 | - |
| | BE -5 | DOEL-3 | PWR | 1006 | 1056 | 2775 | ELECTRAB | FRAMACEC | 1975-1 | 1982-6 | 1982-10 | 85.0 | 88.0 | - |
| | BE -7 | DOEL-4 | PWR | 1008 | 1041 | 2988 | ELECTRAB | ACECOWEN | 1978-12 | 1985-4 | 1985-7 | 83.0 | 84.0 | - |
| | BE -3 | TIHANGE-1 | PWR | 962 | 1009 | 2873 | ELECTRAB | ACLF | 1970-6 | 1975-3 | 1975-10 | 83.0 | 89.0 | - |
| | BE -6 | TIHANGE-2 | PWR | 1008 | 1055 | 3064 | ELECTRAB | FRAMACEC | 1976-4 | 1982-10 | 1983-6 | 86.0 | 88.0 | - |
| | BE -8 | TIHANGE-3 | PWR | 1015 | 1065 | 3000 | ELECTRAB | ACECOWEN | 1978-11 | 1985-6 | 1985-9 | 87.0 | 89.0 | - |
| BRAZIL | BR -1 | ANGRA-1 | PWR | 626 | 657 | 1876 | ELETRONU | WH | 1971-5 | 1982-4 | 1985-1 | 41.0 | 59.0 | - |
| | BR -2 | ANGRA-2 | PWR | 1275 | 1350 | 3764 | ELETRONU | KWU | 1976-1 | 2000-7 | 2001-2 | 75.0 | 83.0 | - |
| BULGARIA | BG -5 | KOZLODUY-5 | PWR | 953 | 1000 | 3000 | KOZNPP | AEE | 1980-7 | 1987-11 | 1988-12 | 50.0 | 64.0 | DH |
| | BG -6 | KOZLODUY-6 | PWR | 953 | 1000 | 3000 | KOZNPP | AEE | 1982-4 | 1991-8 | 1993-12 | 58.0 | 72.0 | DH |
| CANADA | CA -10 | BRUCE-3 | PHWR | 750 | 805 | 2832 | BRUCEPOW | NEI.P | 1972-7 | 1977-12 | 1978-2 | 70.0 | 73.0 | - |
| | CA -11 | BRUCE-4 | PHWR | 750 | 805 | 2832 | BRUCEPOW | NEI.P | 1972-9 | 1978-12 | 1979-1 | 69.0 | 70.0 | - |
| | CA -18 | BRUCE-5 | PHWR | 795 | 840 | 2832 | BRUCEPOW | OH/AECL | 1978-6 | 1984-12 | 1985-3 | 82.0 | 83.0 | - |
| | CA -19 | BRUCE-6 | PHWR | 822 | 891 | 2690 | BRUCEPOW | OH/AECL | 1978-1 | 1984-6 | 1984-9 | 79.0 | 80.0 | - |
| | CA -20 | BRUCE-7 | PHWR | 822 | 840 | 2832 | BRUCEPOW | OH/AECL | 1979-5 | 1986-2 | 1986-4 | 82.0 | 83.0 | - |

The column Non-Electrical Applications indicates the use of the facility to provide: DS desalination, DH district heating, PH process heating.

TABLE 10. REACTORS IN OPERATION, 31 DEC. 2006 — continued

| Country | Reactor | | Type | Capacity MW(e) | | | Operator | NSSS Supplier | Construction Start | Grid Connection | Commercial Operation | LF % to 2005 | UCF % to 2005 | Non-Electrical Applics |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Code | Name | | Net | Gross | Thermal | | | | | | | | |
| CANADA | CA -21 | BRUCE-8 | PHWR | 795 | 840 | 2690 | BRUCEPOW | OH/AECL | 1979-8 | 1987-3 | 1987-5 | 80.0 | 82.0 | - |
| | CA -22 | DARLINGTON-1 | PHWR | 878 | 934 | 2776 | OPG | OH/AECL | 1982-4 | 1990-12 | 1992-11 | 82.0 | 83.0 | - |
| | CA -23 | DARLINGTON-2 | PHWR | 878 | 934 | 2776 | OPG | OH/AECL | 1981-9 | 1990-1 | 1990-10 | 74.0 | 76.0 | - |
| | CA -24 | DARLINGTON-3 | PHWR | 878 | 934 | 2776 | OPG | OH/AECL | 1984-9 | 1992-12 | 1993-2 | 83.0 | 85.0 | - |
| | CA -25 | DARLINGTON-4 | PHWR | 878 | 934 | 2776 | OPG | OH/AECL | 1985-7 | 1993-4 | 1993-6 | 84.0 | 85.0 | - |
| | CA -12 | GENTILLY-2 | PHWR | 635 | 675 | 2156 | HQ | BBC | 1974-4 | 1982-12 | 1983-10 | 78.0 | 84.0 | - |
| | CA -4 | PICKERING-1 | PHWR | 515 | 542 | 1744 | OPG | OH/AECL | 1966-6 | 1971-4 | 1971-7 | 61.0 | 67.0 | - |
| | CA -7 | PICKERING-4 | PHWR | 515 | 542 | 1744 | OPG | OH/AECL | 1968-5 | 1973-5 | 1973-6 | 66.0 | 67.0 | - |
| | CA -13 | PICKERING-5 | PHWR | 516 | 540 | 1744 | OPG | OH/AECL | 1974-11 | 1982-12 | 1983-5 | 73.0 | 74.0 | - |
| | CA -14 | PICKERING-6 | PHWR | 516 | 540 | 1744 | OPG | OH/AECL | 1975-10 | 1983-11 | 1984-2 | 76.0 | 77.0 | - |
| | CA -15 | PICKERING-7 | PHWR | 516 | 540 | 1744 | OPG | OH/AECL | 1976-3 | 1984-11 | 1985-1 | 78.0 | 79.0 | - |
| | CA -16 | PICKERING-8 | PHWR | 516 | 540 | 1744 | OPG | OH/AECL | 1976-9 | 1986-1 | 1986-2 | 75.0 | 76.0 | - |
| | CA -17 | POINT LEPREAU | PHWR | 635 | 680 | 2180 | NBEPC | AECL | 1975-5 | 1982-9 | 1983-2 | 82.0 | 83.0 | - |
| CHINA | CN -2 | GUANGDONG-1 | PWR | 944 | 984 | 2905 | GNPJVC | GEC | 1987-8 | 1993-8 | 1994-2 | 80.0 | 85.0 | - |
| | CN -3 | GUANGDONG-2 | PWR | 944 | 984 | 2905 | GNPJVC | GEC | 1988-4 | 1994-2 | 1994-5 | 80.0 | 83.0 | - |
| | CN -6 | LINGAO 1 | PWR | 938 | 990 | 2895 | LANPC | FRAM | 1997-5 | 2002-2 | 2002-5 | 86.0 | 87.0 | - |
| | CN -7 | LINGAO 2 | PWR | 938 | 990 | 2895 | LANPC | FRAM | 1997-11 | 2002-12 | 2003-1 | 88.0 | 88.0 | - |
| | CN -1 | QINSHAN 1 | PWR | 288 | 310 | 966 | QNPC | CNNC | 1985-3 | 1991-12 | 1994-4 | 76.0 | 77.0 | - |
| | CN -4 | QINSHAN 2-1 | PWR | 610 | 650 | 1930 | NPQJVC | CNNC | 1996-6 | 2002-2 | 2002-4 | 77.0 | 77.0 | - |
| | CN -5 | QINSHAN 2-2 | PWR | 610 | 650 | 1930 | NPQJVC | CNNC | 1997-4 | 2004-3 | 2004-5 | 89.0 | 88.0 | - |
| | CN -8 | QINSHAN 3-1 | PHWR | 650 | 700 | 2064 | TQNPC | AECL | 1998-6 | 2002-11 | 2002-12 | 87.0 | 86.0 | - |

TABLE 10. REACTORS IN OPERATION, 31 DEC. 2006 — continued

| Country | Reactor | | Type | Capacity MW(e) | | | Operator | NSSS Supplier | Construction Start | Grid Connection | Commercial Operation | LF % to 2005 | UCF % to 2005 | Non-Electrical Applics |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Code | Name | | Net | Gross | Thermal | | | | | | | | |
| CHINA | CN -9 | QINSHAN 3-2 | PHWR | 650 | 700 | 2064 | TQNPC | AECL | 1998-9 | 2003-6 | 2003-7 | 86.0 | 86.0 | - |
| | CN -10 | TIANWAN 1 | PWR | 1000 | 1060 | 3000 | JNPC | AEE&ZAES | 1999-10 | 2006-5 | — | (1) | (1) | - |
| CZECH R. | CZ -4 | DUKOVANY-1 | PWR | 412 | 440 | 1375 | CEZ | SKODA | 1979-1 | 1985-2 | 1985-5 | 83.0 | 83.0 | - |
| | CZ -5 | DUKOVANY-2 | PWR | 412 | 440 | 1375 | CEZ | SKODA | 1979-1 | 1986-1 | 1986-3 | 84.0 | 83.0 | - |
| | CZ -8 | DUKOVANY-3 | PWR | 427 | 456 | 1375 | CEZ | SKODA | 1979-3 | 1986-11 | 1986-12 | 83.0 | 83.0 | - |
| | CZ -9 | DUKOVANY-4 | PWR | 412 | 440 | 1375 | CEZ | SKODA | 1979-3 | 1987-6 | 1987-7 | 85.0 | 84.0 | - |
| | CZ -23 | TEMELIN-1 | PWR | 930 | 975 | 3000 | CEZ | SKODA | 1987-2 | 2000-12 | 2002-6 | 70.0 | 72.0 | DH |
| | CZ -24 | TEMELIN-2 | PWR | 930 | 975 | 3000 | CEZ | SKODA | 1987-2 | 2002-12 | 2003-4 | 69.0 | 68.0 | DH |
| FINLAND | FI -1 | LOVIISA-1 | PWR | 488 | 510 | 1500 | FORTUMPH | AEE | 1971-5 | 1977-2 | 1977-5 | 86.0 | 87.0 | - |
| | FI -2 | LOVIISA-2 | PWR | 488 | 510 | 1500 | FORTUMPH | AEE | 1972-8 | 1980-11 | 1981-1 | 88.0 | 89.0 | - |
| | FI -3 | OLKILUOTO-1 | BWR | 860 | 890 | 2500 | TVO | ASEASTAL | 1974-2 | 1978-9 | 1979-10 | 91.0 | 92.0 | - |
| | FI -4 | OLKILUOTO-2 | BWR | 860 | 890 | 2500 | TVO | ASEASTAL | 1975-8 | 1980-2 | 1982-7 | 93.0 | 94.0 | - |
| FRANCE | FR -54 | BELLEVILLE-1 | PWR | 1310 | 1363 | 3817 | EDF | FRAM | 1980-5 | 1987-10 | 1988-6 | 69.0 | 77.0 | - |
| | FR -55 | BELLEVILLE-2 | PWR | 1310 | 1363 | 3817 | EDF | FRAM | 1980-8 | 1988-7 | 1989-1 | 70.0 | 78.0 | - |
| | FR -32 | BLAYAIS-1 | PWR | 910 | 951 | 2785 | EDF | FRAM | 1977-1 | 1981-6 | 1981-12 | 71.0 | 79.0 | - |
| | FR -33 | BLAYAIS-2 | PWR | 910 | 951 | 2785 | EDF | FRAM | 1977-1 | 1982-7 | 1983-2 | 75.0 | 82.0 | - |
| | FR -34 | BLAYAIS-3 | PWR | 910 | 951 | 2785 | EDF | FRAM | 1978-4 | 1983-8 | 1983-11 | 75.0 | 82.0 | - |
| | FR -35 | BLAYAIS-4 | PWR | 910 | 951 | 2785 | EDF | FRAM | 1978-4 | 1983-5 | 1983-10 | 74.0 | 82.0 | - |
| | FR -13 | BUGEY-2 | PWR | 910 | 945 | 2785 | EDF | FRAM | 1972-11 | 1978-5 | 1979-3 | 66.0 | 74.0 | - |
| | FR -14 | BUGEY-3 | PWR | 910 | 945 | 2785 | EDF | FRAM | 1973-9 | 1978-9 | 1979-3 | 66.0 | 76.0 | - |
| | FR -15 | BUGEY-4 | PWR | 880 | 917 | 2785 | EDF | FRAM | 1974-6 | 1979-3 | 1979-7 | 67.0 | 76.0 | - |

(1) Performance factors calculated only for period of full commercial operation, and only to 2005.

The column Non-Electrical Applications indicates the use of the facility to provide: DS desalination, DH district heating, PH process heating.

TABLE 10. REACTORS IN OPERATION, 31 DEC. 2006 — continued

| Country | Reactor | | Type | Capacity MW(e) | | | Operator | NSSS Supplier | Construction Start | Grid Connection | Commercial Operation | LF % to 2005 | UCF % to 2005 | Non-Electrical Applics |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Code | Name | | Net | Gross | Thermal | | | | | | | | |
| FRANCE | FR -16 | BUGEY-5 | PWR | 880 | 917 | 2785 | EDF | FRAM | 1974-7 | 1979-7 | 1980-1 | 68.0 | 78.0 | - |
| | FR -50 | CATTENOM-1 | PWR | 1300 | 1362 | 3817 | EDF | FRAM | 1979-10 | 1986-11 | 1987-4 | 67.0 | 72.0 | - |
| | FR -53 | CATTENOM-2 | PWR | 1300 | 1362 | 3817 | EDF | FRAM | 1980-7 | 1987-9 | 1988-2 | 72.0 | 79.0 | - |
| | FR -60 | CATTENOM-3 | PWR | 1300 | 1362 | 3817 | EDF | FRAM | 1982-6 | 1990-7 | 1991-2 | 74.0 | 81.0 | - |
| | FR -65 | CATTENOM-4 | PWR | 1300 | 1362 | 3817 | EDF | FRAM | 1983-9 | 1991-5 | 1992-1 | 78.0 | 85.0 | - |
| | FR -40 | CHINON-B-1 | PWR | 905 | 954 | 2785 | EDF | FRAM | 1977-3 | 1982-11 | 1984-2 | 74.0 | 80.0 | - |
| | FR -41 | CHINON-B-2 | PWR | 905 | 954 | 2785 | EDF | FRAM | 1977-3 | 1983-11 | 1984-8 | 73.0 | 80.0 | - |
| | FR -56 | CHINON-B-3 | PWR | 905 | 954 | 2785 | EDF | FRAM | 1980-10 | 1986-10 | 1987-3 | 73.0 | 81.0 | - |
| | FR -57 | CHINON-B-4 | PWR | 905 | 954 | 2785 | EDF | FRAM | 1981-2 | 1987-11 | 1988-4 | 74.0 | 82.0 | - |
| | FR -62 | CHOOZ-B-1 | PWR | 1500 | 1560 | 4270 | EDF | FRAM | 1984-1 | 1996-8 | 2000-5 | 77.0 | 82.0 | - |
| | FR -70 | CHOOZ-B-2 | PWR | 1500 | 1560 | 4270 | EDF | FRAM | 1985-12 | 1997-4 | 2000-9 | 77.0 | 84.0 | - |
| | FR -72 | CIVAUX-1 | PWR | 1495 | 1561 | 4270 | EDF | FRAM | 1988-10 | 1997-12 | 2002-1 | 79.0 | 82.0 | - |
| | FR -73 | CIVAUX-2 | PWR | 1495 | 1561 | 4270 | EDF | FRAM | 1991-4 | 1999-12 | 2002-4 | 78.0 | 83.0 | - |
| | FR -42 | CRUAS-1 | PWR | 915 | 956 | 2785 | EDF | FRAM | 1978-8 | 1983-4 | 1984-4 | 71.0 | 82.0 | - |
| | FR -43 | CRUAS-2 | PWR | 915 | 956 | 2785 | EDF | FRAM | 1978-11 | 1984-9 | 1985-4 | 73.0 | 82.0 | - |
| | FR -44 | CRUAS-3 | PWR | 915 | 956 | 2785 | EDF | FRAM | 1979-4 | 1984-5 | 1984-9 | 72.0 | 83.0 | - |
| | FR -45 | CRUAS-4 | PWR | 915 | 956 | 2785 | EDF | FRAM | 1979-10 | 1984-10 | 1985-2 | 71.0 | 81.0 | - |
| | FR -22 | DAMPIERRE-1 | PWR | 890 | 937 | 2785 | EDF | FRAM | 1975-2 | 1980-3 | 1980-9 | 70.0 | 77.0 | - |
| | FR -29 | DAMPIERRE-2 | PWR | 890 | 937 | 2785 | EDF | FRAM | 1975-4 | 1980-12 | 1981-2 | 68.0 | 78.0 | - |
| | FR -30 | DAMPIERRE-3 | PWR | 890 | 937 | 2785 | EDF | FRAM | 1975-9 | 1981-1 | 1981-5 | 72.0 | 79.0 | - |
| | FR -31 | DAMPIERRE-4 | PWR | 890 | 937 | 2785 | EDF | FRAM | 1975-12 | 1981-8 | 1981-11 | 70.0 | 78.0 | - |

TABLE 10. REACTORS IN OPERATION, 31 DEC. 2006 — continued

| Country | Reactor | | Type | Capacity MW(e) | | | Operator | NSSS Supplier | Construction Start | Grid Connection | Commercial Operation | LF % to 2005 | UCF % to 2005 | Non-Electrical Applics |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Code | Name | | Net | Gross | Thermal | | | | | | | | |
| FRANCE | FR -11 | FESSENHEIM-1 | PWR | 880 | 920 | 2660 | EDF | FRAM | 1971-9 | 1977-4 | 1978-1 | 67.0 | 74.0 | - |
| | FR -12 | FESSENHEIM-2 | PWR | 880 | 920 | 2660 | EDF | FRAM | 1972-2 | 1977-10 | 1978-4 | 70.0 | 77.0 | - |
| | FR -46 | FLAMANVILLE-1 | PWR | 1330 | 1382 | 3817 | EDF | FRAM | 1979-12 | 1985-12 | 1986-12 | 69.0 | 76.0 | - |
| | FR -47 | FLAMANVILLE-2 | PWR | 1330 | 1382 | 3817 | EDF | FRAM | 1980-5 | 1986-7 | 1987-3 | 70.0 | 78.0 | - |
| | FR -61 | GOLFECH-1 | PWR | 1310 | 1363 | 3817 | EDF | FRAM | 1982-11 | 1990-6 | 1991-2 | 74.0 | 84.0 | - |
| | FR -68 | GOLFECH-2 | PWR | 1310 | 1363 | 3817 | EDF | FRAM | 1984-10 | 1993-6 | 1994-3 | 74.0 | 85.0 | - |
| | FR -20 | GRAVELINES-1 | PWR | 910 | 951 | 2785 | EDF | FRAM | 1975-2 | 1980-3 | 1980-11 | 69.0 | 77.0 | - |
| | FR -21 | GRAVELINES-2 | PWR | 910 | 951 | 2785 | EDF | FRAM | 1975-3 | 1980-8 | 1980-12 | 73.0 | 81.0 | - |
| | FR -27 | GRAVELINES-3 | PWR | 910 | 951 | 2785 | EDF | FRAM | 1975-12 | 1980-12 | 1981-6 | 74.0 | 81.0 | - |
| | FR -28 | GRAVELINES-4 | PWR | 910 | 951 | 2785 | EDF | FRAM | 1976-4 | 1981-6 | 1981-10 | 74.0 | 80.0 | - |
| | FR -51 | GRAVELINES-5 | PWR | 910 | 951 | 2785 | EDF | FRAM | 1979-10 | 1984-8 | 1985-1 | 74.0 | 82.0 | - |
| | FR -52 | GRAVELINES-6 | PWR | 910 | 951 | 2785 | EDF | FRAM | 1979-10 | 1985-8 | 1985-10 | 76.0 | 82.0 | - |
| | FR -58 | NOGENT-1 | PWR | 1310 | 1363 | 3817 | EDF | FRAM | 1981-5 | 1987-10 | 1988-2 | 69.0 | 77.0 | - |
| | FR -59 | NOGENT-2 | PWR | 1310 | 1363 | 3817 | EDF | FRAM | 1982-1 | 1988-12 | 1989-5 | 74.0 | 83.0 | - |
| | FR -36 | PALUEL-1 | PWR | 1330 | 1382 | 3817 | EDF | FRAM | 1977-8 | 1984-6 | 1985-12 | 69.0 | 77.0 | - |
| | FR -37 | PALUEL-2 | PWR | 1330 | 1382 | 3817 | EDF | FRAM | 1978-1 | 1984-9 | 1985-12 | 67.0 | 75.0 | - |
| | FR -38 | PALUEL-3 | PWR | 1330 | 1382 | 3817 | EDF | FRAM | 1979-2 | 1985-9 | 1986-2 | 69.0 | 76.0 | - |
| | FR -39 | PALUEL-4 | PWR | 1330 | 1382 | 3817 | EDF | FRAM | 1980-2 | 1986-4 | 1986-6 | 70.0 | 78.0 | - |
| | FR -63 | PENLY-1 | PWR | 1330 | 1382 | 3817 | EDF | FRAM | 1982-9 | 1990-5 | 1990-12 | 75.0 | 82.0 | - |
| | FR -64 | PENLY-2 | PWR | 1330 | 1382 | 3817 | EDF | FRAM | 1984-8 | 1992-2 | 1992-11 | 76.0 | 84.0 | - |
| | FR -10 | PHENIX | FBR | 130 | 250 | 591 | CEA/EDF | CNCLNEY | 1968-11 | 1973-12 | 1974-2 | 44.0 | 62.0 | - |

TABLE 10. REACTORS IN OPERATION, 31 DEC. 2006 — continued

| Country | Reactor | | Type | Capacity MW(e) | | | Operator | NSSS Supplier | Construction Start | Grid Connection | Commercial Operation | LF % to 2005 | UCF % to 2005 | Non-Electrical Applics |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Code | Name | | Net | Gross | Thermal | | | | | | | | |
| FRANCE | FR -48 | ST. ALBAN-1 | PWR | 1335 | 1381 | 3817 | EDF | FRAM | 1979-1 | 1985-8 | 1986-5 | 67.0 | 77.0 | - |
| | FR -49 | ST. ALBAN-2 | PWR | 1335 | 1381 | 3817 | EDF | FRAM | 1979-7 | 1986-7 | 1987-3 | 64.0 | 76.0 | - |
| | FR -17 | ST. LAURENT-B-1 | PWR | 915 | 956 | 2785 | EDF | FRAM | 1976-5 | 1981-1 | 1983-8 | 71.0 | 77.0 | - |
| | FR -23 | ST. LAURENT-B-2 | PWR | 915 | 956 | 2785 | EDF | FRAM | 1976-7 | 1981-6 | 1983-8 | 70.0 | 78.0 | - |
| | FR -18 | TRICASTIN-1 | PWR | 915 | 955 | 2785 | EDF | FRAM | 1974-11 | 1980-5 | 1980-12 | 72.0 | 79.0 | - |
| | FR -19 | TRICASTIN-2 | PWR | 915 | 955 | 2785 | EDF | FRAM | 1974-12 | 1980-8 | 1980-12 | 72.0 | 79.0 | - |
| | FR -25 | TRICASTIN-3 | PWR | 915 | 955 | 2785 | EDF | FRAM | 1975-4 | 1981-2 | 1981-5 | 75.0 | 81.0 | - |
| | FR -26 | TRICASTIN-4 | PWR | 915 | 955 | 2785 | EDF | FRAM | 1975-5 | 1981-6 | 1981-11 | 73.0 | 81.0 | - |
| GERMANY | DE -12 | BIBLIS-A (KWB A) | PWR | 1167 | 1225 | 3517 | RWE | KWU | 1970-1 | 1974-8 | 1975-2 | 67.0 | 75.0 | - |
| | DE -18 | BIBLIS-B (KWB B) | PWR | 1240 | 1300 | 3733 | RWE | KWU | 1972-2 | 1976-4 | 1977-1 | 68.0 | 80.0 | - |
| | DE -32 | BROKDORF (KBR) | PWR | 1370 | 1440 | 3765 | EON | KWU | 1976-1 | 1986-10 | 1986-12 | 87.0 | 90.0 | - |
| | DE -13 | BRUNSBUETTEL (KKB) | BWR | 771 | 806 | 2292 | KKB | KWU | 1970-4 | 1976-7 | 1977-2 | 57.0 | 69.0 | - |
| | DE -33 | EMSLAND (KKE) | PWR | 1329 | 1400 | 3850 | KLE | SIEM,KWU | 1982-8 | 1988-4 | 1988-6 | 93.0 | 93.0 | - |
| | DE -23 | GRAFENRHEINFELD (KKG) | PWR | 1275 | 1345 | 3765 | EON | KWU | 1975-1 | 1981-12 | 1982-6 | 86.0 | 87.0 | - |
| | DE -27 | GROHNDE (KWG) | PWR | 1360 | 1430 | 3900 | KWG | KWU | 1976-6 | 1984-9 | 1985-2 | 90.0 | 92.0 | - |
| | DE -26 | GUNDREMMINGEN-B (GUN-B) | BWR | 1284 | 1344 | 3840 | RWE | KWU | 1976-7 | 1984-3 | 1984-7 | 82.0 | 88.0 | - |
| | DE -28 | GUNDREMMINGEN-C (GUN-C) | BWR | 1288 | 1344 | 3840 | KGG | KWU | 1976-7 | 1984-11 | 1985-1 | 79.0 | 87.0 | - |
| | DE -16 | ISAR-1 (KKI 1) | BWR | 878 | 912 | 2575 | EON | KWU | 1972-5 | 1977-12 | 1979-3 | 78.0 | 84.0 | - |
| | DE -31 | ISAR-2 (KKI 2) | PWR | 1400 | 1475 | 3950 | EON | KWU | 1982-9 | 1988-1 | 1988-4 | 88.0 | 92.0 | - |
| | DE -20 | KRUEMMEL (KKK) | BWR | 1260 | 1316 | 3690 | KKK | KWU | 1974-4 | 1983-9 | 1984-3 | 76.0 | 80.0 | - |
| | DE -15 | NECKARWESTHEIM-1 (GKN 1) | PWR | 785 | 840 | 2497 | EnKK | KWU | 1972-2 | 1976-6 | 1976-12 | 80.0 | 87.0 | - |

