

REFERENCE DATA SERIES No. 2
2011 Edition

Nuclear Power Reactors in the World



IAEA

International Atomic Energy Agency

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NUCLEAR POWER REACTORS IN THE WORLD

2011 Edition

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INTRODUCTION

This is the thirty-first 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 IAEA. It contains the following summarized information:

- General and technical information as of the end of 2010 on power reactors operating or under construction, and shut down;
- Performance data on reactors operating in the Member States, as reported to the IAEA.

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

PRIS outputs are available in the IAEA's annual publications and on the PRIS web site (<http://www.iaea.org/pris>). Detail outputs are accessible to registered users through on-line applications. Enquiries should be addressed to:

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DEFINITIONS

Performance factors

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

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

$$\text{UCL (\%)} = \frac{\text{UEL}}{\text{REG}} \times 100$$

$$\text{PCL (\%)} = \frac{\text{PEL}}{\text{REG}} \times 100$$

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

$$\text{OF (\%)} = \frac{\text{On-line Hours}}{\text{Total Hours}} \times 100$$

where

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

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

UCL is the unplanned capability loss factor, expressed in per cent.

PCL is the planned capability loss factor, expressed in per cent.

LF is the load factor, expressed in per cent.

OF is the operating factor, expressed in per cent.

REG reference energy generation: 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: 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: 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: Energy (MW·h), that was not supplied due to constraints reducing plant availability and being beyond plant management control.
- EG 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 basemat 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 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 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 restart 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. 2010

Country	Reactors in Operation		Long-term Shutdown Reactors		Reactors under Construction		Nuclear Electricity Supplied in 2010	
	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	6.69	5.91
ARMENIA	1	375					2.29	39.42
BELGIUM	7	5926					45.73	51.16
BRAZIL	2	1884			1	1245	13.90	3.06
BULGARIA	2	1906			2	1906	14.24	33.13
CANADA	18	12569	4	2726	28	28230	85.50	15.07
CHINA	13	10058					70.96	1.82
CZECH REP.	6	3678					26.44	33.27
FINLAND	4	2716			1	1600	21.89	28.43
FRANCE	58	63130			1	1600	410.09	74.12
GERMANY	17	20490					133.01	28.38
HUNGARY	4	1889					14.66	42.10
INDIA	19	4189			6	3766	20.48	2.85
IRAN, ISL. REP.					1	915	NA	NA
JAPAN	54	46821			2	2650	280.25	29.21
KOREA REP.	21	18698	1	246	5	5560	141.89	32.18
MEXICO	2	1300					5.59	3.59
NETHERLANDS	1	482					3.75	3.38
PAKISTAN	2	425			1	300	2.56	2.60
ROMANIA	2	1300					10.70	19.48
RUSSIA	32	22693			11	9153	159.41	17.09
SLOVAKIA	4	1816			2	782	13.54	51.80
SLOVENIA	1	666					5.38	37.30
SOUTH AFRICA	2	1800					12.90	5.18
SPAIN	8	7514					59.26	20.09
SWEDEN	10	9303					55.73	38.13
SWITZERLAND	5	3238					25.34	38.01
UK	19	10137					56.85	15.66

TABLE 1. REACTORS IN OPERATION, LONG TERM SHUTDOWN AND UNDER CONSTRUCTION, 31 DEC. 2010 — continued

Country	Reactors in Operation		Long-term Shutdown Reactors		Reactors under Construction		Nuclear Electricity Supplied in 2010	
	No of Units	Total MW(e)	No of Units	Total MW(e)	No of Units	Total MW(e)	TW(e).h	% of Total
UKRAINE	15	13107			2	1900	83.95	48.11
USA	104	101240			1	1165	807.08	19.59
Total	441	375267	5	2972	67	64064	2629.95	NA

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

— 6 units, 4982 MW in operation; 2 units, 2600 MW under construction;

— 39.89 TW(e).h of nuclear electricity generation, representing 19.30% of the total electricity generated there;

TABLE 2. TYPE AND NET ELECTRICAL POWER OF REACTORS CONNECTED TO THE GRID, 31 DEC. 2010

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	375											1	375
BELGIUM	7	5926											7	5926
BRAZIL	2	1884											2	1884
BULGARIA	2	1906											2	1906
CANADA							18	12569					18	12569
CHINA	11	8758					2	1300					13	10058
CZECH REP.	6	3678											6	3678
FINLAND	2	976	2	1740									4	2716
FRANCE	58	63130											58	63130
GERMANY	11	14033	6	6457									17	20490
HUNGARY	4	1889											4	1889
INDIA			2	300			17	3889					19	4189
JAPAN	24	19284	30	27537			4	2722					54	46821
KOREA REP.	17	15976											21	18698
MEXICO			2	1300									2	1300
NETHERLANDS	1	482											1	482
PAKISTAN	1	300											2	425
ROMANIA							1	125					2	1300
RUSSIA	16	11914					2	1300					2	1300
SLOVAKIA	4	1816							15	10219	1	560	32	22693
SLOVENIA	1	666											4	1816
SOUTH AFRICA	2	1800											2	1800
SPAIN	6	6004	2	1510									8	7514
SWEDEN	3	2799	7	6504									10	9303
SWITZERLAND	3	1700	2	1538									5	3238
UK	1	1188											19	10137
UKRAINE	15	13107			18	8949							15	13107
USA	69	67205	35	34035									104	101240
TOTAL	269	248637	92	84062	18	8949	46	22840	15	10219	1	560	441	375267

The totals include 6 units, 4982 MW in Taiwan, China.
 During 2010, 5 reactors, 3763 MW were newly connected to the grid.

TABLE 3. TYPE AND NET ELECTRICAL POWER OF REACTORS UNDER CONSTRUCTION, 31 DEC. 2010

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						692					1	692
BRAZIL	1	1245			1						1	1245
BULGARIA	2	1906									2	1906
CHINA	28	28230									28	28230
FINLAND	1	1600									1	1600
FRANCE	1	1600									1	1600
INDIA	2	1834			3	1462			1	470	6	3766
IRAN/ISL.REP	1	915									1	915
JAPAN			2	2650							2	2650
KOREA REP.	5	5560									5	5560
PAKISTAN	1	300									1	300
RUSSIA	9	7434					1	915	1	804	11	9153
SLOVAKIA	2	782									2	782
UKRAINE	2	1900									2	1900
USA	1	1165									1	1165
TOTAL	56	54471	(*) 4	5250	4	2154	1	915	2	1274	67	64064

(*) The totals include 2 units (2x BWR), 2600 MW in Taiwan, China. During 2010, 16 reactors, 15846 MW, started construction.

TABLE 4. REACTOR YEARS OF EXPERIENCE, UP TO 31 DEC. 2010

Country	Reactors Connected to the Grid		Long term Shutdown Reactors		Permanently Shutdown Reactors		Total, Operating and Shutdown Reactors			
	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	64	7
ARMENIA	1	375			1	376	2	751	36	8
BELGIUM	7	5926			1	10	8	5936	240	7
BRAZIL	2	1884					2	1884	39	3
BULGARIA	2	1906			4	1632	6	3538	149	3
CANADA	18	12569					25	15773	600	2
CHINA	13	10058		2726	3	478	13	10058	111	2
CZECH REP.	6	3678					6	3678	116	10
FINLAND	4	2716					4	2716	127	4
FRANCE	58	63130			12	3789	70	66919	1758	4
GERMANY	17	20490			19	5879	36	26369	768	5
HUNGARY	4	1889					4	1889	102	2
INDIA	19	4189					19	4189	337	3
ITALY					4	1423	4	1423	81	
JAPAN	54	46821		246	5	1618	60	48685	1494	8
KAZAKHSTAN					1	52	1	52	25	10
KOREA REP.	21	18698					21	18698	360	1
LITHUANIA					2	2370	2	2370	43	6
MEXICO	2	1300					2	1300	37	11
NETHERLANDS	1	482			1	55	2	537	66	
PAKISTAN	2	425					2	425	49	10
ROMANIA	2	1300					2	1300	17	11
RUSSIA	32	22693			5	786	37	23479	1026	5
SLOVAKIA	4	1816			3	909	7	2725	136	7
SLOVENIA	1	666					1	666	29	3
SOUTH AFRICA	2	1800					2	1800	52	3
SPAIN	8	7514			2	621	10	8135	277	6
SWEDEN	10	9303			3	1225	13	10528	382	6

TABLE 4. REACTOR YEARS OF EXPERIENCE, UP TO 31 DEC. 2010 — continued

Country	Reactors Connected to the Grid		Long term Shutdown Reactors		Permanently Shutdown Reactors		Total, Operating and Shutdown Reactors			
	No	Capacity MW(e) Net	No	Capacity MW(e) Net	No	Capacity MW(e) Net	No	Capacity MW(e) Net	Experience Years	Months
	SWITZERLAND	5	3238			1	6	6	3244	179
UK	19	10137			26	3301	45	13438	1476	8
UKRAINE	15	13107			4	3515	19	16622	383	6
USA	104	101240			28	9764	132	111004	3603	11
Total	441	375267	5	2972	125	37809	571	416048	14353	4

Notes:

1. The total includes the following data from Taiwan, China: — reactors connected to the grid: 6 units, 4982 MW, 176 years 1 month.
2. Operating experience is counted from the grid connection excluding a long term shutdown period.