TABLE 10. REACTORS IN OPERATION, 31 DEC. 2006 — continued

| Country | Reactor | | Type | Capacity MW(e) | | | Operator | NSSS Supplier | Construction Start | Grid Connection | Commercial Operation | LF % to 2005 | UCF % to 2005 | Non-Electrical Applics |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Code | Name | | Net | Gross | Thermal | | | | | | | | |
| GERMANY | DE -44 | NECKARWESTHEIM-2 (GKN 2) | PWR | 1305 | 1395 | 3850 | EnKK | SIEM,KWU | 1982-11 | 1989-1 | 1989-4 | 92.0 | 93.0 | - |
| | DE -14 | PHILIPPSBURG-1 (KKP 1) | BWR | 890 | 926 | 2575 | EnKK | KWU | 1970-10 | 1979-5 | 1980-3 | 76.0 | 82.0 | - |
| | DE -24 | PHILIPPSBURG-2 (KKP 2) | PWR | 1392 | 1458 | 3950 | EnKK | KWU | 1977-7 | 1984-12 | 1985-4 | 88.0 | 90.0 | - |
| | DE -17 | UNTERWESER (KKU) | PWR | 1345 | 1410 | 3900 | EON | KWU | 1972-7 | 1978-9 | 1979-9 | 79.0 | 84.0 | - |
| HUNGARY | HU -1 | PAKS-1 | PWR | 437 | 467 | 1375 | PAKS RT. | AEE | 1974-8 | 1982-12 | 1983-8 | 86.0 | 85.0 | - |
| | HU -2 | PAKS-2 | PWR | 441 | 468 | 1375 | PAKS RT. | AEE | 1974-8 | 1984-9 | 1984-11 | 79.0 | 78.0 | DH |
| | HU -3 | PAKS-3 | PWR | 433 | 460 | 1375 | PAKS RT. | AEE | 1979-10 | 1986-9 | 1986-12 | 87.0 | 86.0 | DH |
| | HU -4 | PAKS-4 | PWR | 444 | 471 | 1375 | PAKS RT. | AEE | 1979-10 | 1987-8 | 1987-11 | 89.0 | 87.0 | DH |
| INDIA | IN -13 | KAIGA-1 | PHWR | 202 | 220 | 801 | NPCIL | NPCIL | 1989-9 | 2000-10 | 2000-11 | 75.0 | 90.0 | - |
| | IN -14 | KAIGA-2 | PHWR | 202 | 220 | 801 | NPCIL | NPCIL | 1989-12 | 1999-12 | 2000-3 | 76.0 | 88.0 | - |
| | IN -9 | KAKRAPAR-1 | PHWR | 202 | 220 | 801 | NPCIL | NPCIL | 1984-12 | 1992-11 | 1993-5 | 69.0 | 77.0 | - |
| | IN -10 | KAKRAPAR-2 | PHWR | 202 | 220 | 801 | NPCIL | NPCIL | 1985-4 | 1995-3 | 1995-9 | 80.0 | 88.0 | - |
| | IN -5 | MADRAS-1 | PHWR | 202 | 220 | 801 | NPCIL | NPCIL | 1971-1 | 1983-7 | 1984-1 | 49.0 | 58.0 | DS |
| | IN -6 | MADRAS-2 | PHWR | 202 | 220 | 801 | NPCIL | NPCIL | 1972-10 | 1985-9 | 1986-3 | 55.0 | 62.0 | DS |
| | IN -7 | NARORA-1 | PHWR | 202 | 220 | 801 | NPCIL | NPCIL | 1976-12 | 1989-7 | 1991-1 | 56.0 | 64.0 | - |
| | IN -8 | NARORA-2 | PHWR | 202 | 220 | 801 | NPCIL | NPCIL | 1977-11 | 1992-1 | 1992-7 | 68.0 | 76.0 | - |
| | | | | | | | | | | | | | | - |
| | IN -3 | RAJASTHAN-1 | PHWR | 90 | 100 | 693 | NPCIL | AECL | 1965-8 | 1972-11 | 1973-12 | 21.0 | 28.0 | PH |
| | IN -4 | RAJASTHAN-2 | PHWR | 187 | 200 | 693 | NPCIL | AECL/DAE | 1968-4 | 1980-11 | 1981-4 | 53.0 | 60.0 | PH |
| | IN -11 | RAJASTHAN-3 | PHWR | 202 | 220 | 801 | NPCIL | NPCIL | 1990-2 | 2000-3 | 2000-6 | 77.0 | 88.0 | PH |
| | IN -12 | RAJASTHAN-4 | PHWR | 202 | 220 | 801 | NPCIL | NPCIL | 1990-10 | 2000-11 | 2000-12 | 77.0 | 91.0 | PH |
| | IN -1 | TARAPUR-1 | BWR | 150 | 160 | 530 | NPCIL | GE | 1964-10 | 1969-4 | 1969-10 | 55.0 | 76.0 | - |

The column Non-Electrical Applications indicates the use of the facility to provide: DS desalination, DH district heating, PH process heating.

TABLE 10. REACTORS IN OPERATION, 31 DEC. 2006 — continued

| Country | Reactor | | Type | Capacity MW(e) | | | Operator | NSSS Supplier | Construction Start | Grid Connection | Commercial Operation | LF % to 2005 | UCF % to 2005 | Non-Electrical Applics |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Code | Name | | Net | Gross | Thermal | | | | | | | | |
| INDIA | IN -2 | TARAPUR-2 | BWR | 150 | 160 | 530 | NPCIL | GE | 1964-10 | 1969-5 | 1969-10 | 55.0 | 74.0 | - |
| | IN -23 | TARAPUR-3 | PHWR | 490 | 540 | 1730 | NPCIL | NPCIL | 2000-5 | 2006-6 | 2006-8 | 61.0 | 79.0 | - |
| | IN -24 | TARAPUR-4 | PHWR | 490 | 540 | 1730 | NPCIL | NPCIL | 2000-3 | 2005-6 | 2005-9 | 47.0 | 69.0 | - |
| JAPAN | JP -5 | FUKUSHIMA-DAIICHI-1 | BWR | 439 | 460 | 1380 | TEPCO | GE/GETSC | 1967-7 | 1970-11 | 1971-3 | 53.0 | 56.0 | - |
| | JP -9 | FUKUSHIMA-DAIICHI-2 | BWR | 760 | 784 | 2381 | TEPCO | GE/T | 1969-6 | 1973-12 | 1974-7 | 58.0 | 59.0 | - |
| | JP -10 | FUKUSHIMA-DAIICHI-3 | BWR | 760 | 784 | 2381 | TEPCO | TOSHIBA | 1970-12 | 1974-10 | 1976-3 | 64.0 | 64.0 | - |
| | JP -16 | FUKUSHIMA-DAIICHI-4 | BWR | 760 | 784 | 2381 | TEPCO | HITACHI | 1973-2 | 1978-2 | 1978-10 | 69.0 | 69.0 | - |
| | JP -17 | FUKUSHIMA-DAIICHI-5 | BWR | 760 | 784 | 2381 | TEPCO | TOSHIBA | 1972-5 | 1977-9 | 1978-4 | 70.0 | 71.0 | - |
| | JP -18 | FUKUSHIMA-DAIICHI-6 | BWR | 1067 | 1100 | 3293 | TEPCO | GE/T | 1973-10 | 1979-5 | 1979-10 | 69.0 | 70.0 | - |
| | JP -25 | FUKUSHIMA-DAINI-1 | BWR | 1067 | 1100 | 3293 | TEPCO | TOSHIBA | 1976-3 | 1981-7 | 1982-4 | 74.0 | 75.0 | - |
| | JP -26 | FUKUSHIMA-DAINI-2 | BWR | 1067 | 1100 | 3293 | TEPCO | HITACHI | 1979-5 | 1983-6 | 1984-2 | 73.0 | 74.0 | - |
| | JP -35 | FUKUSHIMA-DAINI-3 | BWR | 1067 | 1100 | 3293 | TEPCO | TOSHIBA | 1981-3 | 1984-12 | 1985-6 | 64.0 | 65.0 | - |
| | JP -38 | FUKUSHIMA-DAINI-4 | BWR | 1067 | 1100 | 3293 | TEPCO | HITACHI | 1981-5 | 1986-12 | 1987-8 | 71.0 | 72.0 | - |
| | JP -12 | GENKAI-1 | PWR | 529 | 559 | 1650 | KYUSHU | MHI | 1971-9 | 1975-2 | 1975-10 | 72.0 | 72.0 | - |
| | JP -27 | GENKAI-2 | PWR | 529 | 559 | 1650 | KYUSHU | MHI | 1977-2 | 1980-6 | 1981-3 | 82.0 | 81.0 | - |
| | JP -45 | GENKAI-3 | PWR | 1127 | 1180 | 3423 | KYUSHU | MHI | 1988-6 | 1993-6 | 1994-3 | 86.0 | 85.0 | DS |
| | JP -46 | GENKAI-4 | PWR | 1127 | 1180 | 3423 | KYUSHU | MHI | 1992-7 | 1996-11 | 1997-7 | 86.0 | 85.0 | DS |
| | JP -11 | HAMAOKA-1 | BWR | 515 | 540 | 1593 | CHUBU | TOSHIBA | 1971-6 | 1974-8 | 1976-3 | 51.0 | 51.0 | - |
| | JP -24 | HAMAOKA-2 | BWR | 806 | 840 | 2436 | CHUBU | TOSHIBA | 1974-6 | 1978-5 | 1978-11 | 64.0 | 64.0 | - |
| | JP -36 | HAMAOKA-3 | BWR | 1056 | 1100 | 3293 | CHUBU | TOSHIBA | 1983-4 | 1987-1 | 1987-8 | 76.0 | 77.0 | - |
| | JP -49 | HAMAOKA-4 | BWR | 1092 | 1137 | 3293 | CHUBU | TOSHIBA | 1989-10 | 1993-1 | 1993-9 | 80.0 | 81.0 | - |

The column Non Electrical Applications indicates the use of the facility to provide: DS desalination, DH district heating, PH process heating.

TABLE 10. REACTORS IN OPERATION, 31 DEC. 2006 — continued

| Country | Reactor | | Type | Capacity MW(e) | | | Operator | NSSS Supplier | Construction Start | Grid Connection | Commercial Operation | LF % to 2005 | UCF % to 2005 | Non-Electrical Applics |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Code | Name | | Net | Gross | Thermal | | | | | | | | |
| JAPAN | JP -60 | HAMAOKA-5 | BWR | 1325 | 1380 | 3926 | CHUBU | TOSHIBA | 2000-7 | 2004-4 | 2005-1 | 64.0 | 62.0 | - |
| | JP -58 | HIGASHI DORI 1 (TOHOKU) | BWR | 1067 | 1100 | 3293 | TOHOKU | TOSHIBA | 2000-11 | 2005-3 | 2005-12 | 99.0 | 100.0 | - |
| | JP -23 | IKATA-1 | PWR | 538 | 566 | 1650 | SHIKOKU | MHI | 1973-6 | 1977-2 | 1977-9 | 77.0 | 78.0 | DS |
| | JP -32 | IKATA-2 | PWR | 538 | 566 | 1650 | SHIKOKU | MHI | 1978-2 | 1981-8 | 1982-3 | 81.0 | 81.0 | DS |
| | JP -47 | IKATA-3 | PWR | 846 | 890 | 2660 | SHIKOKU | MHI | 1986-11 | 1994-3 | 1994-12 | 87.0 | 85.0 | DS |
| | JP -33 | KASHIWAZAKI KARIWA-1 | BWR | 1067 | 1100 | 3293 | TEPCO | TOSHIBA | 1980-6 | 1985-2 | 1985-9 | 72.0 | 73.0 | - |
| | JP -39 | KASHIWAZAKI KARIWA-2 | BWR | 1067 | 1100 | 3293 | TEPCO | TOSHIBA | 1985-11 | 1990-2 | 1990-9 | 75.0 | 76.0 | - |
| | JP -52 | KASHIWAZAKI KARIWA-3 | BWR | 1067 | 1100 | 3293 | TEPCO | TOSHIBA | 1989-3 | 1992-12 | 1993-8 | 73.0 | 74.0 | - |
| | JP -53 | KASHIWAZAKI KARIWA-4 | BWR | 1067 | 1100 | 3293 | TEPCO | HITACHI | 1990-3 | 1993-12 | 1994-8 | 72.0 | 73.0 | - |
| | JP -40 | KASHIWAZAKI KARIWA-5 | BWR | 1067 | 1100 | 3293 | TEPCO | HITACHI | 1985-6 | 1989-9 | 1990-4 | 79.0 | 79.0 | - |
| | JP -55 | KASHIWAZAKI KARIWA-6 | BWR | 1315 | 1356 | 3926 | TEPCO | TOSHIBA | 1992-11 | 1996-1 | 1996-11 | 84.0 | 84.0 | - |
| | JP -56 | KASHIWAZAKI KARIWA-7 | BWR | 1315 | 1356 | 3926 | TEPCO | HITACHI | 1993-7 | 1996-12 | 1997-7 | 78.0 | 78.0 | - |
| | JP -4 | MIHAMA-1 | PWR | 320 | 340 | 1031 | KEPCO | WH | 1967-2 | 1970-8 | 1970-11 | 51.0 | 55.0 | - |
| | JP -6 | MIHAMA-2 | PWR | 470 | 500 | 1456 | KEPCO | WH | 1968-5 | 1972-4 | 1972-7 | 62.0 | 62.0 | - |
| | JP -14 | MIHAMA-3 | PWR | 780 | 826 | 2440 | KEPCO | MHI | 1972-8 | 1976-2 | 1976-12 | 69.0 | 69.0 | - |
| | JP -15 | OHI-1 | PWR | 1120 | 1175 | 3423 | KEPCO | WH | 1972-10 | 1977-12 | 1979-3 | 66.0 | 66.0 | DS |
| | JP -19 | OHI-2 | PWR | 1120 | 1175 | 3423 | KEPCO | WH | 1972-12 | 1978-10 | 1979-12 | 72.0 | 72.0 | DS |
| | JP -50 | OHI-3 | PWR | 1127 | 1180 | 3423 | KEPCO | MHI | 1987-10 | 1991-6 | 1991-12 | 84.0 | 83.0 | - |
| | JP -51 | OHI-4 | PWR | 1127 | 1180 | 3423 | KEPCO | MHI | 1988-6 | 1992-6 | 1993-2 | 86.0 | 85.0 | - |
| | JP -22 | ONAGAWA-1 | BWR | 498 | 524 | 1593 | TOHOKU | TOSHIBA | 1980-7 | 1983-11 | 1984-6 | 70.0 | 72.0 | - |
| | JP -54 | ONAGAWA-2 | BWR | 796 | 825 | 2436 | TOHOKU | TOSHIBA | 1991-4 | 1994-12 | 1995-7 | 73.0 | 77.0 | - |

The column Non-Electrical Applications indicates the use of the facility to provide: DS desalination, DH district heating, PH process heating.

TABLE 10. REACTORS IN OPERATION, 31 DEC. 2006 — continued

| Country | Reactor Code | Reactor Name | Type | Capacity MW(e) Net | Gross | Thermal | Operator | NSSS Supplier | Construction Start | Grid Connection | Commercial Operation | LF % to 2005 | UCF % to 2005 | Non-Electrical Applics |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| JAPAN | JP -57 | ONAGAWA-3 | BWR | 796 | 825 | 2436 | TOHOKU | TOSHIBA | 1998-1 | 2001-5 | 2002-1 | 73.0 | 73.0 | - |
| | JP -28 | SENDAI-1 | PWR | 846 | 890 | 2660 | KYUSHU | MHI | 1979-12 | 1983-9 | 1984-7 | 83.0 | 82.0 | - |
| | JP -37 | SENDAI-2 | PWR | 846 | 890 | 2660 | KYUSHU | MHI | 1981-10 | 1985-4 | 1985-11 | 84.0 | 83.0 | - |
| | JP -48 | SHIKA-1 | BWR | 505 | 540 | 1593 | HOKURIKU | HITACHI | 1989-7 | 1993-1 | 1993-7 | 79.0 | 80.0 | - |
| | JP -59 | SHIKA-2 | BWR | 1304 | 1358 | 3926 | HOKURIKU | HITACHI | 2001-8 | 2005-7 | 2006-3 | 34.0 | 34.0 | - |
| | JP -7 | SHIMANE-1 | BWR | 439 | 460 | 1380 | CHUGOKU | HITACHI | 1970-7 | 1973-12 | 1974-3 | 73.0 | 73.0 | - |
| | JP -41 | SHIMANE-2 | BWR | 789 | 820 | 2436 | CHUGOKU | HITACHI | 1985-2 | 1988-7 | 1989-2 | 82.0 | 82.0 | - |
| | JP -8 | TAKAHAMA-1 | PWR | 780 | 826 | 2440 | KEPCO | WH/MHI | 1970-4 | 1974-3 | 1974-11 | 68.0 | 67.0 | - |
| | JP -13 | TAKAHAMA-2 | PWR | 780 | 826 | 2440 | KEPCO | MHI | 1971-3 | 1975-1 | 1975-11 | 68.0 | 68.0 | - |
| | JP -29 | TAKAHAMA-3 | PWR | 830 | 870 | 2660 | KEPCO | MHI | 1980-12 | 1984-5 | 1985-1 | 84.0 | 83.0 | DS |
| | JP -30 | TAKAHAMA-4 | PWR | 830 | 870 | 2660 | KEPCO | MHI | 1981-3 | 1984-11 | 1985-6 | 86.0 | 84.0 | DS |
| | JP -21 | TOKAI-2 | BWR | 1060 | 1100 | 3293 | JAPC | GE | 1973-10 | 1978-3 | 1978-11 | 73.0 | 73.0 | - |
| | JP -43 | TOMARI-1 | PWR | 550 | 579 | 1650 | HEPCO | MHI | 1985-7 | 1988-12 | 1989-6 | 86.0 | 85.0 | - |
| | JP -44 | TOMARI-2 | PWR | 550 | 579 | 1650 | HEPCO | MHI | 1986-5 | 1990-8 | 1991-4 | 84.0 | 83.0 | - |
| | JP -3 | TSURUGA-1 | BWR | 340 | 357 | 1070 | JAPC | GE | 1966-11 | 1969-11 | 1970-3 | 68.0 | 72.0 | - |
| | JP -34 | TSURUGA-2 | PWR | 1110 | 1160 | 3411 | JAPC | MHI | 1982-11 | 1986-6 | 1987-2 | 81.0 | 81.0 | - |
| KOREA RP | KR -1 | KORI-1 | PWR | 573 | 603 | 1723 | KHNP | WH | 1972-8 | 1977-6 | 1978-4 | 75.0 | 78.0 | - |
| | KR -2 | KORI-2 | PWR | 637 | 675 | 1876 | KHNP | WH | 1977-12 | 1983-4 | 1983-7 | 87.0 | 85.0 | - |
| | KR -5 | KORI-3 | PWR | 963 | 1004 | 2775 | KHNP | WH | 1979-10 | 1985-1 | 1985-9 | 88.0 | 84.0 | - |
| | KR -6 | KORI-4 | PWR | 967 | 1006 | 2775 | KHNP | WH | 1980-4 | 1985-11 | 1986-4 | 90.0 | 86.0 | - |
| | KR -9 | ULCHIN-1 | PWR | 939 | 985 | 2775 | KHNP | FRAM | 1983-1 | 1988-4 | 1988-9 | 85.0 | 85.0 | - |

The column Non-Electrical Applications indicates the use of the facility to provide: DS desalination, DH district heating, PH process heating.