TABLE 5. OPERATING REACTORS AND NET ELECTRICAL POWER, 1980 TO 2010

Country	Number of Units and Net Capacity (MW(e)) Connected to the Grid at 31st Dec. of Each Year															
	1980		1985		1990		1995		2000		2005		2009		2010	
	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	335	2	935	2	935	2	978	2	935	2	935	2	935	2	935
ARMENIA	2	816	2	816	2	816	1	376	1	376	1	376	1	375	1	375
BELGIUM	4	1670	8	5464	7	5501	7	5712	7	5801	7	5801	7	5902	7	5926
BRAZIL	1	626	1	626	1	626	2	1976	2	1901	2	1884	2	1884	2	1884
BULGARIA	3	1224	4	1632	5	2585	6	3760	6	2722	4	2722	2	1906	2	1906
CANADA	10	5172	16	9741	20	13993	21	14902	14	9998	18	12584	18	12569	18	12569
CHINA			3	2188	3	2188	3	2188	3	2188	9	6567	11	8438	13	10058
CZECH REP.	1	391	1	391	4	1632	4	1632	5	2611	6	3373	6	3678	6	3678
FINLAND	4	2208	4	2300	4	2310	4	2656	4	2676	4	2696	4	2696	4	2716
FRANCE	22	14388	43	37478	56	58808	56	58573	59	63080	59	63260	59	63260	58	63130
GERMANY	19	10323	24	18110	21	21250	19	20972	19	21283	17	20339	17	20480	17	20490
HUNGARY	2	825	2	825	4	1710	4	1729	4	1729	4	1755	4	1889	4	1889
INDIA	4	832	6	1143	7	1324	10	1746	14	2508	15	2993	18	3987	19	4189
ITALY	4	1112	3	1273	4	1324	10	1746	14	2508	15	2993	18	3987	19	4189
JAPAN	23	14918	33	23612	41	30867	50	39625	52	43245	55	47593	54	46821	54	46821
KAZAKHSTAN	1	135	1	135	1	135	1	50	16	12990	20	16810	20	17705	21	18698
KOREA REP.	1	564	5	3692	9	7220	11	9115	16	12990	20	16810	20	17705	21	18698
LITHUANIA	1	1380	1	1380	2	2760	2	2370	2	2370	1	1185	2	1300	2	1300
MEXICO			1	640	2	1256	2	1256	2	1290	2	1360	2	1300	2	1300
NETHERLANDS	2	498	2	508	2	539	2	510	1	449	1	450	1	487	1	482
PAKISTAN	1	125	1	137	1	125	1	125	2	425	2	425	2	425	2	425
ROMANIA			28	15841	29	18898	30	19848	30	19848	31	21743	31	21743	32	22693
RUSSIA	20	8596	28	15841	29	18898	30	19848	30	19848	31	21743	31	21743	32	22693
SLOVAKIA	2	780	4	1632	4	1632	4	1632	6	2440	6	2442	4	1762	4	1816
SLOVENIA	1	632	1	632	1	620	1	620	1	676	1	656	1	666	1	666
SOUTH AFRICA	2	1073	2	1840	2	1840	2	1840	2	1840	2	1800	2	1800	2	1800
SPAIN	3	1073	8	5608	9	7099	9	7468	9	7468	9	7591	8	7450	8	7514
SWEDEN	8	5510	12	9455	12	9826	12	10043	11	9412	10	8905	10	9036	10	9303
SWITZERLAND	4	1940	5	2881	5	2942	5	3056	5	3170	5	3220	5	3238	5	3238

TABLE 5. OPERATING REACTORS AND NET ELECTRICAL POWER, 1980 TO 2010 — continued

Country	Number of Units and Net Capacity (MW(e)) Connected to the Grid at 31st Dec. of Each Year															
	1980		1985		1990		1995		2000		2005		2009		2010	
	No.	MW(e)	No.	MW(e)	No.	MW(e)	No.	MW(e)	No.	MW(e)	No.	MW(e)	No.	MW(e)	No.	MW(e)
UK	33	6423	38	10077	37	11360	35	12910	33	12490	23	11852	19	10137	19	10137
UKRAINE	3	2306	10	8324	15	13020	15	13045	13	11195	15	13107	15	13107	15	13107
USA	69	50881	90	74401	108	96228	108	98068	103	96297	103	98145	104	100749	104	101240
WORLD	245	133037	363	245779	416	318253	434	341402	435	349999	441	368125	437	370705	441	375267

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

- 1980: 2 units, 1208 MW, 1985: 6 units, 4890 MW, 1990: 6 units, 4828 MW, 1995: 6 units, 4884 MW, 2000: 6 units, 4884 MW, 2005: 6 units, 4980 MW, 2009: 6 units, 4982 MW, 2010: 6 units, 4982 MW.

TABLE 6. NUCLEAR ELECTRICITY PRODUCTION AND SHARE FROM 1980 TO 2010

Country	Nuclear capacity (TWE.h) of reactors connected to the Grid at 31st Dec. of the year															
	1980		1985		1990		1995		2000		2005		2009		2010	
	TW(e).h	% of Total	TW(e).h	% of Total	TW(e).h	% of Total	TW(e).h	% of Total	TW(e).h	% of Total	TW(e).h	% of Total	TW(e).h	% of Total	TW(e).h	% of Total
ARGENTINA	2.18	NA	5.25	11.7	6.72	19.8	6.57	11.8	5.74	7.3	6.37	6.9	7.59	7.0	6.69	5.9
ARMENIA									1.84	33.0	2.50	42.7	2.29	45.0	2.29	39.4
BELGIUM	11.86	NA	29.25	59.8	40.59	60.1	39.30	55.5	45.81	56.8	45.34	55.6	44.96	51.7	45.73	51.2
BRAZIL			3.17	1.7	2.06	1.0	2.33	1.0	5.59	1.9	9.20	2.5	12.22	2.9	13.90	3.1
BULGARIA	5.71	NA	12.17	31.6	13.51	35.7	16.22	46.4	16.79	45.0	17.38	44.1	14.22	35.9	14.24	33.1
CANADA	38.02	NA	59.47	12.7	69.87	14.8	93.98	17.3	69.12	11.8	86.83	14.5	85.13	14.8	85.50	15.1
CHINA							12.13	1.2	16.02	1.2	50.33	2.0	65.71	1.9	70.96	1.8
CZECH REP.			1.99	NA	11.77	NA	12.23	20.0	12.71	18.7	23.25	30.5	25.66	33.8	26.44	33.3
FINLAND	6.68	NA	17.98	38.2	18.13	35.1	18.13	29.9	21.58	32.2	22.36	32.9	22.60	32.9	21.89	28.4
FRANCE	57.31	NA	213.28	64.8	297.61	74.5	358.71	76.1	395.39	76.4	431.18	78.5	391.75	75.2	410.09	74.1
GERMANY	41.44	NA	119.59	31.2	139.37	33.1	146.13	29.6	160.66	30.6	154.61	31.1	127.72	28.6	133.01	27.3
HUNGARY			6.10	23.6	12.89	51.4	13.20	42.3	13.35	40.6	13.02	37.2	14.30	43.0	14.66	42.1
INDIA	2.77	NA	3.87	2.2	5.29	2.2	6.99	1.9	14.23	3.1	15.73	2.8	14.75	2.2	20.48	2.9
ITALY	2.11	NA	6.46	3.8												
JAPAN	79.11	NA	145.37	22.7	187.19	27.1	275.51	33.4	306.24	33.8	280.50	29.3	263.05	29.2	280.25	29.2
KAZAKHSTAN							0.08	0.1								
KOREA REP.	3.26	NA	12.36	23.2	50.26	49.1	60.21	36.1	103.54	40.7	137.59	44.7	141.12	34.8	141.89	32.2
LITHUANIA			8.75	NA	15.70	NA	10.64	86.1	7.42	73.9	9.94	70.3	10.03	76.2	10.11	76.2
MEXICO					2.78	2.6	7.53	6.0	7.92	3.9	10.32	5.0	10.11	4.8	5.59	3.6
NETHERLANDS	3.97	NA	3.69	6.1	3.29	4.9	3.78	4.9	3.70	4.3	3.77	3.9	4.02	3.7	3.75	3.4
PAKISTAN	0.07	0.5	0.26	1.0	0.38	1.1	0.46	0.9	0.90	1.7	2.41	2.8	2.64	2.7	2.56	2.6
ROMANIA									5.05	10.9	5.11	8.6	10.82	20.6	10.70	19.5
RUSSIA	43.78	NA	86.26	NA	109.62	NA	91.59	11.8	120.10	15.0	137.64	15.8	152.78	17.8	159.41	17.1
SLOVAKIA	4.52	NA	8.70	NA	11.16	NA	11.35	44.1	15.17	53.4	16.34	56.1	13.08	53.5	13.54	51.8
SLOVENIA			3.85	NA	4.39	NA	4.57	39.5	4.55	37.4	5.61	42.4	5.46	37.8	5.38	37.3
SOUTH AFRICA			5.39	4.2	8.47	5.6	11.29	6.5	13.00	6.6	12.24	5.5	11.57	4.8	12.90	5.2
SPAIN	4.98	NA	26.83	24.0	51.98	35.9	53.49	34.1	59.49	27.6	54.59	19.6	50.58	17.5	59.26	20.1
SWEDEN	25.42	NA	55.89	42.3	65.27	45.9	67.17	46.6	51.88	39.0	69.58	44.9	50.04	37.5	55.73	38.1
SWITZERLAND	13.63	NA	21.28	39.8	22.40	42.6	23.58	39.9	25.05	38.2	22.11	38.0	26.27	39.5	25.34	38.0