TABLE 10. REACTORS IN OPERATION, 31 DEC. 2006 — continued

| Country | Reactor | | Type | Capacity MW(e) | | | Operator | NSSS Supplier | Construction Start | Grid Connection | Commercial Operation | LF % to 2005 | UCF % to 2005 | Non-Electrical Applics |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Code | Name | | Net | Gross | Thermal | | | | | | | | |
| KOREA RP | KR -10 | ULCHIN-2 | PWR | 937 | 984 | 2775 | KHNP | FRAM | 1983-7 | 1989-4 | 1989-9 | 88.0 | 86.0 | - |
| | KR -13 | ULCHIN-3 | PWR | 994 | 1047 | 2825 | KHNP | DHICKOPC | 1993-7 | 1998-1 | 1998-8 | 90.0 | 90.0 | - |
| | KR -14 | ULCHIN-4 | PWR | 993 | 1045 | 2825 | KHNP | DHICKOPC | 1993-11 | 1998-12 | 1999-12 | 92.0 | 89.0 | - |
| | KR -19 | ULCHIN-5 | PWR | 994 | 1048 | 2825 | KHNP | DHICKOPC | 1999-10 | 2003-12 | 2004-7 | 90.0 | 89.0 | - |
| | KR -20 | ULCHIN-6 | PWR | 991 | 1048 | 2825 | KHNP | DHICKOPC | 2000-9 | 2005-1 | 2005-6 | 91.0 | 90.0 | - |
| | KR -3 | WOLSONG-1 | PHWR | 578 | 622 | 2064 | KHNP | AECL | 1977-10 | 1982-12 | 1983-4 | 86.0 | 86.0 | - |
| | KR -4 | WOLSONG-2 | PHWR | 684 | 730 | 2061 | KHNP | AECL/DHI | 1992-9 | 1997-4 | 1997-7 | 94.0 | 91.0 | - |
| | KR -15 | WOLSONG-3 | PHWR | 682 | 729 | 2061 | KHNP | AECL/DHI | 1994-3 | 1998-3 | 1998-7 | 94.0 | 92.0 | - |
| | KR -16 | WOLSONG-4 | PHWR | 685 | 730 | 2061 | KHNP | AECL/DHI | 1994-7 | 1999-5 | 1999-10 | 97.0 | 93.0 | - |
| | KR -7 | YONGGWANG-1 | PWR | 945 | 985 | 2775 | KHNP | WH | 1981-6 | 1986-3 | 1986-8 | 89.0 | 87.0 | - |
| | KR -8 | YONGGWANG-2 | PWR | 939 | 978 | 2775 | KHNP | WH | 1981-12 | 1986-11 | 1987-6 | 87.0 | 85.0 | - |
| | KR -11 | YONGGWANG-3 | PWR | 985 | 1039 | 2825 | KHNP | DHICKAEC | 1989-12 | 1994-10 | 1995-3 | 91.0 | 89.0 | - |
| | KR -12 | YONGGWANG-4 | PWR | 988 | 1039 | 2825 | KHNP | DHICKAEC | 1990-5 | 1995-7 | 1996-1 | 92.0 | 89.0 | - |
| | KR -17 | YONGGWANG-5 | PWR | 987 | 1046 | 2825 | KHNP | DHICKOPC | 1997-6 | 2001-12 | 2002-5 | 84.0 | 82.0 | - |
| | KR -18 | YONGGWANG-6 | PWR | 993 | 1050 | 2825 | KHNP | DHICKOPC | 1997-11 | 2002-9 | 2002-12 | 86.0 | 85.0 | - |
| LITHUANIA | LT -47 | IGNALINA-2 | LWGR | 1185 | 1300 | 4800 | INPP | MAEP | 1978-1 | 1987-8 | 1987-8 | 60.0 | 73.0 | - |
| MEXICO | MX -1 | LAGUNA VERDE-1 | BWR | 680 | 682 | 2027 | CFE | GE | 1976-10 | 1989-4 | 1990-7 | 77.0 | 82.0 | - |
| | MX -2 | LAGUNA VERDE-2 | BWR | 680 | 682 | 2027 | CFE | GE | 1977-6 | 1994-11 | 1995-4 | 79.0 | 83.0 | - |
| NETHERLANDS | NL -2 | BORSSELE | PWR | 482 | 515 | 1366 | EPZ | KWU/STOR | 1969-7 | 1973-7 | 1973-10 | 82.0 | 87.0 | - |
| PAKISTAN | PK -2 | CHASNUPP 1 | PWR | 300 | 325 | 999 | PAEC | CNNC | 1993-8 | 2000-6 | 2000-9 | 70.0 | 72.0 | - |

TABLE 10. REACTORS IN OPERATION, 31 DEC. 2006 — continued

| Country | Reactor | | Type | Capacity MW(e) | | | Operator | NSSS Supplier | Construction Start | Grid Connection | Commercial Operation | LF % to 2005 | UCF % to 2005 | Non-Electrical Applics |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Code | Name | | Net | Gross | Thermal | | | | | | | | |
| PAKISTAN | PK -1 | KANUPP | PHWR | 125 | 137 | 433 | PAEC | CGE | 1966-8 | 1971-10 | 1972-12 | 26.0 | 43.0 | DS |
| ROMANIA | RO -1 | CERNAVODA-1 | PHWR | 655 | 706 | 2180 | SNN | AECL | 1982-7 | 1996-7 | 1996-12 | 86.0 | 87.0 | DH |
| RUSSIA | RU -96 | BALAKOVO-1 | PWR | 950 | 1000 | 3000 | REA | FAEA | 1980-12 | 1985-12 | 1986-5 | 62.0 | 68.0 | DH,PH |
| | RU -97 | BALAKOVO-2 | PWR | 950 | 1000 | 3000 | REA | FAEA | 1981-8 | 1987-10 | 1988-1 | 61.0 | 67.0 | DH,PH |
| | RU -98 | BALAKOVO-3 | PWR | 950 | 1000 | 3000 | REA | FAEA | 1982-11 | 1988-12 | 1989-4 | 66.0 | 73.0 | DH,PH |
| | RU -99 | BALAKOVO-4 | PWR | 950 | 1000 | 3200 | REA | FAEA | 1984-4 | 1993-4 | 1993-12 | 71.0 | 78.0 | DH,PH |
| | RU -21 | BELOYARSKY-3(BN-600) | FBR | 560 | 600 | 1470 | REA | FAEA | 1969-1 | 1980-4 | 1981-11 | 74.0 | 75.0 | DH,PH |
| | RU -141 | BILIBINO-1 | LWGR | 11 | 12 | 62 | REA | FAEA | 1970-1 | 1974-1 | 1974-4 | 58.0 | 80.0 | DH |
| | RU -142 | BILIBINO-2 | LWGR | 11 | 12 | 62 | REA | FAEA | 1970-1 | 1974-12 | 1975-2 | 57.0 | 81.0 | DH |
| | RU -143 | BILIBINO-3 | LWGR | 11 | 12 | 62 | REA | FAEA | 1970-1 | 1975-12 | 1976-2 | 59.0 | 81.0 | DH |
| | RU -144 | BILIBINO-4 | LWGR | 11 | 12 | 62 | REA | FAEA | 1970-1 | 1976-12 | 1977-1 | 58.0 | 78.0 | DH |
| | RU -30 | KALININ-1 | PWR | 950 | 1000 | 3000 | REA | FAEA | 1977-2 | 1984-5 | 1985-6 | 71.0 | 71.0 | DH,PH |
| | RU -31 | KALININ-2 | PWR | 950 | 1000 | 3000 | REA | FAEA | 1982-2 | 1986-12 | 1987-3 | 71.0 | 73.0 | DH,PH |
| | RU -36 | KALININ-3 | PWR | 950 | 1000 | 3200 | REA | FAEA | 1985-10 | 2004-12 | 2005-11 | 77.0 | 77.0 | - |
| | RU -12 | KOLA-1 | PWR | 411 | 440 | 1375 | REA | FAEA | 1970-5 | 1973-6 | 1973-12 | 65.0 | 76.0 | DH,PH |
| | RU -13 | KOLA-2 | PWR | 411 | 440 | 1375 | REA | FAEA | 1973-1 | 1974-12 | 1975-2 | 65.0 | 76.0 | DH,PH |
| | RU -32 | KOLA-3 | PWR | 411 | 440 | 1375 | REA | FAEA | 1977-4 | 1981-3 | 1982-12 | 72.0 | 82.0 | DH,PH |
| | RU -33 | KOLA-4 | PWR | 411 | 440 | 1375 | REA | FAEA | 1976-8 | 1984-10 | 1984-12 | 71.0 | 81.0 | DH,PH |
| | RU -17 | KURSK-1 | LWGR | 925 | 1000 | 3200 | REA | FAEA | 1972-6 | 1976-12 | 1977-10 | 57.0 | 60.0 | DH,PH |
| | RU -22 | KURSK-2 | LWGR | 925 | 1000 | 3200 | REA | FAEA | 1973-1 | 1979-1 | 1979-8 | 60.0 | 63.0 | DH,PH |

The column Non-Electrical Applications indicates the use of the facility to provide: DS desalination, DH district heating, PH process heating.

TABLE 10. REACTORS IN OPERATION, 31 DEC. 2006 — continued

| Country | Reactor | | Type | Capacity MW(e) | | | Operator | NSSS Supplier | Construction Start | Grid Connection | Commercial Operation | LF % to 2005 | UCF % to 2005 | Non-Electrical Applics |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Code | Name | | Net | Gross | Thermal | | | | | | | | |
| RUSSIA | RU -38 | KURSK-3 | LWGR | 925 | 1000 | 3200 | REA | FAEA | 1978-4 | 1983-10 | 1984-3 | 71.0 | 73.0 | DH,PH |
| | RU -39 | KURSK-4 | LWGR | 925 | 1000 | 3200 | REA | FAEA | 1981-5 | 1985-12 | 1986-2 | 75.0 | 76.0 | DH,PH |
| | RU -15 | LENINGRAD-1 | LWGR | 925 | 1000 | 3200 | REA | FAEA | 1970-3 | 1973-12 | 1974-11 | 68.0 | 69.0 | DH,PH |
| | RU -16 | LENINGRAD-2 | LWGR | 925 | 1000 | 3200 | REA | FAEA | 1970-6 | 1975-7 | 1976-2 | 68.0 | 69.0 | DH,PH |
| | RU -34 | LENINGRAD-3 | LWGR | 925 | 1000 | 3200 | REA | FAEA | 1973-12 | 1979-12 | 1980-6 | 69.0 | 71.0 | DH,PH |
| | RU -35 | LENINGRAD-4 | LWGR | 925 | 1000 | 3200 | REA | FAEA | 1975-2 | 1981-2 | 1981-8 | 71.0 | 73.0 | DH,PH |
| | RU -9 | NOVOVORONEZH-3 | PWR | 385 | 417 | 1375 | REA | FAEA | 1967-7 | 1971-12 | 1972-6 | 71.0 | 72.0 | DH,PH |
| | RU -11 | NOVOVORONEZH-4 | PWR | 385 | 417 | 1375 | REA | FAEA | 1967-7 | 1972-12 | 1973-3 | 77.0 | 79.0 | DH,PH |
| | RU -20 | NOVOVORONEZH-5 | PWR | 950 | 1000 | 3000 | REA | FAEA | 1974-3 | 1980-5 | 1981-2 | 61.0 | 62.0 | DH,PH |
| | RU -23 | SMOLENSK-1 | LWGR | 925 | 1000 | 3200 | REA | FAEA | 1975-10 | 1982-12 | 1983-9 | 70.0 | 73.0 | DH,PH |
| | RU -24 | SMOLENSK-2 | LWGR | 925 | 1000 | 3200 | REA | FAEA | 1976-6 | 1985-5 | 1985-7 | 73.0 | 76.0 | DH,PH |
| | RU -67 | SMOLENSK-3 | LWGR | 925 | 1000 | 3200 | REA | FAEA | 1984-5 | 1990-1 | 1990-10 | 78.0 | 81.0 | DH,PH |
| | RU -59 | VOLGODONSK-1 | PWR | 950 | 1000 | 3200 | REA | FAEA | 1981-9 | 2001-3 | 2001-12 | 86.0 | 85.0 | - |
| S.AFRICA | ZA -1 | KOEBERG-1 | PWR | 900 | 944 | 2785 | ESKOM | FRAM | 1976-7 | 1984-4 | 1984-7 | 67.0 | 75.0 | - |
| | ZA -2 | KOEBERG-2 | PWR | 900 | 944 | 2785 | ESKOM | FRAM | 1976-7 | 1985-7 | 1985-11 | 67.0 | 76.0 | - |
| SLOVAKIA | SK -3 | BOHUNICE-2 | PWR | 408 | 440 | 1375 | EBO | AEE | 1972-4 | 1980-3 | 1981-1 | 74.0 | 77.0 | - |
| | SK -13 | BOHUNICE-3 | PWR | 408 | 440 | 1375 | SE,plc | SKODA | 1976-12 | 1984-8 | 1985-2 | 75.0 | 80.0 | DH |
| | SK -14 | BOHUNICE-4 | PWR | 408 | 440 | 1375 | SE,plc | SKODA | 1976-12 | 1985-8 | 1985-12 | 77.0 | 82.0 | DH |
| | SK -6 | MOCHOVCE-1 | PWR | 405 | 440 | 1375 | SE,plc | SKODA | 1983-10 | 1998-7 | 1998-10 | 78.0 | 83.0 | - |
| | SK -7 | MOCHOVCE-2 | PWR | 405 | 440 | 1375 | SE,plc | SKODA | 1983-10 | 1999-12 | 2000-4 | 75.0 | 83.0 | - |

The column Non-Electrical Applications indicates the use of the facility to provide: DS desalination, DH district heating, PH process heating.

TABLE 10. REACTORS IN OPERATION, 31 DEC. 2006 — continued

| Country | Reactor | | Type | Capacity MW(e) | | | Operator | NSSS Supplier | Construction Start | Grid Connection | Commercial Operation | LF % to 2005 | UCF % to 2005 | Non-Electrical Applics |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Code | Name | | Net | Gross | Thermal | | | | | | | | |
| SLOVENIA | SI -1 | KRSKO | PWR | 666 | 730 | 1994 | NEK | WH | 1975-3 | 1981-10 | 1983-1 | 80.0 | 84.0 | - |
| SPAIN | ES -6 | ALMARAZ-1 | PWR | 944 | 977 | 2729 | CNAT | WH | 1973-7 | 1981-5 | 1983-9 | 84.0 | 86.0 | - |
| | ES -7 | ALMARAZ-2 | PWR | 956 | 980 | 2729 | CNAT | WH | 1973-7 | 1983-10 | 1984-7 | 87.0 | 87.0 | - |
| | ES -8 | ASCO-1 | PWR | 995 | 1033 | 2931 | ANAV | WH | 1974-5 | 1983-8 | 1984-12 | 84.0 | 85.0 | - |
| | ES -9 | ASCO-2 | PWR | 997 | 1027 | 2910 | ANAV | WH | 1975-3 | 1985-10 | 1986-3 | 86.0 | 88.0 | - |
| | ES -10 | COFRENTES | BWR | 1064 | 1092 | 3237 | ID | GE | 1975-9 | 1984-10 | 1985-3 | 87.0 | 88.0 | - |
| | ES -2 | SANTA MARIA DE GARONA | BWR | 446 | 466 | 1381 | NUCLENOR | GE | 1966-5 | 1971-3 | 1971-5 | 76.0 | 79.0 | - |
| | ES -11 | TRILLO-1 | PWR | 1003 | 1066 | 3010 | CNAT | KWU | 1979-8 | 1988-5 | 1988-8 | 85.0 | 86.0 | - |
| | ES -16 | VANDELLOS-2 | PWR | 1045 | 1087 | 2941 | ANAV | WH | 1980-12 | 1987-12 | 1988-3 | 84.0 | 84.0 | - |
| SWEDEN | SE -9 | FORSMARK-1 | BWR | 1016 | 1025 | 2928 | FKA | ABBATOM | 1973-6 | 1980-6 | 1980-12 | 80.0 | 86.0 | - |
| | SE -11 | FORSMARK-2 | BWR | 1000 | 1038 | 2928 | FKA | ABBATOM | 1975-1 | 1981-1 | 1981-7 | 80.0 | 86.0 | - |
| | SE -14 | FORSMARK-3 | BWR | 1190 | 1212 | 3300 | FKA | ABBATOM | 1979-1 | 1985-3 | 1985-8 | 85.0 | 90.0 | - |
| | SE -2 | OSKARSHAMN-1 | BWR | 467 | 487 | 1375 | OKG | ABBATOM | 1966-8 | 1971-8 | 1972-2 | 61.0 | 64.0 | - |
| | SE -3 | OSKARSHAMN-2 | BWR | 602 | 623 | 1800 | OKG | ABBATOM | 1969-9 | 1974-10 | 1975-1 | 75.0 | 79.0 | - |
| | SE -12 | OSKARSHAMN-3 | BWR | 1160 | 1197 | 3300 | OKG | ABBATOM | 1980-5 | 1985-3 | 1985-8 | 83.0 | 88.0 | - |
| | SE -4 | RINGHALS-1 | BWR | 843 | 860 | 2500 | RAB | ABBATOM | 1969-2 | 1974-10 | 1976-1 | 68.0 | 73.0 | - |
| | SE -5 | RINGHALS-2 | PWR | 867 | 917 | 2660 | RAB | WH | 1970-10 | 1974-8 | 1975-5 | 67.0 | 74.0 | - |
| | SE -7 | RINGHALS-3 | PWR | 1045 | 1095 | 3000 | RAB | WH | 1972-9 | 1980-9 | 1981-9 | 71.0 | 80.0 | - |
| | SE -10 | RINGHALS-4 | PWR | 907 | 960 | 2775 | RAB | WH | 1973-11 | 1982-6 | 1983-11 | 76.0 | 86.0 | - |
| SWITZERLAND | CH -1 | BEZNAU-1 | PWR | 365 | 380 | 1130 | NOK | WH | 1965-9 | 1969-7 | 1969-9 | 82.0 | 87.0 | DH |

The column Non-Electrical Applications indicates the use of the facility to provide: DS desalination, DH district heating, PH process heating.

TABLE 10. REACTORS IN OPERATION, 31 DEC. 2006 — continued

| Country | Reactor Code | Reactor Name | Type | Capacity MW(e) Net | Gross | Thermal | Operator | NSSS Supplier | Construction Start | Grid Connection | Commercial Operation | LF % to 2005 | UCF % to 2005 | Non-Electrical Applics |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SWITZERLAND | CH -3 | BEZNAU-2 | PWR | 365 | 380 | 1130 | NOK | WH | 1968-1 | 1971-10 | 1971-12 | 87.0 | 87.0 | DH |
| | CH -4 | GOESGEN | PWR | 970 | 1020 | 2900 | KKG | KWU | 1973-12 | 1979-2 | 1979-11 | 88.0 | 89.0 | DH |
| | CH -5 | LEIBSTADT | BWR | 1165 | 1220 | 3138 | KKL | GETSCO | 1974-1 | 1984-5 | 1984-12 | 80.0 | 86.0 | - |
| | CH -2 | MUEHLEBERG | BWR | 355 | 372 | 1097 | BKW | GETSCO | 1967-3 | 1971-7 | 1972-11 | 86.0 | 87.0 | - |
| UK | GB -18A | DUNGENESS-B1 | GCR | 545 | 615 | 1500 | BE | APC | 1965-10 | 1983-4 | 1985-4 | 42.0 | 45.0 | - |
| | GB -18B | DUNGENESS-B2 | GCR | 545 | 615 | 1500 | BE | APC | 1965-10 | 1985-12 | 1989-4 | 50.0 | 50.0 | - |
| | GB -19A | HARTLEPOOL-A1 | GCR | 595 | 655 | 1500 | BE | NPC | 1968-10 | 1983-8 | 1989-4 | 71.0 | 73.0 | - |
| | GB -19B | HARTLEPOOL-A2 | GCR | 595 | 655 | 1500 | BE | NPC | 1968-10 | 1984-10 | 1989-4 | 75.0 | 77.0 | - |
| | GB -20A | HEYSHAM-A1 | GCR | 585 | 625 | 1500 | BE | NPC | 1970-12 | 1983-7 | 1989-4 | 74.0 | 76.0 | - |
| | GB -20B | HEYSHAM-A2 | GCR | 575 | 625 | 1500 | BE | NPC | 1970-12 | 1984-10 | 1989-4 | 71.0 | 73.0 | - |
| | GB -22A | HEYSHAM-B1 | GCR | 615 | 680 | 1550 | BE | NPC | 1980-8 | 1988-7 | 1989-4 | 73.0 | 76.0 | - |
| | GB -22B | HEYSHAM-B2 | GCR | 615 | 680 | 1550 | BE | NPC | 1980-8 | 1988-11 | 1989-4 | 73.0 | 76.0 | - |
| | GB -16A | HINKLEY POINT-B1 | GCR | 620 | 655 | 1494 | BE | TNPG | 1967-9 | 1976-10 | 1978-10 | 77.0 | 77.0 | - |
| | GB -16B | HINKLEY POINT-B2 | GCR | 600 | 655 | 1494 | BE | TNPG | 1967-9 | 1976-2 | 1976-9 | 72.0 | 75.0 | - |
| | GB -17A | HUNTERSTON-B1 | GCR | 610 | 644 | 1496 | BE | TNPG | 1967-11 | 1976-2 | 1976-2 | 70.0 | 79.0 | - |
| | GB -17B | HUNTERSTON-B2 | GCR | 605 | 644 | 1496 | BE | TNPG | 1967-11 | 1977-3 | 1977-3 | 69.0 | 81.0 | - |
| | GB -11A | OLDBURY-A1 | GCR | 217 | 230 | 730 | BNFL | TNPG | 1962-5 | 1967-11 | 1967-12 | 77.0 | 87.0 | - |
| | GB -11B | OLDBURY-A2 | GCR | 217 | 230 | 660 | BNFL | TNPG | 1962-5 | 1968-4 | 1968-9 | 74.0 | 72.0 | - |
| | GB -24 | SIZEWELL-B | PWR | 1196 | 1250 | 3425 | BE | PPC | 1988-7 | 1995-2 | 1995-9 | 83.0 | 85.0 | - |
| | GB -23A | TORNESS 1 | GCR | 625 | 682 | 1623 | BE | NNC | 1980-8 | 1988-5 | 1988-5 | 68.0 | 75.0 | - |
| | GB -23B | TORNESS 2 | GCR | 625 | 682 | 1623 | BE | NNC | 1980-8 | 1989-2 | 1989-2 | 67.0 | 73.0 | - |

The column Non-Electrical Applications indicates the use of the facility to provide: DS desalination, DH district heating, PH process heating.

TABLE 10. REACTORS IN OPERATION, 31 DEC. 2006 — continued

| Country | Reactor Code | Reactor Name | Type | Capacity MW(e) Net | Gross | Thermal | Operator | NSSS Supplier | Construction Start | Grid Connection | Commercial Operation | LF % to 2005 | UCF % to 2005 | Non-Electrical Applics |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| UK | GB -13A | WYLFA 1 | GCR | 490 | 540 | 1920 | BNFL | EE/B&W/T | 1963-9 | 1971-1 | 1971-11 | 70.0 | 85.0 | - |
| | GB -13B | WYLFA 2 | GCR | 490 | 540 | 1920 | BNFL | EE/B&W/T | 1963-9 | 1971-7 | 1972-1 | 59.0 | 59.0 | - |
| UKRAINE | UA -40 | KHMELNITSKI-1 | PWR | 950 | 1000 | 3000 | NNEGC | PAIP | 1981-11 | 1987-12 | 1988-8 | 72.0 | 72.0 | DH |
| | UA -41 | KHMELNITSKI-2 | PWR | 950 | 1000 | 3000 | NNEGC | PAIP | 1985-2 | 2004-8 | 2005-12 | (1) | (1) | - |
| | UA -27 | ROVNO-1 | PWR | 381 | 420 | 1375 | NNEGC | PAIP | 1973-8 | 1980-12 | 1981-9 | 80.0 | 81.0 | DH |
| | UA -28 | ROVNO-2 | PWR | 376 | 415 | 1375 | NNEGC | PAIP | 1973-10 | 1981-12 | 1982-7 | 79.0 | 81.0 | DH |
| | UA -29 | ROVNO-3 | PWR | 950 | 1000 | 3000 | NNEGC | PAIP | 1980-2 | 1986-12 | 1987-5 | 69.0 | 73.0 | DH |
| | UA -69 | ROVNO-4 | PWR | 950 | 1000 | 3000 | NNEGC | PAA | 1986-8 | 2004-10 | 2006-4 | (1) | (1) | - |
| | UA -44 | SOUTH UKRAINE-1 | PWR | 950 | 1000 | 3000 | NNEGC | PAA | 1977-3 | 1982-12 | 1983-10 | 66.0 | 66.0 | DH |
| | UA -45 | SOUTH UKRAINE-2 | PWR | 950 | 1000 | 3000 | NNEGC | PAA | 1979-10 | 1985-1 | 1985-4 | 61.0 | 62.0 | DH |
| | UA -48 | SOUTH UKRAINE-3 | PWR | 950 | 1000 | 3000 | NNEGC | PAA | 1985-2 | 1989-9 | 1989-12 | 72.0 | 73.0 | DH |
| | UA -54 | ZAPOROZHE-1 | PWR | 950 | 1000 | 3000 | NNEGC | PAIP | 1980-4 | 1984-12 | 1985-12 | 61.0 | 64.0 | DH |
| | UA -56 | ZAPOROZHE-2 | PWR | 950 | 1000 | 3000 | NNEGC | PAIP | 1981-1 | 1985-7 | 1986-2 | 64.0 | 68.0 | DH |
| | UA -78 | ZAPOROZHE-3 | PWR | 950 | 1000 | 3000 | NNEGC | PAIP | 1982-4 | 1986-12 | 1987-3 | 66.0 | 70.0 | DH |
| | UA -79 | ZAPOROZHE-4 | PWR | 950 | 1000 | 3000 | NNEGC | PAIP | 1983-4 | 1987-12 | 1988-4 | 71.0 | 75.0 | DH |
| | UA -126 | ZAPOROZHE-5 | PWR | 950 | 1000 | 3000 | NNEGC | PAIP | 1985-11 | 1989-8 | 1989-10 | 72.0 | 74.0 | DH |
| | UA -127 | ZAPOROZHE-6 | PWR | 950 | 1000 | 3000 | NNEGC | PAIP | 1986-6 | 1995-10 | 1996-9 | 77.0 | 80.0 | DH |
| USA | US -313 | ARKANSAS ONE-1 | PWR | 836 | 880 | 2568 | ENTGYARK | B&W | 1968-12 | 1974-8 | 1974-12 | 73.0 | 78.0 | - |
| | US -368 | ARKANSAS ONE-2 | PWR | 998 | 1040 | 3026 | ENTERGY | CE | 1968-12 | 1978-12 | 1980-3 | 82.0 | 82.0 | - |
| | US -334 | BEAVER VALLEY-1 | PWR | 851 | 923 | 2689 | FENOC | WH | 1970-6 | 1976-6 | 1976-10 | 67.0 | 70.0 | - |
| | US -412 | BEAVER VALLEY-2 | PWR | 851 | 923 | 2689 | FENOC | WH | 1974-5 | 1987-8 | 1987-11 | 81.0 | 85.0 | - |

(1) Performance factors calculated only for period of full commercial operation, and only to 2005.

The column Non-Electrical Applications indicates the use of the facility to provide: DS desalination, DH district heating, PH process heating.