TABLE 6. NUCLEAR ELECTRICITY PRODUCTION AND SHARE FROM 1980 TO 2010 — continued

Country	Nuclear capacity (TWE.h) of reactors connected to the Grid at 31st Dec. of the year															
	1980		1985		1990		1995		2000		2005		2009		2010	
	TW(e).h	% of Total	TW(e).h	% of Total	TW(e).h	% of Total	TW(e).h	% of Total	TW(e).h	% of Total	TW(e).h	% of Total	TW(e).h	% of Total	TW(e).h	% of Total
UK	32.32	NA	53.73	19.6	58.77	19.7	70.64	25.4	72.99	21.9	75.34	20.0	62.86	17.7	56.85	15.7
UKRAINE	6.38	NA	35.81	NA	71.26	NA	65.78	37.8	72.56	47.3	83.40	48.5	77.95	48.6	83.95	48.1
USA	249.84	NA	378.68	15.5	578.08	20.6	673.52	22.5	755.55	19.8	783.35	19.3	796.89	20.2	807.08	19.6
WORLD	635.36		1327.43		1890.35		2190.91		2440.94		2626.34		2558.06		2629.95	

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

1990: 31.54 TW(e).h of nuclear electricity generation, representing 38.32% of the total electricity generated there

1995: 33.8 TW(e).h of nuclear electricity generation, representing 28.79% of the total electricity generated there

2000: 37 TW(e).h of nuclear electricity generation, representing 21.19% of the total electricity generated there

2005: 38.4 TW(e).h of nuclear electricity generation, representing 17.93% of the total electricity generated there

2009: 39.89 TW(e).h of nuclear electricity generation, representing 20.65% of the total electricity generated there

2010: 39.89 TW(e).h of nuclear electricity generation, representing 19.3% of the total electricity generated there