TABLE 10. REACTORS IN OPERATION, 31 DEC. 2006 — continued

| Country | Reactor | | Type | Capacity MW(e) | | | Operator | NSSS Supplier | Construction Start | Grid Connection | Commercial Operation | LF % to 2005 | UCF % to 2005 | Non-Electrical Applics |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Code | Name | | Net | Gross | Thermal | | | | | | | | |
| USA | US -456 | BRAIDWOOD-1 | PWR | 1178 | 1240 | 3587 | EXELON | WH | 1975-12 | 1987-7 | 1988-7 | 84.0 | 86.0 | - |
| | US -457 | BRAIDWOOD-2 | PWR | 1152 | 1213 | 3587 | EXELON | WH | 1975-12 | 1988-5 | 1988-10 | 87.0 | 89.0 | - |
| | US -260 | BROWNS FERRY-2 | BWR | 1118 | 1155 | 3458 | TVA | GE | 1967-5 | 1974-8 | 1975-3 | 60.0 | 63.0 | - |
| | US -296 | BROWNS FERRY-3 | BWR | 1114 | 1190 | 3458 | TVA | GE | 1968-7 | 1976-9 | 1977-3 | 50.0 | 51.0 | - |
| | US -325 | BRUNSWICK-1 | BWR | 938 | 990 | 2923 | PROGENGC | GE | 1970-2 | 1976-12 | 1977-3 | 69.0 | 72.0 | - |
| | US -324 | BRUNSWICK-2 | BWR | 937 | 989 | 2923 | PROGENGC | GE | 1970-2 | 1975-4 | 1975-11 | 67.0 | 71.0 | - |
| | US -454 | BYRON-1 | PWR | 1164 | 1225 | 3587 | EXELON | WH | 1975-12 | 1985-3 | 1985-9 | 82.0 | 86.0 | - |
| | US -455 | BYRON-2 | PWR | 1136 | 1196 | 3587 | EXELON | WH | 1975-12 | 1987-2 | 1987-8 | 87.0 | 91.0 | - |
| | US -483 | CALLAWAY-1 | PWR | 1190 | 1236 | 3565 | AMEREN | WH | 1976-4 | 1984-10 | 1984-12 | 86.0 | 88.0 | - |
| | US -317 | CALVERT CLIFFS-1 | PWR | 873 | 918 | 2700 | CONST | CE | 1969-7 | 1975-1 | 1975-5 | 76.0 | 76.0 | - |
| | US -318 | CALVERT CLIFFS-2 | PWR | 862 | 911 | 2700 | CONST | CE | 1969-7 | 1976-12 | 1977-4 | 79.0 | 80.0 | - |
| | US -413 | CATAWBA-1 | PWR | 1129 | 1188 | 3411 | DUKE | WH | 1975-8 | 1985-1 | 1985-6 | 81.0 | 83.0 | - |
| | US -414 | CATAWBA-2 | PWR | 1129 | 1188 | 3411 | DUKE | WH | 1975-8 | 1986-5 | 1986-8 | 82.0 | 84.0 | - |
| | US -461 | CLINTON-1 | BWR | 1052 | 1098 | 3473 | AMERGENE | GE | 1976-2 | 1987-4 | 1987-11 | 68.0 | 72.0 | - |
| | US -397 | COLUMBIA | BWR | 1131 | 1200 | 3486 | ENERGYNW | GE | 1972-2 | 1984-5 | 1984-12 | 70.0 | 77.0 | - |
| | US -445 | COMANCHE PEAK-1 | PWR | 1150 | 1189 | 3458 | TXU | WH | 1974-12 | 1990-4 | 1990-8 | 83.0 | 88.0 | - |
| | US -446 | COMANCHE PEAK-2 | PWR | 1150 | 1189 | 3458 | TXU | WH | 1974-12 | 1993-4 | 1993-8 | 85.0 | 89.0 | - |
| | US -298 | COOPER | BWR | 760 | 801 | 2381 | NPPD | GE | 1968-6 | 1974-5 | 1974-7 | 69.0 | 74.0 | - |
| | US -302 | CRYSTAL RIVER-3 | PWR | 838 | 890 | 2568 | PROGRESS | B&W | 1968-9 | 1977-1 | 1977-3 | 69.0 | 71.0 | - |
| | US -346 | DAVIS BESSE-1 | PWR | 891 | 925 | 2772 | FENOC | B&W | 1971-3 | 1977-8 | 1978-7 | 63.0 | 66.0 | - |
| | US -275 | DIABLO CANYON-1 | PWR | 1122 | 1136 | 3338 | PGE | WH | 1968-4 | 1984-11 | 1985-5 | 84.0 | 85.0 | - |

TABLE 10. REACTORS IN OPERATION, 31 DEC. 2006 — continued

| Country | Reactor | | Type | Capacity MW(e) | | | Operator | NSSS Supplier | Construction Start | Grid Connection | Commercial Operation | LF % to 2005 | UCF % to 2005 | Non-Electrical Applics |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Code | Name | | Net | Gross | Thermal | | | | | | | | |
| USA | US -323 | DIABLO CANYON-2 | PWR | 1087 | 1164 | 3411 | PGE | WH | 1970-12 | 1985-10 | 1986-3 | 86.0 | 88.0 | - |
| | US -315 | DONALD COOK-1 | PWR | 1016 | 1077 | 3304 | IMPCO | WH | 1969-3 | 1975-2 | 1975-8 | 65.0 | 68.0 | - |
| | US -316 | DONALD COOK-2 | PWR | 1077 | 1133 | 3468 | IMPCO | WH | 1969-3 | 1978-3 | 1978-7 | 62.0 | 66.0 | - |
| | US -237 | DRESDEN-2 | BWR | 867 | 913 | 2527 | EXELON | GE | 1966-1 | 1970-4 | 1970-6 | 65.0 | 76.0 | - |
| | US -249 | DRESDEN-3 | BWR | 867 | 913 | 2527 | EXELON | GE | 1966-10 | 1971-7 | 1971-11 | 65.0 | 72.0 | - |
| | US -331 | DUANE ARNOLD-1 | BWR | 581 | 614 | 1912 | FPLDUANE | GE | 1970-6 | 1974-5 | 1975-2 | 72.0 | 77.0 | - |
| | US -341 | ENRICO FERMI-2 | BWR | 1111 | 1154 | 3430 | DETED | GE | 1972-9 | 1986-9 | 1988-1 | 73.0 | 76.0 | - |
| | US -348 | FARLEY-1 | PWR | 851 | 895 | 2775 | ALP | WH | 1972-8 | 1977-8 | 1977-12 | 80.0 | 82.0 | - |
| | US -364 | FARLEY-2 | PWR | 860 | 905 | 2775 | ALP | WH | 1972-8 | 1981-5 | 1981-7 | 84.0 | 87.0 | - |
| | US -333 | FITZPATRICK | BWR | 852 | 882 | 2536 | ENTERGY | GE | 1970-5 | 1975-2 | 1975-7 | 72.0 | 75.0 | - |
| | US -285 | FORT CALHOUN-1 | PWR | 478 | 512 | 1500 | OPPD | CE | 1968-6 | 1973-8 | 1973-9 | 74.0 | 79.0 | - |
| | US -416 | GRAND GULF-1 | BWR | 1266 | 1333 | 3833 | ENTERGY | GE | 1974-9 | 1984-10 | 1985-7 | 86.0 | 86.0 | - |
| | US -261 | H.B. ROBINSON-2 | PWR | 710 | 745 | 2339 | PROGRESS | WH | 1967-4 | 1970-9 | 1971-3 | 75.0 | 78.0 | - |
| | US -321 | HATCH-1 | BWR | 876 | 898 | 2804 | SOUTH | GE | 1969-9 | 1974-11 | 1975-12 | 76.0 | 79.0 | - |
| | US -366 | HATCH-2 | BWR | 883 | 921 | 2804 | SOUTH | GE | 1972-12 | 1978-9 | 1979-9 | 77.0 | 81.0 | - |
| | US -354 | HOPE CREEK-1 | BWR | 1059 | 1139 | 3339 | PSEG | GE | 1976-3 | 1986-8 | 1986-12 | 81.0 | 84.0 | - |
| | US -247 | INDIAN POINT-2 | PWR | 1020 | 1062 | 3216 | ENTERGY | WH | 1966-10 | 1973-6 | 1974-8 | 68.0 | 70.0 | - |
| | US -286 | INDIAN POINT-3 | PWR | 1025 | 1065 | 3216 | ENTERGY | WH | 1969-8 | 1976-4 | 1976-8 | 63.0 | 66.0 | - |
| | US -305 | KEWAUNEE | PWR | 556 | 581 | 1772 | DOMENGY | WH | 1968-8 | 1974-4 | 1974-6 | 81.0 | 82.0 | - |
| | US -373 | LASALLE-1 | BWR | 1118 | 1177 | 3489 | EXELON | GE | 1973-9 | 1982-9 | 1984-1 | 70.0 | 73.0 | - |
| | US -374 | LASALLE-2 | BWR | 1120 | 1179 | 3489 | EXELON | GE | 1973-9 | 1984-4 | 1984-10 | 70.0 | 72.0 | - |

TABLE 10. REACTORS IN OPERATION, 31 DEC. 2006 — continued

| Country | Reactor | | Type | Capacity MW(e) | | | Operator | NSSS Supplier | Construction Start | Grid Connection | Commercial Operation | LF % to 2005 | UCF % to 2005 | Non-Electrical Applics |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Code | Name | | Net | Gross | Thermal | | | | | | | | |
| USA | US -352 | LIMERICK-1 | BWR | 1134 | 1194 | 3458 | EXELON | GE | 1974-6 | 1985-4 | 1986-2 | 85.0 | 88.0 | - |
| | US -353 | LIMERICK-2 | BWR | 1134 | 1194 | 3458 | EXELON | GE | 1974-6 | 1989-9 | 1990-1 | 91.0 | 92.0 | - |
| | US -369 | MCGUIRE-1 | PWR | 1100 | 1158 | 3411 | DUKE | WH | 1973-2 | 1981-9 | 1981-12 | 76.0 | 80.0 | - |
| | US -370 | MCGUIRE-2 | PWR | 1100 | 1158 | 3411 | DUKE | WH | 1973-2 | 1983-5 | 1984-3 | 81.0 | 83.0 | - |
| | US -336 | MILLSTONE-2 | PWR | 882 | 910 | 2700 | DOMIN | CE | 1970-12 | 1975-11 | 1975-12 | 62.0 | 64.0 | - |
| | US -423 | MILLSTONE-3 | PWR | 1155 | 1253 | 3411 | DOMIN | WH | 1974-8 | 1986-2 | 1986-4 | 71.0 | 73.0 | - |
| | US -263 | MONTICELLO | BWR | 572 | 600 | 1775 | NORTHERN | GE | 1967-6 | 1971-3 | 1971-6 | 79.0 | 84.0 | - |
| | US -220 | NINE MILE POINT-1 | BWR | 621 | 642 | 1850 | NMPNSLLC | GE | 1965-4 | 1969-11 | 1969-12 | 67.0 | 72.0 | - |
| | US -410 | NINE MILE POINT-2 | BWR | 1135 | 1205 | 3467 | NMPNSLLC | GE | 1974-6 | 1987-8 | 1988-3 | 78.0 | 81.0 | - |
| | US -338 | NORTH ANNA-1 | PWR | 924 | 973 | 2893 | VEPCO | WH | 1971-2 | 1978-4 | 1978-6 | 78.0 | 81.0 | - |
| | US -339 | NORTH ANNA-2 | PWR | 910 | 958 | 2893 | VEPCO | WH | 1971-2 | 1980-8 | 1980-12 | 82.0 | 85.0 | - |
| | US -269 | OCONEE-1 | PWR | 846 | 891 | 2568 | DUKE | B&W | 1967-11 | 1973-5 | 1973-7 | 75.0 | 79.0 | - |
| | US -270 | OCONEE-2 | PWR | 846 | 891 | 2568 | DUKE | B&W | 1967-11 | 1973-12 | 1974-9 | 77.0 | 80.0 | - |
| | US -287 | OCONEE-3 | PWR | 846 | 891 | 2568 | DUKE | B&W | 1967-11 | 1974-9 | 1974-12 | 77.0 | 79.0 | - |
| | US -219 | OYSTER CREEK | BWR | 619 | 652 | 1930 | AMERGEN | GE | 1964-12 | 1969-9 | 1969-12 | 68.0 | 73.0 | - |
| | US -255 | PALISADES | PWR | 778 | 842 | 2565 | CONSENEC | CE | 1967-3 | 1971-12 | 1971-12 | 63.0 | 68.0 | - |
| | US -528 | PALO VERDE-1 | PWR | 1314 | 1414 | 3990 | AZPSCO | CE | 1976-5 | 1985-6 | 1986-1 | 74.0 | 76.0 | - |
| | US -529 | PALO VERDE-2 | PWR | 1314 | 1414 | 3990 | AZPSCO | CE | 1976-6 | 1986-5 | 1986-9 | 79.0 | 79.0 | - |
| | US -530 | PALO VERDE-3 | PWR | 1247 | 1346 | 3990 | AZPSCO | CE | 1976-6 | 1987-11 | 1988-1 | 82.0 | 83.0 | - |
| | US -277 | PEACH BOTTOM-2 | BWR | 1112 | 1171 | 3514 | EXELON | GE | 1968-1 | 1974-2 | 1974-7 | 69.0 | 72.0 | - |
| | US -278 | PEACH BOTTOM-3 | BWR | 1112 | 1171 | 3514 | EXELON | GE | 1968-1 | 1974-9 | 1974-12 | 70.0 | 72.0 | - |

TABLE 10. REACTORS IN OPERATION, 31 DEC. 2006 — continued

| Country | Reactor Code | Reactor Name | Type | Capacity MW(e) Net | Gross | Thermal | Operator | NSSS Supplier | Construction Start | Grid Connection | Commercial Operation | LF % to 2005 | UCF % to 2005 | Non-Electrical Applics |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| USA | US -440 | PERRY-1 | BWR | 1235 | 1303 | 3758 | FENOC | GE | 1977-5 | 1986-12 | 1987-11 | 77.0 | 79.0 | - |
| | US -293 | PILGRIM-1 | BWR | 685 | 711 | 2028 | ENTERGY | GE | 1968-8 | 1972-7 | 1972-12 | 64.0 | 68.0 | - |
| | US -266 | POINT BEACH-1 | PWR | 512 | 543 | 1540 | WEP | WH | 1967-7 | 1970-11 | 1970-12 | 77.0 | 83.0 | - |
| | US -301 | POINT BEACH-2 | PWR | 514 | 545 | 1540 | WEP | WH | 1968-7 | 1972-8 | 1972-10 | 81.0 | 83.0 | - |
| | US -282 | PRAIRIE ISLAND-1 | PWR | 523 | 566 | 1650 | NORTHERN | WH | 1968-6 | 1973-12 | 1973-12 | 85.0 | 85.0 | - |
| | US -306 | PRAIRIE ISLAND-2 | PWR | 522 | 544 | 1650 | NUCMAN | WH | 1969-6 | 1974-12 | 1974-12 | 87.0 | 87.0 | - |
| | US -254 | QUAD CITIES-1 | BWR | 867 | 913 | 2957 | EXELON | GE | 1967-2 | 1972-4 | 1973-2 | 70.0 | 75.0 | - |
| | US -265 | QUAD CITIES-2 | BWR | 867 | 913 | 2511 | EXELON | GE | 1967-2 | 1972-5 | 1973-3 | 68.0 | 74.0 | - |
| | US -244 | R.E. GINNA | PWR | 560 | 608 | 1775 | CONST | WH | 1966-4 | 1969-12 | 1970-7 | 80.0 | 83.0 | - |
| | US -458 | RIVER BEND-1 | BWR | 966 | 1036 | 3091 | ENTGS | GE | 1977-3 | 1985-12 | 1986-6 | 78.0 | 81.0 | - |
| | US -272 | SALEM-1 | PWR | 1174 | 1228 | 3459 | PSEGPOWR | WH | 1968-9 | 1976-12 | 1977-6 | 62.0 | 65.0 | - |
| | US -311 | SALEM-2 | PWR | 1130 | 1170 | 3459 | PSEGPOWR | WH | 1968-9 | 1981-6 | 1981-10 | 63.0 | 67.0 | - |
| | US -361 | SAN ONOFRE-2 | PWR | 1070 | 1127 | 3438 | SCE | CE | 1974-3 | 1982-9 | 1983-8 | 81.0 | 80.0 | - |
| | US -362 | SAN ONOFRE-3 | PWR | 1080 | 1127 | 3438 | SCE | CE | 1974-3 | 1983-9 | 1984-4 | 80.0 | 81.0 | - |
| | US -443 | SEABROOK-1 | PWR | 1244 | 1296 | 3587 | FPL | WH | 1976-7 | 1990-5 | 1990-8 | 84.0 | 85.0 | - |
| | US -327 | SEQUOYAH-1 | PWR | 1150 | 1221 | 3411 | TVA | WH | 1970-5 | 1980-7 | 1981-7 | 67.0 | 69.0 | - |
| | US -328 | SEQUOYAH-2 | PWR | 1127 | 1221 | 3411 | TVA | WH | 1970-5 | 1981-12 | 1982-6 | 70.0 | 73.0 | - |
| | US -400 | SHEARON HARRIS-1 | PWR | 900 | 960 | 2900 | PROGENGC | WH | 1978-1 | 1987-1 | 1987-5 | 85.0 | 87.0 | - |
| | US -498 | SOUTH TEXAS-1 | PWR | 1280 | 1354 | 3853 | STP | WH | 1975-12 | 1988-3 | 1988-8 | 77.0 | 78.0 | - |
| | US -499 | SOUTH TEXAS-2 | PWR | 1280 | 1354 | 3853 | STP | WH | 1975-12 | 1989-4 | 1989-6 | 79.0 | 80.0 | - |
| | US -335 | ST. LUCIE-1 | PWR | 839 | 883 | 2700 | FPL | CE | 1970-7 | 1976-5 | 1976-12 | 81.0 | 81.0 | - |

TABLE 10. REACTORS IN OPERATION, 31 DEC. 2006 — continued

| Country | Reactor Code | Reactor Name | Type | Capacity MW(e) Net | Gross | Thermal | Operator | NSSS Supplier | Construction Start | Grid Connection | Commercial Operation | LF % to 2005 | UCF % to 2005 | Non-Electrical Applics |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| USA | US -389 | ST. LUCIE-2 | PWR | 839 | 883 | 2700 | FPL | CE | 1977-5 | 1983-6 | 1983-8 | 85.0 | 86.0 | - |
| | US -280 | SURRY-1 | PWR | 799 | 848 | 2546 | VEPCO | WH | 1968-6 | 1972-7 | 1972-12 | 71.0 | 73.0 | - |
| | US -281 | SURRY-2 | PWR | 799 | 848 | 2546 | VEPCO | WH | 1968-6 | 1973-3 | 1973-5 | 72.0 | 74.0 | - |
| | US -387 | SUSQUEHANNA-1 | BWR | 1135 | 1199 | 3489 | PP&L | GE | 1973-11 | 1982-11 | 1983-6 | 81.0 | 83.0 | - |
| | US -388 | SUSQUEHANNA-2 | BWR | 1140 | 1204 | 3489 | PP&L | GE | 1973-11 | 1984-7 | 1985-2 | 85.0 | 86.0 | - |
| | US -289 | THREE MILE ISLAND-1 | PWR | 786 | 837 | 2568 | AMERGENE | B&W | 1968-5 | 1974-6 | 1974-9 | 70.0 | 86.0 | - |
| | US -250 | TURKEY POINT-3 | PWR | 693 | 729 | 2300 | FPL | WH | 1967-4 | 1972-11 | 1972-12 | 71.0 | 76.0 | - |
| | US -251 | TURKEY POINT-4 | PWR | 693 | 729 | 2300 | FPL | WH | 1967-4 | 1973-6 | 1973-9 | 72.0 | 76.0 | - |
| | US -271 | VERMONT YANKEE | BWR | 605 | 650 | 1912 | ENTERGY | GE | 1967-12 | 1972-9 | 1972-11 | 81.0 | 83.0 | - |
| | US -395 | VIRGIL C. SUMMER-1 | PWR | 966 | 1003 | 2900 | SCEG | WH | 1973-3 | 1982-11 | 1984-1 | 80.0 | 83.0 | - |
| | US -424 | VOGTLE-1 | PWR | 1152 | 1203 | 3565 | SOUTH | WH | 1976-8 | 1987-3 | 1987-6 | 89.0 | 89.0 | - |
| | US -425 | VOGTLE-2 | PWR | 1149 | 1202 | 3565 | SOUTH | WH | 1976-8 | 1989-4 | 1989-5 | 89.0 | 90.0 | - |
| | US -382 | WATERFORD-3 | PWR | 1158 | 1200 | 3716 | ENTERGY | CE | 1974-11 | 1985-3 | 1985-9 | 85.0 | 86.0 | - |
| | US -390 | WATTS BAR-1 | PWR | 1121 | 1202 | 3459 | TVA | WH | 1973-1 | 1996-2 | 1996-5 | 88.0 | 89.0 | - |
| | US -482 | WOLF CREEK | PWR | 1166 | 1213 | 1213 | KGECO | WH | 1977-5 | 1985-6 | 1985-9 | 85.0 | 85.0 | - |

Status as of 31 December 2006, 435 reactors (369682 MW(e)) were connected to the grid, including 6 units (4921 MW(e)) in Taiwan, China:

CHIN SHAN-1, BWR, 604 MW(e);

CHIN SHAN-2, BWR, 604 MW(e);

KUOSHENG-1, BWR, 985 MW(e);

KUOSHENG-2, BWR, 948 MW(e);

MAANSHAN-1, PWR, 890 MW(e);

MAANSHAN-2, PWR, 890 MW(e).

TABLE 11. LONG-TERM SHUT DOWN REACTORS, 31 DEC. 2006

| Country | Reactor | | Type | Capacity MW(e) | | Operator | NSSS Supplier | Construction Start | First Criticality | Grid Connection | Commercial Operation | Shutdown Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Code | Name | | Net | Gross | | | | | | | |
| CANADA | CA - 5 | PICKERING-2 | PHWR | 515 | 542 | OPG | OH/AECL | 1966-9 | 1971-9 | 1971-10 | 1971-12 | 1997-12 |
| | CA - 6 | PICKERING-3 | PHWR | 515 | 542 | OPG | OH/AECL | 1967-12 | 1972-4 | 1972-5 | 1972-6 | 1997-12 |
| | CA - 8 | BRUCE-1 | PHWR | 769 | 825 | BRUCEPOW | OH/AECL | 1971-6 | 1976-12 | 1977-1 | 1977-9 | 1997-10 |
| | CA - 9 | BRUCE-2 | PHWR | 769 | 825 | BRUCEPOW | OH/AECL | 1970-12 | 1976-7 | 1976-9 | 1977-9 | 1995-10 |
| JAPAN | JP - 31 | MONJU | FBR | 246 | 280 | JAEA | T/H/F/M | 1986-5 | 1994-4 | 1995-8 | — | 1995-12 |
| USA | US - 259 | BROWNS FERRY-1 | PWR | 1065 | 1152 | TVA | OKBM | 1967-5 | 1973-8 | 1973-10 | 1974-8 | 1985-3 |

Status as of 31 December 2006, 6 reactors (3879 MW(e)) were in long-term shutdown.

TABLE 12. REACTORS SHUT DOWN, 31 DEC. 2006

| Country | Reactor | | Type | Capacity MW(e) | | Operator | NSSS Supplier | Construction Start | First Criticality | Grid Connection | Commercial Operation | Shut Down |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Code | Name | | Net | Gross | | | | | | | |
| ARMENIA | AM -18 | ARMENIA-1 | PWR | 376 | 408 | JSC | FAEA | 1973-1 | 1976-12 | 1976-12 | 1979-10 | 1989-2 |
| BELGIUM | BE -1 | BR-3 | PWR | 11 | 12 | CEN/SCK | WH | 1957-11 | 1962-8 | 1962-10 | 1962-10 | 1987-6 |
| BULGARIA | BG -1 | KOZLODUY-1 | PWR | 408 | 440 | KOZNPP | AEE | 1970-4 | 1974-6 | 1974-7 | 1974-10 | 2002-12 |
| | BG -2 | KOZLODUY-2 | PWR | 408 | 440 | KOZNPP | AEE | 1970-4 | 1975-8 | 1975-8 | 1975-11 | 2002-12 |
| | BG -3 | KOZLODUY-3 | PWR | 408 | 440 | KOZNPP | AEE | 1973-10 | 1980-12 | 1980-12 | 1981-1 | 2006-12 |
| | BG -4 | KOZLODUY-4 | PWR | 408 | 440 | KOZNPP | AEE | 1973-10 | 1982-4 | 1982-5 | 1982-6 | 2006-12 |
| CANADA | CA -2 | DOUGLAS POINT | PHWR | 206 | 218 | OPG | AECL | 1960-2 | 1966-11 | 1967-1 | 1968-9 | 1984-5 |
| | CA -3 | GENTILLY-1 | HWLWR | 250 | 266 | HQ | AECL | 1966-9 | 1970-11 | 1971-4 | 1972-5 | 1977-6 |
| | CA -1 | ROLPHTON NPD | PHWR | 22 | 25 | OH | CGE | 1958-1 | 1962-4 | 1962-6 | 1962-10 | 1987-8 |
| FRANCE | FR -9 | BUGEY-1 | GCR | 540 | 555 | EDF | VARIOUS | 1965-12 | 1972-3 | 1972-4 | 1972-7 | 1994-5 |
| | FR -2 | CHINON-A1 | GCR | 70 | 80 | EDF | LEVIVIER | 1957-2 | 1962-9 | 1963-6 | 1964-2 | 1973-4 |
| | FR -3 | CHINON-A2 | GCR | 210 | 230 | EDF | LEVIVIER | 1959-8 | 1964-8 | 1965-2 | 1965-2 | 1985-6 |
| | FR -4 | CHINON-A3 | GCR | 480 | 480 | EDF | GTM | 1961-3 | 1966-3 | 1966-8 | 1966-8 | 1990-6 |
| | FR -5 | CHOOZ-A(ARDENNES) | PWR | 310 | 320 | SENA | A/F/W | 1962-1 | 1966-10 | 1967-4 | 1967-4 | 1991-10 |
| | FR -6 | EL-4 (MONTS D'ARREE) | HWGCR | 70 | 75 | EDF | GAAA | 1962-7 | 1966-12 | 1967-7 | 1968-6 | 1985-7 |
| | FR -1B | G-2 (MARCOULE) | GCR | 38 | 43 | COGEMA | SACM | 1955-3 | 1958-7 | 1959-4 | 1959-4 | 1980-2 |
| | FR -1 | G-3 (MARCOULE) | GCR | 38 | 43 | COGEMA | SACM | 1956-3 | 1959-6 | 1960-4 | 1960-4 | 1984-6 |
| | FR -7 | ST. LAURENT-A1 | GCR | 480 | 500 | EDF | VARIOUS | 1963-10 | 1969-1 | 1969-3 | 1969-6 | 1990-4 |
| | FR -8 | ST. LAURENT-A2 | GCR | 515 | 530 | EDF | VARIOUS | 1966-1 | 1971-7 | 1971-8 | 1971-11 | 1992-5 |
| | FR -24 | SUPER*-PHENIX | FBR | 1200 | 1242 | NERSA | ASPALDO | 1976-12 | 1985-9 | 1986-1 | — | 1998-12 |
| GERMANY | DE -4 | AVR JUELICH (AVR) | HTGR | 13 | 15 | AVR | BBK | 1961-8 | 1966-8 | 1967-12 | 1969-5 | 1988-12 |

TABLE 12. REACTORS SHUT DOWN, 31 DEC. 2006 — continued

| Country | Reactor | | Type | Capacity MW(e) | | Operator | NSSS Supplier | Construction Start | First Criticality | Grid Connection | Commercial Operation | Shut Down |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Code | Name | | Net | Gross | | | | | | | |
| GERMANY | DE -502 | GREIFSWALD-1(KGR 1) | PWR | 408 | 440 | EWN | AEE,KAB | 1970-3 | 1973-12 | 1973-12 | 1974-7 | 1990-2 |
| | DE -503 | GREIFSWALD-2 (KGR 2) | PWR | 408 | 440 | EWN | AEE,KAB | 1970-3 | 1974-12 | 1974-12 | 1975-4 | 1990-2 |
| | DE -504 | GREIFSWALD-3 (KGR 3) | PWR | 408 | 440 | EWN | AEE,KAB | 1972-4 | 1977-10 | 1977-10 | 1978-5 | 1990-2 |
| | DE -505 | GREIFSWALD-4 (KGR 4) | PWR | 408 | 440 | EWN | AEE,KAB | 1972-4 | 1979-7 | 1979-9 | 1979-11 | 1990-7 |
| | DE -506 | GREIFSWALD-5 (KGR 5) | PWR | 408 | 440 | EWN | AEE,KAB | 1976-12 | 1989-3 | 1989-4 | 1989-11 | 1989-11 |
| | DE -3 | GUNDREMMINGEN-A (KRB A) | BWR | 237 | 250 | KGB | AEG,GE | 1962-12 | 1966-8 | 1966-12 | 1967-4 | 1977-1 |
| | DE -7 | HDR GROSSWELZHEIM | BWR | 23 | 25 | HDR | AEG,KWU | 1965-1 | 1969-10 | 1969-10 | 1970-8 | 1971-4 |
| | DE -8 | KNK II | FBR | 17 | 21 | KBG | IA | 1974-9 | 1977-10 | 1978-4 | 1979-3 | 1991-8 |
| | DE -6 | LINGEN (KWL) | BWR | 250 | 268 | KWL | AEG | 1964-10 | 1968-1 | 1968-7 | 1968-10 | 1979-1 |
| | DE -22 | MUELHEIM-KAERLICH (KMK) | PWR | 1219 | 1302 | RWE | BBR | 1975-1 | 1986-3 | 1986-3 | 1987-8 | 1988-9 |
| | DE -2 | MZFR | PHWR | 52 | 57 | KBG | SIEMENS | 1961-12 | 1965-9 | 1966-3 | 1966-12 | 1984-5 |
| | DE -11 | NIEDERAICHBACH (KKN) | HWGCR | 100 | 106 | KKN | SIEM,KWU | 1966-6 | 1972-12 | 1973-1 | 1973-1 | 1974-7 |
| | DE -5 | OBRIGHEIM (KWO) | PWR | 340 | 357 | EnBW | SIEM,KWU | 1965-3 | 1968-9 | 1968-10 | 1969-3 | 2005-5 |
| | DE -501 | RHEINSBERG (KKR) | PWR | 62 | 70 | EWN | AEE,KAB | 1960-1 | 1966-3 | 1966-5 | 1966-10 | 1990-6 |
| | DE -10 | STADE (KKS) | PWR | 640 | 672 | EON | KWU | 1967-12 | 1972-1 | 1972-1 | 1972-5 | 2003-11 |
| | DE -19 | THTR-300 | HTGR | 296 | 308 | HKG | HRB | 1971-5 | 1983-9 | 1985-11 | 1987-6 | 1988-4 |
| | DE -1 | VAK KAHL | BWR | 15 | 16 | VAK | GE,AEG | 1958-7 | 1960-11 | 1961-6 | 1962-2 | 1985-11 |
| | DE -9 | WUERGASSEN (KWW) | BWR | 640 | 670 | PE | AEG,KWU | 1968-1 | 1971-10 | 1971-12 | 1975-11 | 1994-8 |
| ITALY | IT -4 | CAORSO | BWR | 860 | 882 | SOGIN | AMN/GETS | 1970-1 | 1977-12 | 1978-5 | 1981-12 | 1990-7 |
| | IT -3 | ENRICO FERMI (TRINO) | PWR | 260 | 270 | SOGIN | WH | 1961-7 | 1964-6 | 1964-10 | 1965-1 | 1990-7 |
| | IT -2 | GARIGLIANO | BWR | 150 | 160 | SOGIN | GE | 1959-11 | 1963-6 | 1964-1 | 1964-6 | 1982-3 |
| | IT -1 | LATINA | GCR | 153 | 160 | SOGIN | TNPG | 1958-11 | 1962-12 | 1963-5 | 1964-1 | 1987-12 |
| JAPAN | JP -20 | FUGEN ATR | HWLWR | 148 | 165 | JAEA | HITACHI | 1972-5 | 1978-3 | 1978-7 | 1979-3 | 2003-3 |

TABLE 12. REACTORS SHUT DOWN, 31 DEC. 2006 — continued

| Country | Reactor | | Type | Capacity MW(e) | | Operator | NSSS Supplier | Construction Start | First Criticality | Grid Connection | Commercial Operation | Shut Down |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Code | Name | | Net | Gross | | | | | | | |
| JAPAN | JP -1 | JPDR | BWR | 13 | 13 | JAERI | GE | 1960-12 | 1963-8 | 1963-10 | 1965-3 | 1976-3 |
| | JP -2 | TOKAI-1 | GCR | 159 | 166 | JAPC | GEC | 1961-3 | 1965-5 | 1965-11 | 1966-7 | 1998-3 |
| KAZAKHSTAN | KZ -10 | BN-350 | FBR | 52 | 90 | KATEII | MAEC | 1964-10 | 1972-11 | 1973-7 | 1973-7 | 1999-4 |
| LITHUANIA | LT -46 | IGNALINA-1 | LWGR | 1185 | 1300 | INPP | MAEP | 1977-5 | 1983-10 | 1983-12 | 1984-5 | 2004-12 |
| NETHLNDS | NL -1 | DODEWAARD | BWR | 55 | 60 | GKN(NL) | RDM | 1965-5 | 1968-6 | 1968-10 | 1969-3 | 1997-3 |
| RUSSIA | RU -1 | APS-1 OBNINSK | LWGR | 5 | 6 | REA | | 1951-1 | 1954-5 | 1954-6 | 1954-6 | 2002-4 |
| | RU -3 | BELOYARSKY-1 | LWGR | 102 | 108 | REA | FAEA | 1958-6 | 1963-9 | 1964-4 | 1964-4 | 1983-1 |
| | RU -6 | BELOYARSKY-2 | LWGR | 146 | 160 | REA | FAEA | 1962-1 | 1967-10 | 1967-12 | 1969-12 | 1990-1 |
| | RU -4 | NOVOVORONEZH-1 | PWR | 197 | 210 | REA | FAEA | 1957-7 | 1963-12 | 1964-9 | 1964-12 | 1988-2 |
| | RU -8 | NOVOVORONEZH-2 | PWR | 336 | 365 | REA | FAEA | 1964-6 | 1969-12 | 1969-12 | 1970-4 | 1990-8 |
| SLOVAKIA | SK -1 | BOHUNICE A1 | HWGCR | 110 | 144 | EBO | SKODA | 1958-8 | 1972-10 | 1972-12 | 1972-12 | 1977-2 |
| | SK -2 | BOHUNICE-1 | PWR | 408 | 440 | EBO | AEE | 1972-4 | 1978-11 | 1978-12 | 1980-4 | 2006-12 |
| SPAIN | ES -1 | JOSE CABRERA-1(ZORITA) | PWR | 141 | 150 | UFG | WH | 1964-6 | 1968-6 | 1968-7 | 1969-8 | 2006-4 |
| | ES -3 | VANDELLOS-1 | GCR | 480 | 500 | HIFRENSA | CEA | 1968-6 | 1972-2 | 1972-5 | 1972-8 | 1990-7 |
| SWEDEN | SE -1 | AGESTA | PHWR | 10 | 12 | VAB | ABBATOM | 1957-12 | 1963-7 | 1964-5 | 1964-5 | 1974-6 |
| | SE -6 | BARSEBACK-1 | BWR | 600 | 615 | BKAB | ASEASTAL | 1971-2 | 1975-1 | 1975-5 | 1975-7 | 1999-11 |
| | SE -8 | BARSEBACK-2 | BWR | 615 | 615 | BKAB | ABBATOM | 1973-1 | 1977-2 | 1977-3 | 1977-7 | 2005-5 |
| UK | GB -3A | BERKELEY 1 | GCR | 138 | 166 | BNFL | TNPG | 1957-1 | 1961-8 | 1962-6 | 1962-6 | 1989-3 |
| | GB -3B | BERKELEY 2 | GCR | 138 | 166 | BNFL | TNPG | 1957-1 | 1962-3 | 1962-6 | 1962-10 | 1988-10 |

TABLE 12. REACTORS SHUT DOWN, 31 DEC. 2006 — continued

| Country | Reactor | | Type | Capacity MW(e) | | Operator | NSSS Supplier | Construction Start | First Criticality | Grid Connection | Commercial Operation | Shut Down |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Code | Name | | Net | Gross | | | | | | | |
| UK | GB -4A | BRADWELL 1 | GCR | 123 | 146 | BNFL | TNPG | 1957-1 | 1961-8 | 1962-7 | 1962-7 | 2002-3 |
| | GB -4B | BRADWELL 2 | GCR | 123 | 146 | BNFL | TNPG | 1957-1 | 1962-4 | 1962-7 | 1962-11 | 2002-3 |
| | GB -1A | CALDER HALL 1 | GCR | 50 | 60 | BNFL | UKAEA | 1953-8 | 1956-5 | 1956-8 | 1956-10 | 2003-3 |
| | GB -1B | CALDER HALL 2 | GCR | 50 | 60 | BNFL | UKAEA | 1953-8 | 1956-12 | 1957-2 | 1957-2 | 2003-3 |
| | GB -1C | CALDER HALL 3 | GCR | 50 | 60 | BNFL | UKAEA | 1955-8 | 1958-1 | 1958-3 | 1958-5 | 2003-3 |
| | GB -1D | CALDER HALL 4 | GCR | 50 | 60 | BNFL | UKAEA | 1955-8 | 1958-12 | 1959-4 | 1959-4 | 2003-3 |
| | GB -2A | CHAPELCROSS 1 | GCR | 50 | 60 | BNFL | UKAEA | 1955-10 | 1958-11 | 1959-2 | 1959-3 | 2004-6 |
| | GB -2B | CHAPELCROSS 2 | GCR | 50 | 60 | BNFL | UKAEA | 1955-10 | 1959-5 | 1959-7 | 1959-8 | 2004-6 |
| | GB -2C | CHAPELCROSS 3 | GCR | 50 | 60 | BNFL | UKAEA | 1955-10 | 1959-8 | 1959-11 | 1959-12 | 2004-6 |
| | GB -2D | CHAPELCROSS 4 | GCR | 50 | 60 | BNFL | UKAEA | 1955-10 | 1959-12 | 1960-1 | 1960-3 | 2004-6 |
| | GB -14 | DOUNREAY DFR | FBR | 14 | 15 | UKAEA | UKAEA | 1955-3 | 1959-11 | 1962-10 | 1962-10 | 1977-3 |
| | GB -15 | DOUNREAY PFR | FBR | 234 | 250 | UKAEA | TNPG | 1966-1 | 1974-3 | 1975-1 | 1976-7 | 1994-3 |
| | GB -9A | DUNGENESS-A1 | GCR | 225 | 230 | BNFL | TNPG | 1960-7 | 1965-6 | 1965-9 | 1965-10 | 2006-12 |
| | GB -9B | DUNGENESS-A2 | GCR | 225 | 230 | BNFL | TNPG | 1960-7 | 1965-9 | 1965-11 | 1965-12 | 2006-12 |
| | GB -7A | HINKLEY POINT-A1 | GCR | 235 | 267 | BNFL | EE/B&W/T | 1957-11 | 1964-5 | 1965-2 | 1965-3 | 2000-5 |
| | GB -7B | HINKLEY POINT-A2 | GCR | 235 | 267 | BNFL | EE/B&W/T | 1957-11 | 1964-10 | 1965-3 | 1965-5 | 2000-5 |
| | GB -6A | HUNTERSTON-A1 | GCR | 150 | 173 | BNFL | GEC | 1957-10 | 1963-8 | 1964-2 | 1964-2 | 1990-3 |
| | GB -6B | HUNTERSTON-A2 | GCR | 150 | 173 | BNFL | GEC | 1957-10 | 1964-3 | 1964-6 | 1964-7 | 1989-12 |
| | GB -10A | SIZEWELL-A1 | GCR | 210 | 245 | BNFL | EE/B&W/T | 1961-4 | 1965-6 | 1966-1 | 1966-3 | 2006-12 |
| | GB -10B | SIZEWELL-A2 | GCR | 210 | 245 | BNFL | EE/B&W/T | 1961-4 | 1965-12 | 1966-4 | 1966-9 | 2006-12 |
| | GB -8A | TRAWSFYNYDD 1 | GCR | 195 | 235 | BNFL | APC | 1959-7 | 1964-9 | 1965-1 | 1965-3 | 1991-2 |
| | GB -8B | TRAWSFYNYDD 2 | GCR | 195 | 235 | BNFL | APC | 1959-7 | 1964-12 | 1965-2 | 1965-3 | 1991-2 |
| | GB -5 | WINDSCALE AGR | GCR | 32 | 41 | UKAEA | VARIOUS | 1958-11 | 1962-8 | 1963-2 | 1963-3 | 1981-4 |

TABLE 12. REACTORS SHUT DOWN, 31 DEC. 2006 — continued

| Country | Reactor | | Type | Capacity MW(e) | | Operator | NSSS Supplier | Construction Start | First Criticality | Grid Connection | Commercial Operation | Shut Down |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Code | Name | | Net | Gross | | | | | | | |
| UK | GB -12 | WINFRITH SGHWR | SGHWR | 92 | 100 | UKAEA | ICL/FE | 1963-5 | 1967-9 | 1967-12 | 1968-1 | 1990-9 |
| UKRAINE | UA -25 | CHERNOBYL-1 | LWGR | 725 | 800 | MTE | FAEA | 1970-3 | 1977-8 | 1977-9 | 1978-5 | 1996-11 |
| | UA -26 | CHERNOBYL-2 | LWGR | 925 | 1000 | MTE | FAEA | 1973-2 | 1978-11 | 1978-12 | 1979-5 | 1991-10 |
| | UA -42 | CHERNOBYL-3 | LWGR | 925 | 1000 | MTE | FAEA | 1976-3 | 1981-6 | 1981-12 | 1982-6 | 2000-12 |
| | UA -43 | CHERNOBYL-4 | LWGR | 925 | 1000 | MTE | FAEA | 1979-4 | 1983-11 | 1983-12 | 1984-3 | 1986-4 |
| USA | US -155 | BIG ROCK POINT | BWR | 67 | 71 | CPC | GE | 1960-5 | 1962-9 | 1962-12 | 1963-3 | 1997-8 |
| | US -4 | BONUS | BWR | 17 | 18 | DOE/PRWR | GNEPRWRA | 1960-1 | 1964-4 | 1964-8 | 1965-9 | 1968-6 |
| | US -144 | CVTR | PHWR | 17 | 19 | CVPA | WH | 1960-1 | 1963-3 | 1963-12 | — | 1967-1 |
| | US -10 | DRESDEN-1 | BWR | 197 | 207 | EXELON | GE | 1956-5 | 1959-10 | 1960-4 | 1960-7 | 1978-10 |
| | US -1 | ELK RIVER | BWR | 22 | 24 | RCPA | AC | 1959-1 | 1962-11 | 1963-8 | 1964-7 | 1968-2 |
| | US -16 | ENRICO FERMI-1 | FBR | 61 | 65 | DETED | UEC | 1956-8 | 1963-8 | 1966-8 | — | 1972-11 |
| | US -267 | FORT ST. VRAIN | HTGR | 330 | 342 | PSCC | GA | 1968-9 | 1974-1 | 1976-12 | 1979-7 | 1989-8 |
| | US -18 | GE VALLECITOS | BWR | 24 | 24 | GE | GE | 1956-1 | 1957-8 | 1957-10 | 1957-10 | 1963-12 |
| | US -213 | HADDAM NECK | PWR | 560 | 603 | CYAPC | WH | 1964-5 | 1967-7 | 1967-8 | 1968-1 | 1996-12 |
| | US -77 | HALLAM | X | 75 | 84 | AEC/NPPD | GE | 1959-1 | 1963-1 | 1963-9 | 1963-11 | 1964-9 |
| | US -133 | HUMBOLDT BAY | BWR | 63 | 65 | PGE | GE | 1960-11 | 1963-2 | 1963-4 | 1963-8 | 1976-7 |
| | US -3 | INDIAN POINT-1 | PWR | 257 | 277 | ENTERGY | B&W | 1956-5 | 1962-8 | 1962-9 | 1962-10 | 1974-10 |
| | US -409 | LACROSSE | BWR | 48 | 55 | DPC | AC | 1963-3 | 1967-7 | 1968-4 | 1969-11 | 1987-4 |
| | US -309 | MAINE YANKEE | PWR | 860 | 900 | MYAPC | CE | 1968-10 | 1972-10 | 1972-11 | 1972-12 | 1997-8 |
| | US -245 | MILLSTONE-1 | BWR | 641 | 684 | DOMIN | GE | 1966-5 | 1970-10 | 1970-11 | 1971-3 | 1998-7 |
| | US -130 | PATHFINDER | BWR | 59 | 63 | NUCMAN | AC | 1959-1 | 1964-1 | 1966-7 | — | 1967-10 |
| | US -171 | PEACH BOTTOM-1 | HTGR | 40 | 42 | EXELON | GA | 1962-2 | 1966-3 | 1967-1 | 1967-6 | 1974-11 |

TABLE 12. REACTORS SHUT DOWN, 31 DEC. 2006 — continued

| Country | Reactor | | Type | Capacity MW(e) | | Operator | NSSS Supplier | Construction Start | First Criticality | Grid Connection | Commercial Operation | Shut Down |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Code | Name | | Net | Gross | | | | | | | |
| USA | US -D02 | PIQUA | X | 12 | 12 | CofPiqua | GE | 1960-1 | 1961-1 | 1963-7 | 1963-11 | 1966-1 |
| | US -312 | RANCHO SECO-1 | PWR | 873 | 917 | SMUD | B&W | 1969-4 | 1974-9 | 1974-10 | 1975-4 | 1989-6 |
| | US -206 | SAN ONOFRE-1 | PWR | 436 | 456 | SCE | WH | 1964-5 | 1967-6 | 1967-7 | 1968-1 | 1992-11 |
| | US -146 | SAXTON | PWR | 3 | 3 | SNEC | GE | 1960-1 | 1967-1 | 1967-3 | 1967-3 | 1972-5 |
| | US -001 | SHIPPINGPORT | PWR | 60 | 68 | DOE DUQU | WH | 1954-1 | 1957-1 | 1957-12 | 1958-5 | 1982-10 |
| | US -322 | SHOREHAM | BWR | 820 | 849 | LILCO | GE | 1972-11 | 1985-2 | 1986-8 | — | 1989-5 |
| | US -320 | THREE MILE ISLAND-2 | PWR | 880 | 959 | GPU | B&W | 1969-11 | 1978-3 | 1978-4 | 1978-12 | 1979-3 |
| | US -344 | TROJAN | PWR | 1095 | 1155 | PORTGE | WH | 1970-2 | 1975-12 | 1975-12 | 1976-5 | 1992-11 |
| | US -29 | YANKEE NPS | PWR | 167 | 180 | YAEC | WH | 1957-11 | 1960-8 | 1960-11 | 1961-7 | 1991-10 |
| | US -295 | ZION-1 | PWR | 1040 | 1085 | EXELON | WH | 1968-12 | 1973-6 | 1973-6 | 1973-12 | 1998-1 |
| | US -304 | ZION-2 | PWR | 1040 | 1085 | EXELON | WH | 1968-12 | 1973-12 | 1973-12 | 1974-9 | 1998-1 |

Status as of 31 December 2006, 119 reactors (35165 MW(e)) are permanently shut down.