TABLE 7. ANNUAL CONSTRUCTION STARTS AND CONNECTIONS TO THE GRID, 1954 TO 2010

Year	Construction Starts		Connections to the Grid		Reactors in operation	
	Number of Units	Design Capacity MW(e)	Number of Units	Design Capacity MW(e)	Number of Units	Updated Capacity MW(e)
1954	1	60	1	5	1	5
1955	8	260			1	5
1956	5	577	1	35	2	65
1957	13	1836	3	119	5	209
1958	6	476	1	35	6	269
1959	7	976	5	176	11	548
1960	11	1010	4	438	15	1087
1961	7	1531	1	15	16	1104
1962	8	1379	9	955	25	2223
1963	5	1722	9	500	33	2677
1964	9	2866	8	1022	40	3686
1965	9	3291	8	1879	48	5910
1966	15	7052	8	1530	55	7539
1967	25	16287	11	2165	64	9595
1968	37	26859	7	1020	69	10648
1969	13	9277	10	3670	78	14121
1970	37	25526	6	3410	84	17656
1971	18	12660	16	7711	99	24320
1972	29	22335	16	8880	113	32797
1973	29	23492	20	12727	132	43761
1974	38	35222	26	17149	154	61021
1975	38	36449	15	10236	169	70414
1976	42	40626	19	14269	186	83992
1977	24	22660	18	13243	200	96385
1978	23	21735	20	15782	219	111923
1979	28	23909	8	6909	225	117814
1980	20	19134	21	15088	245	133037
1981	16	15149	23	20389	267	153832
1982	19	19765	19	15286	284	168317
1983	16	12218	23	19253	306	187756
1984	10	9528	33	30971	336	218452
1985	20	16286	33	31042	363	245779
1986	8	7201	27	27212	389	272074
1987	13	11019	22	22191	407	295812
1988	7	7722	14	13621	416	305212
1989	6	4018	12	10457	420	311942
1990	5	3366	10	10543	416	318253
1991	2	2246	4	3668	415	321924
1992	3	3105	6	4809	418	325261
1993	4	3715	9	9012	427	333914
1994	2	1330	5	4176	429	336934
1995			5	3635	434	341402
1996	1	610	6	7080	438	347296
1997	5	4386	3	3568	434	347895
1998	3	2096	4	3152	430	344915
1999	4	4583	4	2704	432	347368
2000	6	5379	6	3063	435	349999
2001	1	1304	3	2696	438	352730
2002	6	3440	6	4998	439	357296
2003	1	202	2	1700	437	359842
2004	2	1336	5	4785	438	364688
2005	3	2900	4	3923	441	368125
2006	4	3415	2	1435	435	369581
2007	8	6519	3	1785	439	371645
2008	10	10499			438	371495
2009	12	13165	2	1068	437	370705
2010	16	15846	5	3763	441	375267

TABLE 8. NUMBER OF NEW REACTORS CONNECTED TO THE GRID AND MEDIAN OF CONSTRUCTION TIME SPAN — continued

Country	1976 to 1980		1981 to 1985		1986 to 1990		1991 to 1995		1996 to 2000		2001 to 2005		2006 to 2009		2010	
	No.	Months	No.	Months	No.	Months	No.	Months	No.	Months	No.	Months	No.	Months	No.	Months
UK	4	108	6	186	4	98	1	80								
UKRAINE	3	89	7	64	6	57	1	113								
USA	18	100	25	126	22	146	1	221	1	278	2	227				
TOTAL	86	74	131	99	85	95	29	103	23	123	20	64	7	77	5	71

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 from Taiwan, China:

— 1976 to 1980: 2 units, 64 Months

— 1981 to 1985: 4 units, 72 Months

TABLE 9. CONSTRUCTION STARTS DURING 2010

Country	Reactor		Type	Model	Design Capacity [MW]			Operator	NSSS Supplier	Construction start	Grid Connection	Commercial Operation
	Code	Name			Thermal	Gross	Net					
BRAZIL	BR -3	ANGRA-3	PWR	PRE KONVY	3765	1350	1245	ELETRONU KWU		2010-6	—	2018-12
CHINA	CN -25	HAIYANG 2	PWR	AP-1000	3750	1250	1000	SNPC	WH	2010-6	—	—
	CN -35	TAISHAN 2	PWR	EPR-1700	4500	1750	1700	TNPC	AREVA	2010-4	—	—
	CN -38	NINGDE 3	PWR	CPR1000	2905	1080	1000	NDNPC	DFEC	2010-1	—	—
	CN -39	NINGDE 4	PWR	CPR1000	2905	1080	1000	NDNPC	DFEC	2010-9	—	—
	CN -43	YANGJIANG 3	PWR	CPR1000	2905	1087	1000	YNPC	DFEC	2010-11	—	—
	CN -47	FUQING 3	PWR	CPR-1000	2905	1087	1000	FQNP	DFEC	2010-12	—	2015-7
	CN -51	CHANGJIANG 1	PWR	CNP-600	1930	650	610	HNPC	DFEC	2010-4	—	—
	CN -52	CHANGJIANG 2	PWR	CNP-600	1930	650	610	HNPC	DFEC	2010-11	—	2015-12
	CN -55	FANGCHENGANG 1	PWR	CPR1000	2905	1087	1000	GFNPC	DFEC	2010-7	—	—
	CN -56	FANGCHENGANG 2	PWR	CPR1000	2905	1087	1000	GFNPC	DFEC	2010-12	—	—
INDIA	IN -30	KAKRAPAR-3	PHWR	PHWR-700	2166	700	630	NPCIL	NPCIL	2010-11	2015-3	2015-6
	IN -31	KAKRAPAR-4	PHWR	PHWR-700	2166	700	630	NPCIL	NPCIL	2010-11	2015-9	2015-12
JAPAN	JP -66	OHMA	BWR	ABWR	3926	1383	1325	EPDC	H/G	2010-5	—	2014-11
	RU -164	LENINGRAD 2-2	PWR	VVER V-49	3200	1170	1085	REA	ROSATOM	2010-4	—	—
RUSSIA	RU -64	ROSTOV-4	PWR	VVER V-32	3000	1070	1011	REA	ROSATOM	2010-6	—	—

During 2010, 16 reactors (15846 MW) started construction.