TABLE 13. ANNUAL CONSTRUCTION STARTS AND CONNECTIONS TO THE GRID, 1955 TO 2006

| Year | Construction Starts | | Connections to the Grid | | Reactors in operation | |
|---|---|---|---|---|---|---|
| | Units | MW(e) | Units | MW(e) | Units | MW(e) |
| 1955 | 8 | 352 | | | 1 | 5 |
| 1956 | 5 | 577 | 1 | 50 | 2 | 55 |
| 1957 | 13 | 1747 | 3 | 134 | 5 | 189 |
| 1958 | 6 | 434 | 1 | 50 | 6 | 239 |
| 1959 | 7 | 906 | 5 | 238 | 11 | 479 |
| 1960 | 11 | 910 | 4 | 452 | 15 | 931 |
| 1961 | 7 | 1384 | 1 | 15 | 16 | 946 |
| 1962 | 7 | 1237 | 9 | 893 | 25 | 1839 |
| 1963 | 5 | 1600 | 9 | 457 | 33 | 2266 |
| 1964 | 9 | 2694 | 8 | 1036 | 40 | 3227 |
| 1965 | 9 | 3144 | 8 | 1679 | 48 | 4908 |
| 1966 | 14 | 6878 | 8 | 1371 | 55 | 6274 |
| 1967 | 23 | 14788 | 11 | 2093 | 64 | 8319 |
| 1968 | 32 | 22955 | 6 | 1051 | 68 | 9348 |
| 1969 | 15 | 11551 | 10 | 3664 | 78 | 13047 |
| 1970 | 34 | 23410 | 6 | 3472 | 84 | 16561 |
| 1971 | 13 | 8056 | 15 | 7243 | 99 | 23934 |
| 1972 | 29 | 22485 | 15 | 8517 | 113 | 32571 |
| 1973 | 29 | 24286 | 19 | 11571 | 132 | 43745 |
| 1974 | 27 | 24380 | 26 | 17433 | 154 | 61156 |
| 1975 | 32 | 31020 | 15 | 10340 | 169 | 70580 |
| 1976 | 33 | 31360 | 18 | 13680 | 186 | 84116 |
| 1977 | 19 | 16691 | 17 | 12358 | 200 | 96443 |
| 1978 | 14 | 13030 | 20 | 16247 | 219 | 111882 |
| 1979 | 25 | 22230 | 8 | 6945 | 225 | 117951 |
| 1980 | 20 | 19355 | 21 | 15579 | 245 | 133122 |
| 1981 | 15 | 14204 | 23 | 20570 | 267 | 153937 |
| 1982 | 14 | 15726 | 19 | 15689 | 284 | 168486 |
| 1983 | 9 | 7597 | 23 | 19006 | 306 | 187824 |
| 1984 | 7 | 7095 | 33 | 31788 | 336 | 218516 |
| 1985 | 13 | 11066 | 33 | 31481 | 363 | 245752 |
| 1986 | 6 | 5196 | 27 | 27304 | 389 | 270932 |
| 1987 | 8 | 7737 | 22 | 22231 | 407 | 293927 |
| 1988 | 5 | 5881 | 14 | 13912 | 416 | 305298 |
| 1989 | 6 | 4053 | 12 | 10687 | 420 | 312087 |
| 1990 | 4 | 2459 | 10 | 10481 | 416 | 318386 |
| 1991 | 2 | 2291 | 4 | 3668 | 415 | 321974 |
| 1992 | 3 | 3126 | 6 | 4806 | 418 | 325045 |
| 1993 | 4 | 3602 | 9 | 8997 | 427 | 333945 |
| 1994 | 2 | 1367 | 5 | 4251 | 429 | 336952 |
| 1995 | | | 4 | 3328 | 434 | 341429 |
| 1996 | 1 | 610 | 6 | 7029 | 438 | 347327 |
| 1997 | 5 | 4466 | 3 | 3679 | 433 | 347625 |
| 1998 | 3 | 2096 | 4 | 3074 | 430 | 344166 |
| 1999 | 4 | 4594 | 4 | 2787 | 432 | 347486 |
| 2000 | 6 | 5363 | 6 | 3111 | 435 | 349852 |
| 2001 | 1 | 1304 | 3 | 2733 | 438 | 352753 |
| 2002 | 5 | 2440 | 6 | 5059 | 439 | 357438 |
| 2003 | 1 | 202 | 2 | 1644 | 437 | 359889 |
| 2004 | 2 | 1336 | 5 | 4785 | 438 | 364807 |
| 2005 | 3 | 2900 | 4 | 3852 | 441 | 368239 |
| 2006 | 4 | 3320 | 2 | 1490 | 435 | 369682 |

TABLE 14. CONSTRUCTION TIME SPAN

| Country | Operating and Shut Down Reactors (Year of Grid Connection)/Average Construction Time | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1971 to 1975 | | 1976 to 1980 | | 1981 to 1985 | | 1986 to 1990 | | 1991 to 1995 | | 1996 to 2000 | | 2001 to 2005 | | 2006 | |
| | No. | Months | No. | Months | No. | Months | No. | Months | No. | Months | No. | Months | No. | Months | No. | Months |
| ARGENTINA | 1 | 70 | | | 1 | 19 | | | | | | | | | | |
| ARMENIA | | | 2 | 52 | | | | | | | | | | | | |
| BELGIUM | 3 | 56 | | | 4 | 82 | | | | | | | | | | |
| BRAZIL | | | | | 1 | 132 | | | | | 1 | 295 | | | | |
| BULGARIA | 2 | 59 | 1 | 87 | 1 | 104 | 1 | 89 | 1 | 113 | | | | | | |
| CANADA | 5 | 58 | 4 | 70 | 7 | 93 | 5 | 99 | 2 | 97 | | | | | | |
| CHINA | | | | | | | | | 3 | 75 | | | 6 | 64 | 1 | 80 |
| CZECH R. | | | | | 1 | 74 | 3 | 93 | | | 1 | 167 | 1 | 191 | | |
| FINLAND | | | 4 | 70 | | | | | | | | | | | | |
| FRANCE | 3 | 69 | 13 | 65 | 24 | 68 | 15 | 87 | 3 | 96 | 4 | 126 | | | | |
| GERMANY | 6 | 56 | 9 | 70 | 7 | 108 | 6 | 104 | | | | | | | | |
| HUNGARY | | | | | 2 | 112 | 2 | 90 | | | | | | | | |
| INDIA | 1 | 88 | 1 | 152 | 2 | 154 | 1 | 152 | 3 | 129 | 4 | 125 | | | 1 | 74 |
| ITALY | | | 1 | 101 | | | | | | | | | | | | |
| JAPAN | 8 | 46 | 11 | 58 | 10 | 48 | 8 | 50 | 10 | 58 | 3 | 45 | 4 | 47 | | |
| KAZAKHSTAN | 1 | 106 | | | | | | | | | | | | | | |
| KOREA RP | | | 1 | 59 | 4 | 65 | 4 | 63 | 2 | 61 | 5 | 56 | 4 | 54 | | |
| LITHUANIA | | | | | | | 1 | 116 | | | | | | | | |
| MEXICO | | | | | | | 1 | 151 | 1 | 210 | | | | | | |
| NETHERLANDS | 1 | 49 | | | | | | | | | | | | | | |

Note: Construction time is measured from the first pouring of concrete to the connection of the unit to the grid.

TABLE 14. CONSTRUCTION TIME SPAN — continued

| Country | Operating and Shut Down Reactors (Year of Grid Connection)/Average Construction Time | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1971 to 1975 | | 1976 to 1980 | | 1981 to 1985 | | 1986 to 1990 | | 1991 to 1995 | | 1996 to 2000 | | 2001 to 2005 | | 2006 | |
| | No. | Months | No. | Months | No. | Months | No. | Months | No. | Months | No. | Months | No. | Months | No. | Months |
| PAKISTAN | 1 | 63 | | | | | | | | | 1 | 83 | | | | |
| ROMANIA | | | | | | | | | | | 1 | 169 | | | | |
| RUSSIA | 9 | 52 | 6 | 83 | 9 | 76 | 4 | 69 | 1 | 109 | | | 2 | 233 | | |
| S.AFRICA | | | | | 2 | 101 | | | | | | | | | | |
| SLOVAKIA | 1 | 173 | 2 | 89 | 2 | 99 | | | | | 2 | 187 | | | | |
| SLOVENIA | | | | | 1 | 80 | | | | | | | | | | |
| SPAIN | 2 | 54 | | | 5 | 114 | 2 | 96 | | | | | | | | |
| SWEDEN | 5 | 58 | 3 | 78 | 4 | 78 | | | | | | | | | | |
| SWITZERLAND | 2 | 50 | 1 | 63 | 1 | 125 | | | | | | | | | | |
| UK | 3 | 98 | 4 | 106 | 6 | 191 | 4 | 98 | 1 | 80 | | | | | | |
| UKRAINE | | | 3 | 84 | 7 | 67 | 6 | 62 | 1 | 113 | | | 2 | 227 | | |
| USA | 39 | 67 | 18 | 96 | 25 | 129 | 22 | 146 | 1 | 223 | 1 | 279 | | | | |
| WORLD MEDIAN VALUE | 93 | 61 | 86 | 71 | 131 | 84 | 85 | 93 | 29 | 89 | 23 | 121 | 20 | 59 | 2 | 77 |

Note: Construction time is measured from the first pouring of concrete to the connection of the unit to the grid.

The totals include the following data in Taiwan, China:

— 1976 to 1980: 2 units, 64 months;

— 1981 to 1985: 4 units, 72 months.

TABLE 15. PERFORMANCE FACTORS BY REACTOR CATEGORY, 2003 to 2005

| Reactor Category | Reactors reporting to IAEA PRIS (see note) | | | | | |
|---|---|---|---|---|---|---|
| | Number of Units | Availability Factor % | Capability Factor % | Forced Loss Rate % | Operating Factor % | Load Factor % |
| PHWR 100-599 MWe | 21 | 70.8 | 75.4 | 6.3 | 66.1 | 72.9 |
| PHWR >= 600MWe | 20 | 85.5 | 86.3 | 2.7 | 85.7 | 86.8 |
| GCR | 22 | 73.0 | 73.2 | 13.8 | 73.1 | 79.4 |
| PWR 100-599 MWe | 52 | 82.1 | 84.1 | 2.8 | 81.4 | 84.8 |
| PWR >= 600 MWe | 217 | 85.1 | 86.1 | 2.4 | 83.6 | 85.9 |
| BWR 100-599 MWe | 16 | 71.3 | 72.8 | 2.9 | 71.2 | 73.3 |
| BWR >= 600 MWe | 78 | 77.9 | 78.3 | 2.8 | 76.4 | 77.7 |
| FBR | 2 | 73.2 | 74.0 | 7.0 | 72.9 | 78.0 |
| LWGR<600 MWe | 4 | 38.0 | 77.7 | .0 | 28.1 | 76.3 |
| LWGR >= 600 MWe | 13 | 71.9 | 74.2 | 2.1 | 71.8 | 76.6 |
| TOTAL | 445 | 82.2 | 83.2 | 2.9 | 80.9 | 82.6 |

Note: 2005 is the latest year for which operating experience data are currently available to the IAEA.

TABLE 16. AVERAGE FULL OUTAGE STATISTICS DURING 2005

| Reactor Type | Number of Units In the World | Full Outage Hours per Operating Experience Year | % Planned Outages | % Unplanned Outages | % External Outages |
|---|---|---|---|---|---|
| PHWR < 600 MWe | 21 | 2021 | 71.7 | 23.1 | 5.2 |
| PHWR 600 MWe | 20 | 1216 | 77.4 | 22.6 | |
| GCR | 22 | 2006 | 63.4 | 36.6 | |
| PWR < 600 MWe | 52 | 1358 | 82.4 | 15.7 | 1.9 |
| PWR 600 MWe | 216 | 1187 | 79.9 | 18.4 | 1.7 |
| BWR < 600 MWe | 16 | 2297 | 58.6 | 30.8 | 10.6 |
| BWR 600 MWe | 78 | 1834 | 73.5 | 23.2 | 3.4 |
| FBR | 2 | 1783 | 100.0 | | |
| LWGR< 600 MWe | 4 | 1846 | 99.9 | 0.1 | |
| LWGR 600 MWe | 12 | 1846 | 98.0 | 1.3 | 0.7 |
| ALL REACTORS | 443 | 1469 | 77.7 | 20.0 | 2.3 |

Notes:

- 2005 is the latest year for which outage information is currently available to the IAEA;
- Reactors shut down during 2005 (2 units) are considered.

TABLE 17. CAUSES OF FULL OUTAGES DURING 2005

| Outage Cause | Planned Full Outages | | | | Unplanned Full Outages | | | |
|---|---|---|---|---|---|---|---|---|
| | Energy Loss | | Time Loss | | Energy Loss | | Time Loss | |
| | GW(e).h | % | Hours | % | GW(e).h | % | Hours | % |
| Plant equipment problem/failure | 1680 | 0.5 | 1742 | 0.4 | 77100 | 70.7 | 96940 | 67.8 |
| Refuelling without a maintenance | 11986 | 3.4 | 12460 | 2.8 | | | | |
| Inspection, maintenance or repair combined with refuelling | 296810 | 83.2 | 349553 | 77.4 | 6326 | 5.8 | 6592 | 4.6 |
| Inspection, maintenance or repair without refuelling | 37420 | 10.5 | 66039 | 14.6 | 894 | 0.8 | 1042 | 0.7 |
| Testing of plant systems or components | 2244 | 0.6 | 3015 | 0.7 | 223 | 0.2 | 547 | 0.4 |
| Major back-fitting, refurbishment or upgrading activities with refuelling | 5153 | 1.4 | 15857 | 3.5 | | | | |
| Nuclear regulatory requirements | | | | | 578 | 0.5 | 699 | 0.5 |
| Grid failure or grid unavailability | | | | | 1355 | 1.2 | 4140 | 2.9 |
| Load-following (frequency control, reserve shutdown due to reduced energy demand) | | | | | 1858 | 1.7 | 3026 | 2.1 |

TABLE 17. CAUSES OF OUTAGES DURING 2005 — continued

| Outage Cause | Planned Full Outages | | | | Unplanned Full Outages | | | |
|---|---|---|---|---|---|---|---|---|
| | Energy Loss | | Time Loss | | Energy Loss | | Time Loss | |
| | GW(e).h | % | Hours | % | GW(e).h | % | Hours | % |
| Human factor related | | | | | 2930 | 2.7 | 3407 | 2.4 |
| Governmental requirements or court decisions | 2 | 0.0 | 6 | 0.0 | | | | |
| Environmental conditions (flood, storm, lightning, lack of cooling water,cooling water temperature limits etc.) | | | | | 6107 | 5.6 | 8825 | 6.2 |
| Fire | | | | | 497 | 0.5 | 581 | 0.4 |
| External restrictions on supply and services. | | | | | 80 | 0.1 | 87 | 0.1 |
| Fuel management limitation (including high flux tilt, stretch out or coast-down operation) | | | | | 619 | 0.6 | 995 | 0.7 |
| Other | 1475 | 0.4 | 3168 | 0.7 | 10542 | 9.7 | 16015 | 11.2 |
| TOTAL | 356770 | 100.0 | 451840 | 100.0 | 109109 | 100.0 | 142896 | 100.0 |

Note: 2005 is the latest year for which outage information is currently available to the IAEA.

Only reactors which have achieved full commercial operation in or before 2005 are considered.

TABLE 18. CAUSES OF FULL OUTAGES, 1971 TO 2005

| Outage Cause | Planned Full Outages | | | | Unplanned Full Outages | | | |
|---|---|---|---|---|---|---|---|---|
| | Energy Loss | | Time Loss | | Energy Loss | | Time Loss | |
| | GW(e)·h | % | Hours | % | GW(e)·h | % | Hours | % |
| Plant equipment problem/failure | 16691 | 0.2 | 23385 | 0.2 | 3014947 | 72.1 | 4067961 | 74.1 |
| Refuelling without a maintenance | 23729 | 0.2 | 28320 | 0.2 | 79707 | 1.9 | 103215 | 1.9 |
| Inspection, maintenance or repair combined with refuelling | 8288339 | 81.4 | 10398963 | 76.3 | 73379 | 1.8 | 93613 | 1.7 |
| Inspection, maintenance or repair without refuelling | 1578134 | 15.5 | 2725301 | 20.0 | 22012 | 0.5 | 25087 | 0.5 |
| Testing of plant systems or components | 76087 | 0.7 | 97944 | 0.7 | 27695 | 0.7 | 40793 | 0.7 |
| Major back-fitting, refurbishment or upgrading activities with refuelling | 50020 | 0.5 | 81949 | 0.6 | 396 | 0.0 | 567 | 0.0 |
| Nuclear regulatory requirements | 60896 | 0.6 | 147811 | 1.1 | 299471 | 7.2 | 357610 | 6.5 |
| Grid failure or grid unavailability | 26 | 0.0 | 122 | 0.0 | 40637 | 1.0 | 91480 | 1.7 |
| Load-following (frequency control, reserve shutdown due to reduced energy demand) | 88199 | 0.9 | 111466 | 0.8 | 513269 | 12.3 | 580723 | 10.6 |

TABLE 18. CAUSES OF FULL OUTAGES, 1971 TO 2005— continued

| Outage Cause | Planned Full Outages | | | | Unplanned Full Outages | | | |
|---|---|---|---|---|---|---|---|---|
| | Energy Loss | | Time Loss | | Energy Loss | | Time Loss | |
| | GW(e)·h | % | Hours | % | GW(e)·h | % | Hours | % |
| Human factor related | 181 | 0.0 | 176 | 0.0 | 19955 | 0.5 | 24369 | 0.4 |
| Governmental requirements or court decisions | 2 | 0.0 | 6 | 0.0 | 214 | 0.0 | 279 | 0.0 |
| Environmental conditions (flood, storm, lightning, lack of cooling water,cooling water temperature limits etc.) | | | | | 13145 | 0.3 | 16404 | 0.3 |
| Fire | | | | | 2081 | 0.0 | 2427 | 0.0 |
| External restrictions on supply and services | | | | | 783 | 0.0 | 1078 | 0.0 |
| Fuel management limitation (including high flux tilt, stretch out or coast-down operation) | 545 | 0.0 | 598 | 0.0 | 997 | 0.0 | 1572 | 0.0 |
| Others | 3652 | 0.0 | 7697 | 0.1 | 71141 | 1.7 | 85739 | 1.6 |
| TOTAL | 10186501 | 100.0 | 13623738 | 100.0 | 4179829 | 100.0 | 5492917 | 100.0 |

Note: 2005 is the latest year for which outage information is currently available to the IAEA.

Only reactors which have achieved full commercial operation in or before 2005 are considered.

TABLE 19. COUNTRIES - Abbreviations and Summary

| Country Code | Full Name | Number of Reactors, as of 31 Dec. 2006 | | | |
|---|---|---|---|---|---|
| | | Operational | Construction | LT Shut Down | Shut Down |
| AM | ARMENIA | 1 | | | 1 |
| AR | ARGENTINA | 2 | 1 | | |
| BE | BELGIUM | 7 | | | 1 |
| BG | BULGARIA | 2 | 2 | | 4 |
| BR | BRAZIL | 2 | | | |
| CA | CANADA | 18 | | 4 | 3 |
| CH | SWITZERLAND | 5 | | | |
| CN | CHINA | 10 | 4 | | |
| CZ | CZECH REPUBLIC | 6 | | | |
| DE | GERMANY | 17 | | | 19 |
| ES | SPAIN | 8 | | | 2 |
| FI | FINLAND | 4 | 1 | | |
| FR | FRANCE | 59 | | | 11 |
| GB | UNITED KINGDOM | 19 | | | 26 |
| HU | HUNGARY | 4 | | | |
| IN | INDIA | 16 | 7 | | |
| IR | IRAN, ISLAMIC REPUBLIC OF | | 1 | | |
| IT | ITALY | | | | 4 |
| JP | JAPAN | 55 | 1 | 1 | 3 |
| KR | KOREA, REPUBLIC OF | 20 | 1 | | |

TABLE 19. COUNTRIES - Abbreviations and Summary — continued

| Country Code | Full Name | Number of Reactors, as of 31 Dec. 2006 | | | |
|---|---|---|---|---|---|
| | | Operational | Construction | LT Shut Down | Shut Down |
| KZ | KAZAKHSTAN | | | | 1 |
| LT | LITHUANIA, REPUBLIC OF | 1 | | | 1 |
| MX | MEXICO | 2 | | | |
| NL | NETHERLANDS | 1 | | | 1 |
| PK | PAKISTAN | 2 | 1 | | |
| RO | ROMANIA | 1 | 1 | | |
| RU | RUSSIAN FEDERATION | 31 | 5 | | 5 |
| SE | SWEDEN | 10 | | | 3 |
| SI | SLOVENIA | 1 | | | |
| SK | SLOVAK REPUBLIC | 5 | | | 2 |
| UA | UKRAINE | 15 | 2 | | 4 |
| US | UNITED STATES OF AMERICA | 103 | | 1 | 28 |
| ZA | SOUTH AFRICA | 2 | | | |
| TOTAL | | 435 | 29 | 6 | 119 |

Note: The total includes the following data in Taiwan, China:

— 6 units in operation; 2 units under construction.

TABLE 20. REACTOR TYPES - Abbreviations and Summary

| Type Code | Full Name | Number of Reactors, as of 31 Dec. 2006 | | | |
|---|---|---|---|---|---|
| | | Operational | Construction | LT Shut Down | Shut Down |
| BWR | Boiling Light-Water-Cooled and Moderated Reactor | 93 | 2 | 1 | 21 |
| FBR | Fast Breeder Reactor | 2 | 2 | 1 | 6 |
| GCR | Gas-Cooled, Graphite-Moderated Reactor | 18 | | | 34 |
| HTGR | High-Temperature Gas-Cooled, Graphite-Moderated Reactor | | | | 4 |
| HWGCR | Heavy-Water-Moderated, Gas-Cooled Reactor | | | | 3 |
| HWLWR | Heavy-Water-Moderated, Boiling Light-Water-Cooled Reactor | | | | 2 |
| LWGR | Light-Water-Cooled, Graphite-Moderated Reactor | 16 | 1 | | 8 |
| PHWR | Pressurized Heavy-Water-Moderated and Cooled Reactor | 42 | 6 | 4 | 5 |
| PWR | Pressurized Light-Water-Moderated and Cooled Reactor | 264 | 18 | | 33 |
| SGHWR | Steam-Generating Heavy-Water Reactor | | | | 1 |
| X | Others | | | | 2 |
| TOTAL | | 435 | 29 | 6 | 119 |

TABLE 21. OPERATORS - Abbreviations and Summary

| Operator Code | Full Name | Number of Reactors, as of 31 Dec. 2006 | | | |
|---|---|---|---|---|---|
| | | Operational | Construction | LT Shut Down | Shut Down |
| AEC/NPPD | HALLAM NUCLEAR POWER FACILITY | | | | 1 |
| AEOI | ATOMIC ENERGY ORGANIZATION OF IRAN | | 1 | | |
| ALP | ALABAMA POWER CO. | 2 | | | |
| AMERGEN | AMERGEN ENERGY CO. | 1 | | | |
| AMERGENE | AMERGEN ENERGY GENERATING CO. | 3 | | | |
| ANAV | ASOCIACION NUCLEAR ASCO-VANDELLOS A.I.E. (ENDESA/ID) | 3 | | | |
| ANPPJSC | JOINT STOCK COMPANY ARMENIAN NPP | 1 | | | 1 |
| AVR | ARBEITSGEMEINSCHAFT VERSUCHSREAKTOR GMBH | | | | 1 |
| AZPSCO | ARIZONA PUBLIC SERVICE CO. | 3 | | | |
| BE | BRITISH ENERGY | 15 | | | |
| BHAVINI | BHARATIYA NABHIKIYA VIDYUT NIGAM LIMITED | | 1 | | |
| BKAB | BARSEBECK KRAFT AB | | | | 2 |
| BKW | BKW ENERGIE AG | 1 | | | |
| BNFL | BRITISH NUCLEAR FUELS LIMITED | 4 | | | 22 |
| BRUCEPOW | BRUCE POWER | 6 | | 2 | |
| BV GKN | BV GEMEENSCHAPPELIJKE KERNENERGIECENTRALE NEDERLAND (BV GKN) | | | | 1 |
| CCNPP | CALVERT CLIFFS NUCLEAR POWER PLANT INC. | 3 | | | |
| CEA/EDF | COMMISSARIAT A L'ENERGIE ATOMIQUE / ELECTRICITE DE FRANCE | 1 | | | |
| CEN/SCK | CENTRE D'ETUDE DE L'ENERGIE NUCLEAIRE / STUDIECENTRUM VOOR KERNENERGIE | | | | 1 |
| CEZ | CZECH POWER COMPANY , CEZ A.S. | 6 | | | |
| CFE | COMISION FEDERAL DE ELECTRICIDAD | 2 | | | |

TABLE 21. OPERATORS - Abbreviations and Summary — continued

| Operator Code | Full Name | Number of Reactors, as of 31 Dec. 2006 | | | |
|---|---|---|---|---|---|
| | | Operational | Construction | LT Shut Down | Shut Down |
| CHUBU | CHUBU ELECTRIC POWER CO.,INC. | 5 | | | |
| CHUGOKU | THE CHUGOKU ELECTRIC POWER CO,INC. | 2 | | | |
| CNAT | CENTRALES NUCLEARES ALMARAZ-TRILLO(ID/UFG/ENDESA/HC/NUCLENOR ) | 3 | | | |
| CofPiqua | CITY OF PIQUA GOVERNMENT | | | | 1 |
| COGEMA | COMPAGNIE GENERALE DES MATIERES NUCLEAIRES | | | | 2 |
| CONSENEC | CONSUMERS ENERGY CO. | 1 | | | |
| CPC | CONSUMERS POWER CO. | | | | 1 |
| CVPA | CAROLINAS-VIRGINIA NUCLEAR POWER ASSOC. | | | | 1 |
| CYAPC | CONNECTICUT YANKEE ATOMIC POWER CO. | | | | 1 |
| DETED | DETROIT EDISON CO. | 1 | | | 1 |
| DOE DUQU | DEPARTMENT OF ENERGY AND DUQUESNE LIGHT CO. | | | | 1 |
| DOE/PRWR | DOE & PUERTO RICO WATER RESOURCES | | | | 1 |
| DOMENGY | DOMINION ENERGY KEWAUNEE | 1 | | | |
| DOMIN | DOMINION VIRGINIA POWER | 2 | | | 1 |
| DPC | DAIRYLAND POWER COOPERATIVE | | | | 1 |
| DUKE | DUKE POWER CO. | 7 | | | |
| E.ON | E.ON KERNKRAFT GMBH | 5 | | | 1 |
| EDF | ELECTRICITE DE FRANCE | 58 | | | 7 |
| ELECTRAB | ELECTRABEL M. V. NUCLEAIRE PRODUKTIE | 7 | | | |
| ELETRONU | ELETROBRAS TERMONUCLEAR SA - ELETRONUCLEAR | 2 | | | |
| EnBW | ENBW KRAFTWERKE AG | | | | 1 |

TABLE 21. OPERATORS - Abbreviations and Summary — continued

| Operator Code | Full Name | Number of Reactors, as of 31 Dec. 2006 | | | |
|---|---|---|---|---|---|
| | | Operational | Construction | LT Shut Down | Shut Down |
| ENERGYNW | ENERGY NORTWEST | 1 | | | |
| EnKK | ENBW KERNKRAFT GMBH(SITZ IN OBRIGHEIM) | 4 | | | |
| ENTERGY | ENTERGY NUCLEAR | 8 | | | 1 |
| ENTGS | ENTERGY GULF STATES INC. | 1 | | | |
| ENTGYARK | ENTERGY ARKANSAS, INC. | 1 | | | |
| EPZ | N.V. ELEKTRICITEITS-PRODUKTIEMAATSCHAPPIJ ZUID-NEDERLAND | 1 | | | |
| ESKOM | ESKOM | 2 | | | |
| EWN | ENERGIEWERKE NORD GMBH | | | | 6 |
| EXELON | EXELON GENERATION | 14 | | | 4 |
| FENOC | FIRST ENERGY NUCLEAR OPERATING CO. | 4 | | | |
| FKA | FORSMARK KRAFTGRUPP AB | 3 | | | |
| FORTUMPH | FORTUM POWER AND HEAT OY (FORMER IVO) | 2 | | | |
| FPL | FLORIDA POWER & LIGHT CO. | 5 | | | |
| FPLDUANE | FPL ENERGY DUANE ARNOLD | 1 | | | |
| GE | GENERAL ELECTRIC | | | | 1 |
| GNPJVC | GUANDONG NUCLEAR POWER JOINT VENTURE COMPANY LIMITED(GNPJVC) | 2 | | | |
| GPU | GENERAL PUBLIC UTILITIES | | | | 1 |
| HDR | HEISSDAMPFREAKTOR-BETRIEBSGESELLSCHAFT MBH. | | | | 1 |
| HEPCO | HOKKAIDO ELECTRIC POWER CO.,INC. | 2 | 1 | | |
| HIFRENSA | HISPANO-FRANCESA DE ENERGIA NUCLEAR, S.A. | | | | 1 |
| HKG | HOCHTEMPERATUR-KERNKRAFTWERK GMBH | | | | 1 |

TABLE 21. OPERATORS - Abbreviations and Summary — continued

| Operator Code | Full Name | Number of Reactors, as of 31 Dec. 2006 | | | |
|---|---|---|---|---|---|
| | | Operational | Construction | LT Shut Down | Shut Down |
| HOKURIKU | HOKURIKU ELECTRIC POWER CO. | 2 | | | |
| HQ | HYDRO QUEBEC | 1 | | | 1 |
| ID | IBERDROLA, S.A. | 1 | | | |
| IMPCO | INDIANA MICHIGAN POWER CO. | 2 | | | |
| INPP | IGNALINA NUCLEAR POWER PLANT | 1 | | | 1 |
| JAEA | JAPAN ATOMIC ENERGY AGENCY | | | 1 | 2 |
| JAPCO | JAPAN ATOMIC POWER CO. | 3 | | | 1 |
| JAVYS | JADROVA VYRADOVACIA SPOLOCNOST/NUCLEAR DECOMMISSIONING COMPANY, PLC./ | 1 | | | 2 |
| JNPC | JIANGSU NUCLEAR POWER CORPORATION | 1 | 1 | | |
| KBG | KERNKRAFTWERK-BETRIEBSGESELLSCHAFT MBH | | | | 2 |
| KEPCO | KANSAI ELECTRIC POWER CO. | 11 | | | |
| KGB | KERNKRAFTWERKE GUNDREMMINGEN BETRIEBSGESELLSCHAFT MBH | | | | 1 |
| KGECO | KANSAS GAS ANE ELECTRIC CO. | 1 | | | |
| KGG | KERNKRAFTWERK GUNDREMMINGEN GMBH | 2 | | | 1 |
| KHNP | KOREA HYDRO AND NUCLEAR POWER CO. | 20 | 1 | | |
| KKB | KERNKRAFTWERK BRUNSBÜTTEL GMBH | 1 | | | |
| KKG | KERNKRAFTWERK GOESGEN-DAENIKEN AG | 1 | | | |
| KKK | KERNKRAFTWERK KRUMMEL GMBH & CO. OHG | 1 | | | |
| KKL | KERNKRAFTWERK LEIBSTADT | 1 | | | |
| KKN | KERNKRAFTWERK NIEDERAICHBACH GMBH | | | | 1 |
| KLE | KERNKRAFTWERKE LIPPE-EMS GMBH | 1 | | | |

TABLE 21. OPERATORS - Abbreviations and Summary — continued

| Operator Code | Full Name | Number of Reactors, as of 31 Dec. 2006 | | | |
|---|---|---|---|---|---|
| | | Operational | Construction | LT Shut Down | Shut Down |
| KOZNPP | KOZLODUY NPP-PLC | 2 | 2 | | 4 |
| KWG | GEMEINSCHAFTSKERNKRAFTWERK GROHNDE GMBH & CO. OHG | 1 | | | |
| KWL | KERNKRAFTWERK LINGEN GMBH | | | | 1 |
| KYUSHU | KYUSHU ELECTRIC POWER CO.,INC. | 6 | | | |
| LANPC | LINGAO NUCLEAR POWER COMPANY LTD. | 2 | | | |
| LDNPC | LINGDONG NUCLEAR POWER COMPANY LTD. | | 2 | | |
| LIPA | LONG ISLAND POWER AUTHORITY | | | | 1 |
| MAEC-KAZ | MAEC-KAZATOMPROM, LIMITED LIABILITY COMPANY | | | | 1 |
| MTE | MINTOPENERGO OF UKRAINE - MINISTRY OF FUEL AND ENERGY OF UKRAINE | | | | 4 |
| MYAPC | MAINE YANKEE ATOMIC POWER CO. | | | | 1 |
| NASA | NUCLEOELECTRICA ARGENTINA S.A. | 2 | 1 | | |
| NBEPC | NEW BRUNSWICK ELECTRIC POWER COMMISSION | 1 | | | |
| NEK | NUKLEARNA ELEKTRARNA KRSKO | 1 | | | |
| NERSA | CENTRALE NUCLEAIRE EUROPEENE A NEUTRONS RAPIDES S.A. | | | | 1 |
| NMPNSLLC | NINE MILE POINT NUCLEAR STATION, LLC | 2 | | | |
| NNEGC | NATIONAL NUCLEAR ENERGY GENERATING COMPANY <ENERGOATOM> | 15 | 2 | | |
| NOK | NORDOSTSCHWEIZERISCHE KRAFTWERKE | 2 | | | |
| NORTHERN | NORTHERN STATES POWER CO. | 2 | | | |
| NPCIL | NUCLEAR POWER CORPORATION OF INDIA LTD. | 16 | 6 | | |
| NPPD | NEBRASKA PUBLIC POWER DISTRICT | 1 | | | |
| NPQJVC | NUCLEAR POWER PLANT QINSHAN JOINT VENTURE COMPANY LTD. | 2 | 1 | | |

TABLE 21. OPERATORS - Abbreviations and Summary — continued

| Operator Code | Full Name | Number of Reactors, as of 31 Dec. 2006 | | | |
|---|---|---|---|---|---|
| | | Operational | Construction | LT Shut Down | Shut Down |
| NUCLENOR | NUCLENOR, S.A. | 1 | | | |
| NUCMAN | NUCLEAR MANAGEMENT CO. | 1 | | | 1 |
| OH | ONTARIO HYDRO | | | | 1 |
| OKG | OKG AKTIEBOLAG | 3 | | | |
| OPG | ONTARIO POWER GENERATION | 10 | | 2 | 1 |
| OPPD | OMAHA PUBLIC POWER DISTRICT | 1 | | | |
| PAEC | PAKISTAN ATOMIC ENERGY COMMISSION | 2 | 1 | | |
| PAKS RT. | PAKS NUCLEAR POWER PLANT LTD | 4 | | | |
| PE | PREUSSENELEKTRA KERNKRAFT GMBH&CO KG | | | | 1 |
| PGE | PACIFIC GAS & ELECTRIC CO. | 2 | | | 1 |
| PORTGE | PORTLAND GENERAL ELECTRIC CO. | | | | 1 |
| PP&L | PENNSYLVANIA POWER & LIGHT CO. | 2 | | | |
| PROGENGC | PROGRESS ENERGY CAROLINAS, INC. | 3 | | | |
| PROGRESS | PROGRESS ENERGY CORPORATION | 2 | | | |
| PSCC | PUBLIC SERVICE CO. OF COLORADO | | | | 1 |
| PSEG | PUBLIC SERVICE ELECTRIC & GAS CO. | 1 | | | |
| PSEGPOWR | PSEG POWER, INC. | 2 | | | |
| QNPC | QINSHAN NUCLEAR POWER COMPANY | 1 | | | |
| RAB | RINGHALS AB | 4 | | | |
| RCPA | RURAL COOPERATIVE POWER ASSOC. | | | | 1 |
| REA | ROSENERGOATOM, CONSORTIUM | 31 | 5 | | 5 |

TABLE 21. OPERATORS - Abbreviations and Summary — continued

| Operator Code | Full Name | Number of Reactors, as of 31 Dec. 2006 | | | |
|---|---|---|---|---|---|
| | | Operational | Construction | LT Shut Down | Shut Down |
| RWE | RWE POWER AG | 2 | | | |
| SCE | SOUTHERN CALIFORNIA EDISON | 2 | | | 1 |
| SCEG | SOUTH CAROLINA ELECTRIC & GAS CO. | 1 | | | |
| SE,plc | SLOVENSKÉ ELEKTRÁRNE, A.S. | 4 | | | |
| SENA | SOCIETE D'ENERGIE NUCLEAIRE FRANCO-BELGE DES ARDENNES | | | | 1 |
| SHIKOKU | SHIKOKU ELECTRIC POWER CO.,INC | 3 | | | |
| SMUD | SACRAMENTO MUNICIPAL UTILITY DISTRICT | | | | 1 |
| SNEC | SAXTON NUCLEAR EXPIRAMENTAL REACTOR CORPORATION | | | | 1 |
| SNN | SOCIETATEA NATIONALA NUCLEARELECTRICA S.A. | 1 | 1 | | |
| SOGIN | SOCIETA GESTIONE IMPANTI NUCLEARI | | | | 4 |
| SOUTH | SOUTHERN NUCLEAR OPERATING CO. | 4 | | | |
| STP | STP NUCLEAR OPERATING CO. | 2 | | | |
| TEPCO | TOKYO ELECTRIC POWER CO.,INC. | 17 | | | |
| TOHOKU | TOHOKU ELECTRIC POWER CO.,INC | 4 | | | |
| TPC | TAI POWER CO. | 6 | 2 | | |
| TQNPC | THE THIRD QINSHAN JOINTED VENTURE COMPANY LTDA. | 2 | | | |
| TVA | TENNESSEE VALLEY AUTHORITY | 5 | | 1 | 1 |
| TVO | TEOLLISUUDEN VOIMA OY | 2 | 1 | | |
| TXU | TXU ELECTRIC CO. | 2 | | | |
| UFG | UNION FENOSA GENERATION S.A. | | | | 1 |
| UKAEA | UNITED KINGDOM ATOMIC ENERGY AUTHORITY | | | | 4 |

TABLE 22. NSSS SUPPLIERS - Abbreviations and Summary

| NSSS Supplier Code | Full Name | Number of Reactors, as of 31 Dec. 2006 | | | |
|---|---|---|---|---|---|
| | | Operational | Construction | LT Shut Down | Shut Down |
| A/F/W | ASSOCIATION ACEC,FRAMATOME ET WESTINGHOUSE. | | | | 1 |
| ABBATOM | ABBATOM (FORMERLY ASEA-ATOM) | 7 | | | 2 |
| AC | ALLIS CHALMERS | | | | 3 |
| ACECOWEN | ACECOWEN ( ACEC-COCKERILL-WESTINGHOUSE ) | 4 | | | |
| ACLF | (ACECOWEN - CREUSOT LOIRE - FRAMATOME) | 1 | | | |
| AECL | ATOMIC ENERGY OF CANADA LTD. | 7 | 1 | | 2 |
| AECL/DAE | ATOMIC ENERGY OF CANADA LTDA AND DEPARTMENT OF ATOMIC ENERGY(INDIA) | 1 | | | |
| AECL/DHI | ATOMIC ENERGY OF CANADA LTD./DOOSAN HEAVY INDUSTRY & CONSTRUCTION | 3 | | | |
| AEE | ATOMENERGOEXPORT | 9 | | | 5 |
| AEE&ZAES | FOREIGN ECONOMIC PUBLIC LIMITED CO. ATOMENERGOEXPORT, RUSSIA&RUSSIA PRODUCTION ASSOCIATION ZARUBEZHATOMENERGOSTROY | 1 | 1 | | |
| AEG | ALLGEMEINE ELEKTRICITAETS-GESELLSCHAFT | | | | 1 |
| AEG,GE | ALLGEMEINE ELECTRICITAETS-GESELLSCHAFT, GENERAL ELECTRIC COMPANY (US) | | | | 1 |
| AEG,KWU | ALLGEMEINE ELEKTRICITAETS GESELLSCHAFT, KRAFTWERK UNION AG | | | | 2 |
| AMN/GETS | ANSALDO MECCANICO NUCLEARE SPA / GENERAL ELECTRIC TECHNICAL SERVICES CO | | | | 1 |
| APC | ATOMIC POWER CONSTRUCTION LTD. | 2 | | | 2 |
| AREVA | AREVA, 27-29, RUE LE PELETIER, 75433 PARIS CEDEX 09URL: WWW.AREVA.COM | | 1 | | |
| ASE | ATOMSTROYEXPORT | | 3 | | |
| ASEASTAL | ASEA-ATOM / STAL-LAVAL | 2 | | | 1 |
| ASPALDO | ASPALDO | | | | 1 |

TABLE 22. NSSS SUPPLIERS - Abbreviations and Summary — continued

| NSSS Supplier Code | Full Name | Number of Reactors, as of 31 Dec. 2006 | | | |
|---|---|---|---|---|---|
| | | Operational | Construction | LT Shut Down | Shut Down |
| AtEE | ATOMENERGOEXPORT | | | | 6 |
| B&W | BABCOCK & WILCOX CO. | 7 | | | 3 |
| BBC | BROWN BOVERI ET CIE | 1 | | | |
| BBK | BROWN BOVERI-KRUPP REAKTORBAU GMBH | | | | 1 |
| BBR | BROWN BOVERI REAKTOR GMBH | | | | 1 |
| CE | COMBUSTION ENGINEERING CO. | 14 | | | 1 |
| CEA | COMMISSARIAT A L'ENERGIE ATOMIQUE | | | | 1 |
| CGE | CANADIAN GENERAL ELECTRIC | 1 | | | 1 |
| CNCLNEY | CNIM-CONSTRUCTIONS NAVALES ET INDUSTRIELLES DE MEDITERRANEE CL - CREUSOT LOIRE , NEY - NEYRPIC | 1 | | | |
| CNNC | CHINA NATIONAL NUCLEAR CORPORATION | 4 | 2 | | |
| DFEC | DONGFANG ELECTRIC CORPORATION | | 2 | | |
| DHICKAEC | DOOSAN HEAVY INDUSTRIES & CONSTRUCTION CO.LTD./KOREA ATOMICENERGY RESEARCH INSTITUTE/COMBUSTIONENGINEERING | 2 | | | |
| DHICKOPC | DOOSAN HEAVY INDUSTRIES & CONSTRUCTION CO.LTD./KOREA POWER ENGINEERING COMPANY/COMBUSTIONENGINEERING | 6 | 1 | | |
| EE/B&W/T | THE ENGLISH ELECTRIC CO. LTD / BABCOCK & WILCOX CO. / TAYLOR WOODROW CONSTRUCTION LTD. | 2 | | | 4 |
| FAEA | FEDERAL ATOMIC ENERGY AGENCY | 32 | 2 | | 9 |
| FRAM | FRAMATOME | 64 | | | |
| FRAMACEC | FRAMACECO ( FRAMATOME-ACEC-COCKERILL ) | 2 | | | |
| GA | GENERAL ATOMIC CORP. | | | | 2 |

TABLE 22. NSSS SUPPLIERS - Abbreviations and Summary — continued

| NSSS Supplier Code | Full Name | Number of Reactors, as of 31 Dec. 2006 | | | |
|---|---|---|---|---|---|
| | | Operational | Construction | LT Shut Down | Shut Down |
| GAAA | GROUPEMENT ATOMIQUE ALSACIENNE ATLANTIQUE | | | | 1 |
| GE | GENERAL ELECTRIC CO. | 46 | 2 | 1 | 11 |
| GE.AEG | GENERAL ELECTRIC COMPANY (US), ALLGEMEINE ELEKTRICITAETS- GESELLSCHAFT | | | | 1 |
| GE/GETSC | GENERAL ELECTRIC CO. / GENERAL ELECTRIC TECHNICAL SERVICES CO. | 1 | | | |
| GE/T | GENERAL ELECTRIC CO. / TOSHIBA CORPORATION | 2 | | | |
| GEC | GENERAL ELECTRIC COMPANY (UK) | 2 | | | 3 |
| GETSCO | GENERAL ELECTRIC TECHNICAL SERVICES CO. | 2 | | | |
| GNEPRWRA | GENERAL NUCLEAR ENGINEERING & PUERTO RICO WATER RESOURCES AUTHORITY (US) | | | | 1 |
| GTM | GRANDS TRAVAUX DE MARSEILLE | | | | 1 |
| HITACHI | HITACHI LTD. | 10 | | | 1 |
| HRB | HOCHTEMPERATUR-REAKTORBAU GMBH | | | | 1 |
| IA | INTERATOM INTERNATIONALE ATOMREAKTORBAU GMBH | | | | 1 |
| ICL/FE | INTERNATIONAL COMBUSTION LTD. / FAIREY ENGINEERING LTD. | | | | 1 |
| KWU | SIEMENS KRAFTWERK UNION AG | 18 | | | 1 |
| LEVIVIER | LEVIVIER | | | | 2 |
| MAEC | MAEC-KAZATOMPROMMANGISHLAK ATOMIC ENERGY COMPLEX | | | | 1 |
| MAEP | MINATOMENERGOPROM, MINISTRY OF NUCLEAR POWER AND INDUSTRY | 1 | 2 | | 1 |
| MHI | MITSUBISHI HEAVY INDUSTRIES LTD. | 18 | 1 | | |
| NEI.P | NEI PARSONS | 2 | | | |
| NNC | NATIONAL NUCLEAR CORPORATION | 2 | | | |
| NPC | NUCLEAR POWER CO. LTD. | 6 | | | |

TABLE 22. NSSS SUPPLIERS - Abbreviations and Summary — continued

| NSSS Supplier Code | Full Name | Number of Reactors, as of 31 Dec. 2006 | | | |
|---|---|---|---|---|---|
| | | Operational | Construction | LT Shut Down | Shut Down |
| NPCIL | NUCLEAR POWER CORPORATION OF INDIA LTD.VIKRAM SARABHAI BHAVAN, ANUSHAKTI NAGAR, MUMBAI - 400 094. | 12 | 4 | | |
| OH/AECL | ONTARIO HYDRO / ATOMIC ENERGY OF CANADA LTD. | 14 | | 4 | |
| PAA | PRODUCTION AMALGAMATION 'ATOMMASH', VOLGODONSK | 4 | | | |
| PAIP | PRODUCTION AMALGAMATION IZHORSKY PLANT ATOMMASH,VOLGODONSK,RUSSIA | 11 | | | |
| PPC | PWR POWER PROJECTS | 1 | | | |
| RDM | ROTTERDAMSE DROOGDOK MAATSCHAPPIJ (RDM) IN ROTTERDAM (NL) | | | | 1 |
| S/KWU | SIEMENS/KRAFTWERK UNION AG | 1 | | | |
| SACM | SOCIETE ALSACIENNE DE CONSTRUCTIONS MECANIQUES | | | | 2 |
| SIEM,KWU | SIEMENS AG, KRAFTWERK UNION AG | 2 | | | 2 |
| SIEMENS | SIEMENS AG, POWER GENERATION,91058 ERLANGEN, GERMANY,WWW.POWERGENERTION.SIEMENS.COM | 1 | 1 | | 1 |
| SKODA | SKODA CONCERN NUCLEAR POWER PLANT WORKS | 10 | | | 1 |
| T/H/F/M | TOSHIBA / HITACHI / FUJI ELECTRIC HOLDINGS / MITSUBISHI HEAVY INDUSTRIES | | | 1 | |
| TNPG | THE NUCLEAR POWER GROUP LTD. | 6 | | | 8 |
| TOSHIBA | TOSHIBA CORPORATION | 17 | | | |
| UEC | UNITED ENGINEERS AND CONTRACTORS | | | | 1 |
| UKAEA | UNITED KINGDOM ATOMIC ENERGY AUTHORITY | | | | 9 |
| VARIOUS | VARIOUS | | | | 4 |
| WH | WESTINGHOUSE ELECTRIC CORPORATION AND SIEMENS | 72 | | | 11 |
| WH/MHI | WESTINGHOUSE ELECTRIC CORPORATION / MITSUBISHI HEAVY INDUSTRIES LTD. | 1 | | | |
| not specified | | | 6 | | 1 |
| TOTAL | | 435 | 29 | 6 | 119 |

TABLE 23. REACTORS IN DECOMMISSIONING PROCESS OR DECOMMISSIONED, 31 Dec.2006

| Country | Reactor | | Shut down | Shutdown reason | Decom. Strategy | Current decom. Phase | Current Fuel managemt phase | Decom. Licensee | License terminate |
|---|---|---|---|---|---|---|---|---|---|
| | Code | Name | | | | | | | |
| ARMENIA | AM -18 | ARMENIA-1 | 1989-2 | Others | Other | | | ANPPJSC | |
| BELGIUM | BE -1 | BR-3 | 1987-6 | 2, 5 | Imdte.dism. | 4, 9 | 4 | CEN/SCK | |
| BULGARIA | BG -1 | KOZLODUY-1 | 2002-12 | Others | Dd+SE | 5 | 6 | | |
| | BG -2 | KOZLODUY-2 | 2002-12 | Others | Dd+SE | 5 | 6 | | |
| FRANCE | FR -9 | BUGEY-1 | 1994-5 | 1, 2 | Imdte.dism. | 6 | | EDF | 2020 |
| | FR -2 | CHINON-A1 | 1973-4 | 1, 2 | Imdte.dism. | | | EDF | |
| | FR -3 | CHINON-A2 | 1985-6 | 1, 2 | Imdte.dism. | 1 | | EDF | 2025 |
| | FR -4 | CHINON-A3 | 1990-6 | 1, 2 | Imdte.dism. | | | EDF | |
| | FR -5 | CHOOZ-A(ARDENNES) | 1991-10 | Others | Imdte.dism. | 4, 9 | | SENA | 2019 |
| | FR -6 | EL-4 (MONTS D'ARREE) | 1985-7 | 1, 2 | Imdte.dism. | 6, 9 | | EDF | 2015 |
| | FR -7 | ST. LAURENT-A1 | 1990-4 | 1, 2 | Imdte.dism. | | | EDF | 2027 |
| | FR -8 | ST. LAURENT-A2 | 1992-5 | 1, 2 | Imdte.dism. | | | EDF | 2025 |
| | FR -24 | SUPER*-PHENIX | 1998-12 | Others | Imdte.dism. | 6 | 3, 6 | NERSA | |
| GERMANY | DE -4 | AVR JUELICH (AVR) | 1988-12 | 1 | Imdte.dism. | | | | |
| | DE -502 | GREIFSWALD-1(KGR 1) | 1990-2 | 5 | Imdte.dism. | | | EWN | |
| | DE -10 | STADE (KKS) | 2003-11 | 2 | Imdte.dism. | 3, 4, 6 | | | 2014 |
| | DE -9 | WUERGASSEN (KWW) | 1994-8 | 2 | Imdte.dism. | 3, 4 | | | |
| ITALY | IT -4 | CAORSO | 1990-7 | 7, Others | Imdte.dism. | 6 | 3, 7 | SOGIN | 2016 |
| | IT -2 | GARIGLIANO | 1982-3 | 3, 4, Others | Imdte.dism. | 6 | | SOGIN | 2015 |
| | IT -3 | ENRICO FERMI (TRINO) | 1990-7 | 7, Others | Imdte.dism. | 6 | 3, 7 | SOGIN | 2014 |