TABLE 10. CONNECTIONS TO THE GRID DURING 2010

Country	Reactor		Type	Model	Design Capacity [MW]		Operator	NSSS Supplier	Construction Start	First Criticality	Grid Connection
	Code	Name			Thermal	Gross					
CHINA	CN -12	LINGAO 3	PWR	CPR1000	2905	1080	LDNPC	DFEC	2005-12	2010-6	2010-7
	CN -14	QINSHAN 2-3	PWR	CNP600	1930	650	NPQJVC	CNNC	2006-3	2010-7	2010-8
INDIA	IN -20	RAJASTHAN-6	PHWR	Horizontal Pre	801	220	NPCL	NPCL	2003-1	2010-1	2010-3
KOREA REP.	KR -21	SHIN-KORI-1	PWR	OPR-1000	2825	1048	KHNP	DHICKOPC	2006-6	2010-7	2010-8
RUSSIA	RU -62	ROSTOV-2	PWR	VVER V-320I	3200	1000	REA	ROSATOM	1983-5	2010-1	2010-3

During 2010, 5 reactors (3763 MW) were newly connected to the grid.

TABLE 11. SCHEDULED CONNECTIONS TO THE GRID DURING 2011

Country	Reactor		Type	Model	Design Capacity [MW]		Operator	NSSS Supplier	Construction Start	First Criticality	Grid Date
	Code	Name			Thermal	Gross					
CHINA	CN -13	LINGAO 4	PWR		2905	1080	LDNPC	DFEC	2006-6	2011-2	2011-5
INDIA	IN -16	KAIGA-4	PHWR		800	220	NPCL	NPCL	2002-5	2010-11	2011-1
	IN -25	KUDANKULAM-1	PWR		3000	1000	NPCL	MAEP	2002-3	2010-12	2011-2
	IN -26	KUDANKULAM-2	PWR		3000	1000	NPCL	MAEP	2002-7	2011-6	2011-8
IRAN, ISL. REP.	IR -1	BUSHEHR 1	PWR		3000	1000	NPPDCO	ASE	1975-5	2011-5	2011-7
JAPAN	JP -65	SHIMANE-3	BWR		3926	1373	CHUGOKU	HITACHI	2007-10	—	2011-12
KOREA REP.	KR -22	SHIN-KORI-2	PWR		2825	1000	KHNP	DHICKOPC	2007-6	2011-7	2011-8
PAKISTAN	PK -3	CHASNUPP 2	PWR		999	325	PAEC	CNNC	2005-12	2011-2	2011-3

During 2011, 9 reactors (7836 MW) are expected to achieve grid connection, including 1 unit (1300 MW) in Taiwan, China.