TABLE 23. REACTORS IN DECOMMISSIONING PROCESS OR DECOMMISSIONED, 31 Dec.2006 — continued

| Country | Reactor | | Shut down | Shutdown reason | Decom. Strategy | Current decom. Phase | Current Fuel managemt phase | Decom. Licensee | License terminate |
|---|---|---|---|---|---|---|---|---|---|
| | Code | Name | | | | | | | |
| ITALY | IT -1 | LATINA | 1987-12 | 7, Others | Imdte.dism. | 6 | | SOGIN | 2020 |
| JAPAN | JP -1 | JPDR | 1976-3 | Others | Imdte.dism. | | | JAERI | 2002 |
| | JP -2 | TOKAI-1 | 1998-3 | 2 | Dd+PD+SE | 3, 6, 7 | | JAPCO | 2018 |
| | JP -20 | FUGEN ATR | 2003-3 | 2 | Dd+SE | | | MINATOM | |
| KAZAKHSTAN | KZ -10 | BN-350 | 1999-4 | 2, 5 | Dd+PD+SE | 1, 5, 6 | 3, 6 | MAEC-KAZ | |
| LITHUANIA | LT -46 | IGNALINA-1 | 2004-12 | Others | Imdte.dism. | 2 | 1, 2 | INPP | 2105 |
| NETHERLANDS | NL -1 | DODEWAARD | 1997-3 | 2, Others | Dd+SE | 7 | | BV GKN | 2050 |
| SLOVAKIA | SK -1 | BOHUNICE A1 | 1977-2 | 4 | Dd+PD+SE | 3, 4, 5, 6 | | JAVYS | |
| SPAIN | ES -1 | JOSE CABRERA-1(ZORITA) | 2006-4 | Others | Imdte.dism. | 2, 3, 4 | | UFG | |
| SWEDEN | SE -1 | AGESTA | 1974-6 | 2, 3 | Dd+SE | 7 | | VAB | |
| | SE -6 | BARSEBACK-1 | 1999-11 | 7 | Dd+SE | | | VAB | |
| | SE -8 | BARSEBACK-2 | 2005-5 | Others | Other | | | BKAB | |
| USA | US -155 | BIG ROCK POINT | 1997-8 | 2 | Imdte.dism. | | | CPC | 2005 |
| | US -014 | BONUS | 1968-6 | 5, 6 | in situ disp. | | | DOE/PRWR | |
| | US -144 | CVTR | 1967-1 | 7 | Dd+SE | | 2 | CVPA | |
| | US -10 | DRESDEN-1 | 1978-10 | 6 | Dd+SE | 3, 5 | 3 | EXELON | |
| | US -011 | ELK RIVER | 1968-2 | 1 | Imdte.dism. | | | RCPA | |
| | US -16 | ENRICO FERMI-1 | 1972-11 | 4 | Dd+SE | 9 | | DETED | |
| | US -267 | FORT ST. VRAIN | 1989-8 | 1 | Imdte.dism. | | | PSCC | |

TABLE 23. REACTORS IN DECOMMISSIONING PROCESS OR DECOMMISSIONED, 31 Dec.2006 — continued

| Country | Reactor | | Shut down | Shutdown reason | Decom. Strategy | Current decom. Phase | Current Fuel managemt phase | Decom. Licensee | License terminate |
|---|---|---|---|---|---|---|---|---|---|
| | Code | Name | | | | | | | |
| USA | US -267 | FORT ST. VRAIN | 1989-8 | 1 | Imdte.dism. | | | PSCC | |
| | US -018 | GE VALLECITOS | 1963-12 | 1 | Dd+SE | | | GE&PGEC | |
| | US -213 | HADDAM NECK | 1996-12 | 6 | Imdte.dism. | 4, 5, 6 | 2, 3 | CYAPC | |
| | US -077 | HALLAM | 1964-9 | 5 | Dd+SE | | | AEC&NPPD | 1971 |
| | US -133 | HUMBOLDT BAY | 1976-7 | 5 | Dd+PD+SE | 3, 4, 6 | 7 | PGE | 2005 |
| | US -013 | INDIAN POINT-1 | 1974-10 | 5 | Dd+PD+SE | | | ENTERGY | |
| | US -409 | LACROSSE | 1987-4 | 2 | Dd+PD+SE | 6 | 3, 6 | DPC | |
| | US -309 | MAINE YANKEE | 1997-8 | 6 | Imdte.dism. | 4, 11 | | MYAPC | |
| | US -245 | MILLSTONE-1 | 1998-7 | 6 | Dd+PD+SE | | 3, 6, 7 | DOMIN | |
| | US -130 | PATHFINDER | 1967-10 | 1 | Dd+SE | | | NUCMAN | 2004 |
| | US -171 | PEACH BOTTOM-1 | 1974-11 | 1 | Dd+SE | 1 | 2 | EXELON | |
| | US -012 | PIQUA | 1966-1 | 1 | in situ disp. | 11 | | CofPiqua | |
| | US -312 | RANCHO SECO-1 | 1989-6 | 5, 6 | Dd+PD+SE | | | SMUD | 2008 |
| | US -206 | SAN ONOFRE-1 | 1992-11 | Others | Dd+PD+SE | 4, 9 | 2, 3 | SCE | |
| | US -146 | SAXTON | 1972-5 | Others | Imdte.dism. | | | GPUNC | 2003 |
| | US -001 | SHIPPINGPORT | 1982-10 | 3 | Imdte.dism. | | | DOE DUQU | 1989 |
| | US -322 | SHOREHAM | 1989-5 | 7, Others | Imdte.dism. | | | LIPA | 1995 |
| | US -320 | THREE MILE ISLAND-2 | 1979-3 | 4 | Dd+SE | 11 | 4 | GPU | |
| | US -344 | TROJAN | 1992-11 | 6 | Dd+PD+SE | 11 | 3 | PORTGE | 2011 |
| | US -029 | YANKEE NPS | 1991-10 | 5, 7 | Imdte.dism. | 4, 6 | | YAEC | |
| | US -295 | ZION-1 | 1998-1 | 5, 6 | Dd+PD+SE | 1 | | CommonEd | |
| | US -304 | ZION-2 | 1998-1 | 5, 6 | Dd+PD+SE | 1 | | COMMED | 2000 |

DEFINITIONS FOR THE TABLE 23

| Shutdown reason | Description |
|---|---|
| 1 | The technology or process became obsolete |
| 2 | The process was no longer profitable |
| 3 | There were changes in licensing requirements |
| 4 | After an operating incident. |
| 5 | Other technological reasons |
| 6 | Other economical reasons |
| 7 | Public acceptance reasons |
| Other | Other shutdown reasons |

| Fuel Management | Description |
|---|---|
| 1 | Transfer to at reactor facility |
| 2 | Transfer to away from reactor facility |
| 3 | Storage in an on-site facility |
| 4 | Storage in an off-site facility |
| 5 | Shipment to a reprocessing plant |
| 6 | Under water storage |
| 7 | Dry storage |
| 8 | Encapsulation |

| Decommissioning strategy | Description |
|---|---|
| Imdte.dism. | Immediate dismantling and removal of all radioactive materials |
| Dd+SE | Deferred dismantling, placing all radiological areas into safe enclosure |
| Dd+PD+SE | Deferred dismantling with partial dismantling and remaining radiological areas in safe enclosure |
| In situ disp. | In situ disposal, involving encapsulation of radioactive materials and restriction of access |
| Other | Other decommissioning strategy |

| Current decommissioning phase | Description |
|---|---|
| 1 | Drawing up the Final Decommissioning Plan |
| 2 | Reactor core defuelling |
| 3 | Waste conditioning on site (Only for Decommissioning waste) |
| 4 | Waste shipment off site (Only for Decommissioning waste) |
| 5 | Safe enclosure preparation |
| 6 | Partial dismantling |
| 7 | Active safe enclosure period |
| 8 | Passive safe enclosure period |
| 9 | Final dismantling |
| 10 | Final survey |
| 11 | Licence terminated (Legal act at the end of the Decommissioning process) |

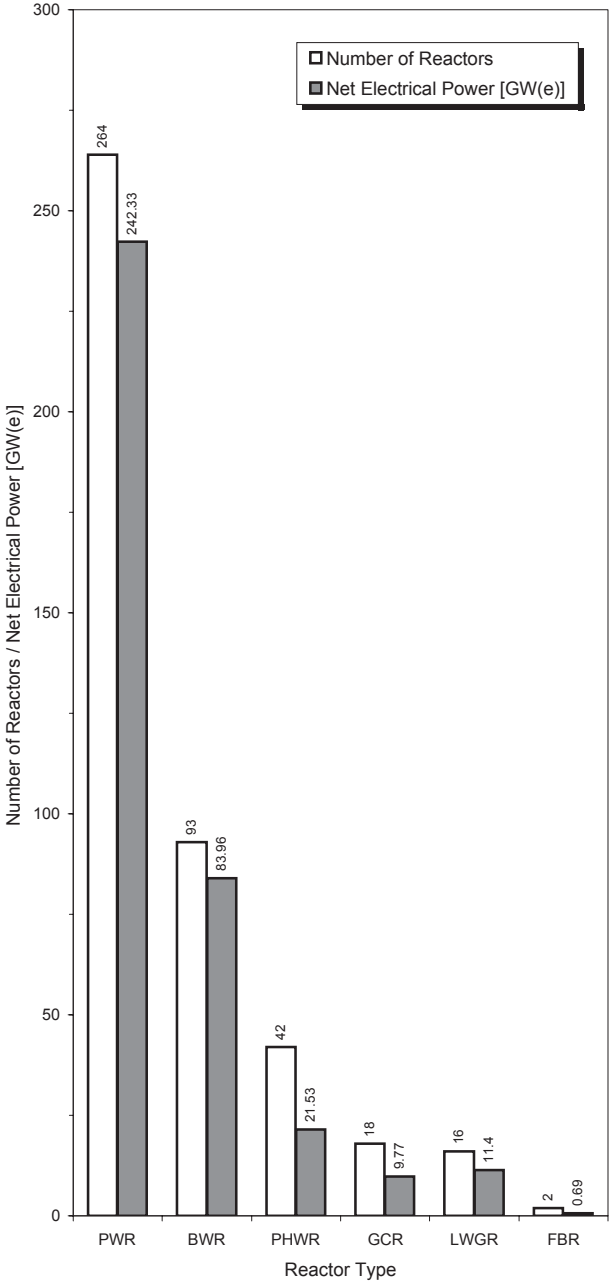


Figure 1. Nuclear reactors by type and net electrical power (as of 31 Dec. 2006)

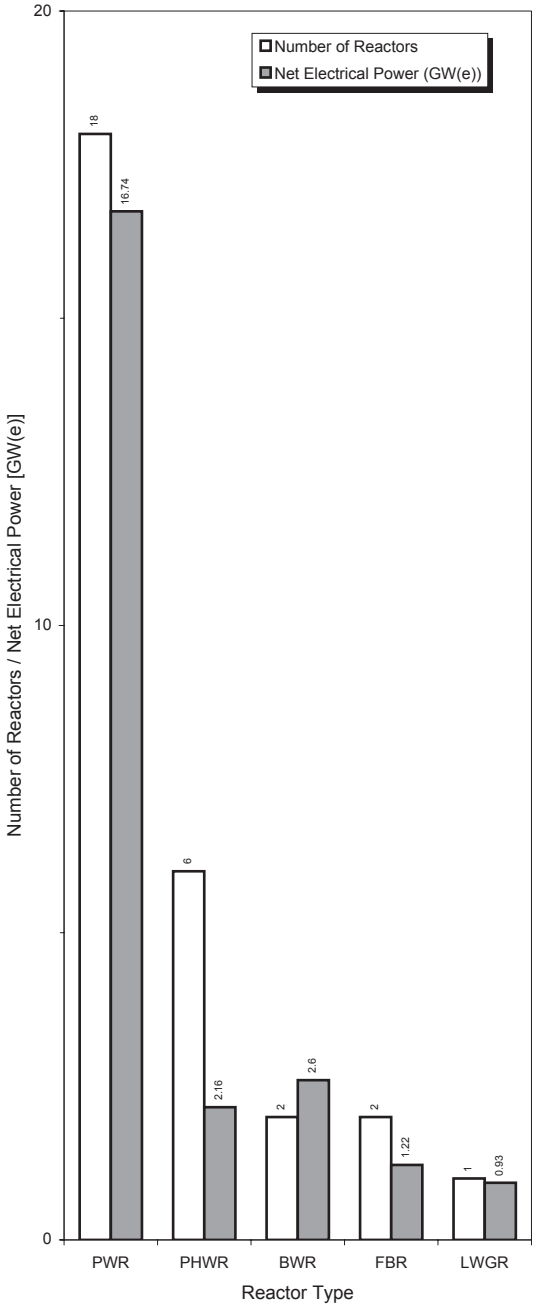


Figure 2. Reactors under construction by type and net electrical power (as of 31 Dec. 2006)

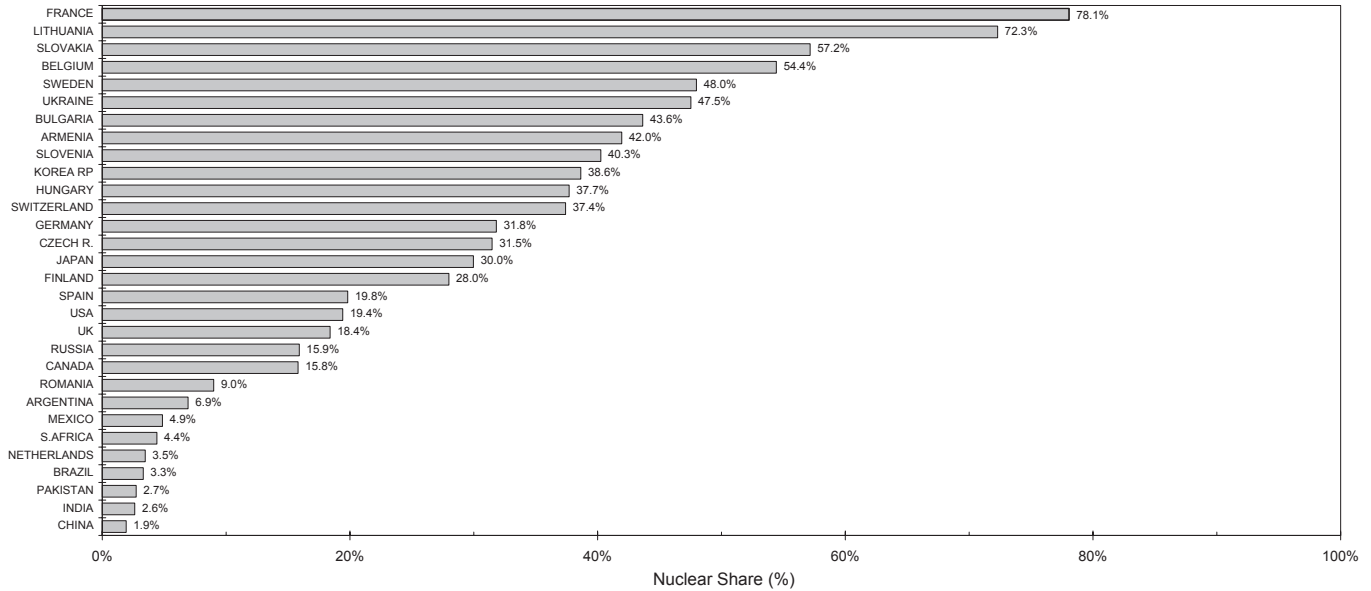


Figure 3. Nuclear share of electricity generation (as of 31 Dec. 2006)

Note: The nuclear share of electricity supplied in Taiwan, China was 19.5% of the total.

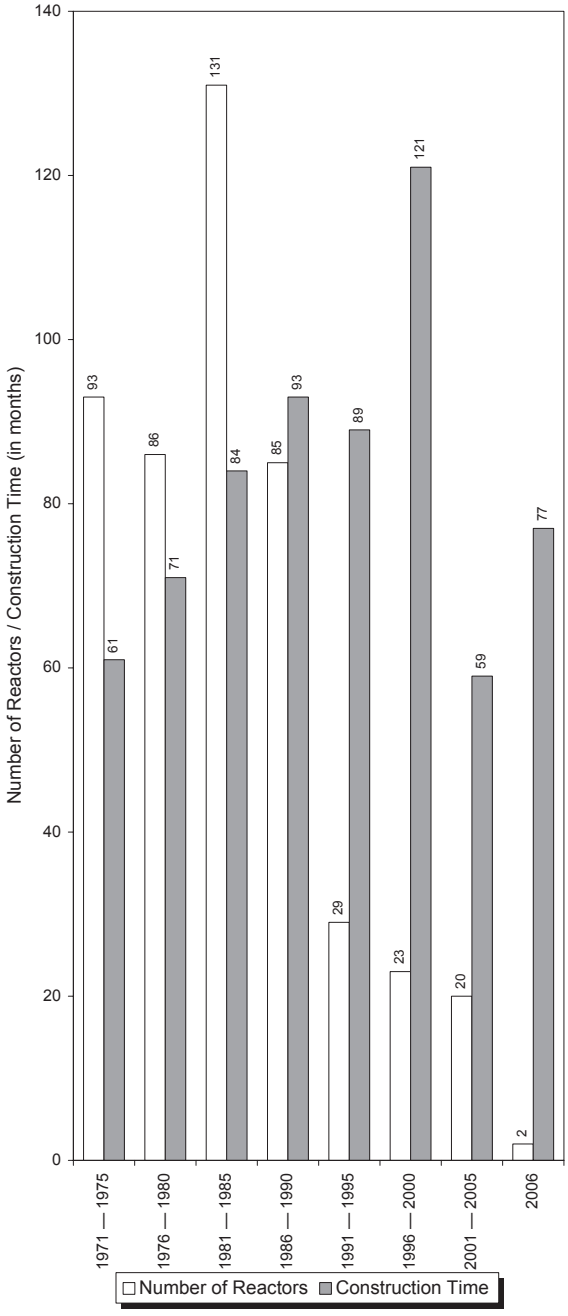


Figure 4. Worldwide median construction time span (as of 31 Dec. 2006)

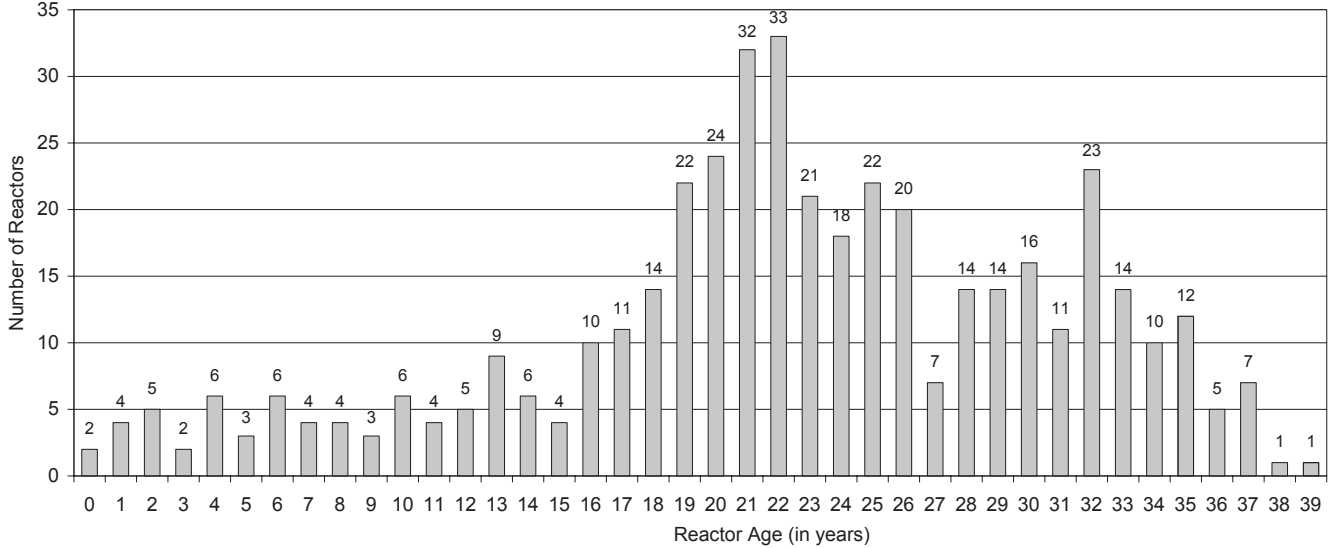


Figure 5. Number of reactors in operation by age (as of 31 Dec. 2006)

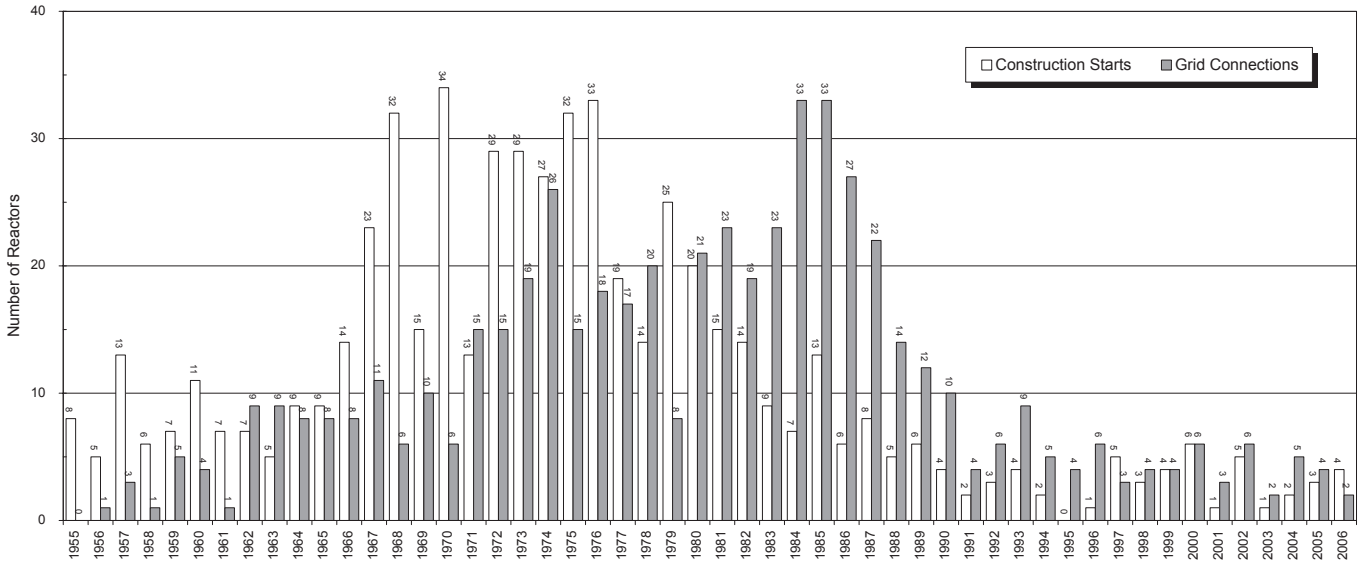


Figure 6. Annual construction starts and connections to the grid (1955 — 2006)

INTERNATIONAL ATOMIC ENERGY AGENCY
VIENNA
ISBN 978-92-0-105307-7
ISSN 1011-2642