TABLE 12. REACTORS PLANNED FOR CONSTRUCTION AS KNOWN AT 31 DEC. 2010

Country	Reactor		Type	Model	Design Capacity [MW]		Operator	NSSS Supplier	Expected Construction Start
	Code	Name			Thermal	Gross			
CHINA	CN-42	BAMAOSHAN	PWR	CPR-1000	1930	1080			—
	CN-53	CHANGJIANG 3	PWR		1930	650			—
	CN-54	CHANGJIANG 4	PWR			610			—
	CN-57	FANGCHENGANG 3	PWR			1000			—
	CN-58	FANGCHENGANG 4	PWR			1000			—
	CN-59	FANGCHENGANG 5	PWR			1000			—
	CN-60	FANGCHENGANG 6	PWR			1000			—
	CN-48	FUJING 4	PWR	CPR-1000	2905	1087	FQNP	D FEC	—
	CN-49	FUJING 5	PWR	CPR-1000	2905	1087	FQNP	D FEC	—
	CN-50	FUJING 6	PWR	CPR-1000	2905	1087	FQNP	D FEC	—
	CN-76	HAIYANG 3	PWR	AP-1000	3750	1250	SNPC	WH	—
	CN-77	HAIYANG 4	PWR	AP-1000	3750	1250	SNPC	WH	—
	CN-26	HONGSHIDING 1	PWR			0			—
	CN-27	HONGSHIDING 2	PWR			0		HONGYANH	D FEC
	CN-80	HONGYANHE 5	PWR	CPR-1000	2905	1080	LHNPC	D FEC	—
	CN-81	HONGYANHE 6	PWR	CPR-1000	2905	1080	LHNPC	D FEC	—
	CN-65	JIYANG 1	PWR			1000			—
	CN-66	JIYANG 2	PWR			1000			—
	CN-67	JIYANG 3	PWR			1000			—
	CN-68	JIYANG 4	PWR			1000			—
	CN-61	PENGZE 1	PWR			1250			—
	CN-62	PENGZE 2	PWR			1250			—
	CN-63	PENGZE 3	PWR			1250			—
	CN-64	PENGZE 4	PWR			1250			—
	CN-78	SANMEN 3	PWR	AP-1000	3750	1250	SNMPC	WH/MHI	—
	CN-79	SANMEN 4	PWR	AP-1000	3750	1250	SNMPC	WH/MHI	—
CN-70	SANMING-1	FBR	BN800		800	FSNPC		—	
CN-71	SANMING-2	FBR	BN800		800	FSNPC		—	
CN-69	SHIDAOWAN 1	HTR	HTGR-PM		500	200	HSNPC		—

TABLE 12. REACTORS PLANNED FOR CONSTRUCTION AS KNOWN AT 31 DEC. 2010 — continued

Country	Reactor		Type	Model	Design Capacity [MW]		Operator	NSSS Supplier	Expected Construction Start
	Code	Name			Thermal	Gross			
	CN -32	TAOHUJIANG 1	PWR			0			
	CN -33	TAOHUJIANG 2	PWR			0			
	CN -72	TIANWAN 3	PWR	VVER1000	3000	1000	JNPC	IZ	
	CN -73	TIANWAN 4	PWR	VVER1000	3000	1000	JNPC	IZ	
	CN -74	TIANWAN 5	PWR	CPR1000	2905	1080	JNPC	DFEC	
	CN -75	TIANWAN 6	PWR	CPR1000	2905	1080	JNPC	DFEC	
	CN -40	XIANNING 1	PWR			0			
	CN -41	XIANNING 2	PWR			0			
	CN -82	XUDABU 1	PWR	CPR-1000	2905	1080	LNPC	DFEC	
	CN -83	XUDABU 2	PWR	CPR-1000	2905	1080	LNPC	DFEC	
	CN -44	YANGJIANG 4	PWR	CPR1000	2905	1087	YJNPC	DFEC	
	CN -45	YANGJIANG 5	PWR	CPR1000	2905	1087	YJNPC	DFEC	
	CN -46	YANGJIANG 6	PWR	CPR1000	2905	1087	YJNPC	DFEC	
INDIA	IN -21	RAJASTHAN-7	PHWR			750	NPICL	NPICL	
	IN -22	RAJASTHAN-8	PHWR			750	NPICL	NPICL	
IRAN, ISL. REP.	IR -2	BUSHEHR 2	PWR	VVER	3000	1000	NPPDCO	TBD	2012-7
	IR -5	BUSHEHR 3	PWR	TBD	3000	1000	NPPDCO	ASE	2013-7
	IR -9	DARKHOVAIN	PWR	IR-360	1113	360	NPPDCO	NPPDCO	2015-6
JAPAN	JP -76	HAMAOKA-6	BWR	ABWR	1400	1400	CHUBU		
	JP -69	HIGASHI DORI 1 (TEPCO)	BWR	ABWR	3926	1385	TEPCO		
	JP -74	HIGASHI DORI 2 (TEPCO)	BWR	ABWR	3926	1385	TEPCO		
	JP -72	HIGASHI DORI 2 (TOHOKU)	BWR	ABWR		1067	TOHOKU		
	JP -62	KAMINOSEKI 1	BWR	ABWR	1373	1373	CHUGOKU		
	JP -63	KAMINOSEKI 2	BWR	ABWR	1373	1373	CHUGOKU		
	JP -73	NAMIE-ODAKA	BWR	BWR			TOHOKU		
	JP -75	SENDAI-3	PWR	APWR	4466	1590	KYUSHU		
	JP -67	TSURUGA-3	PWR	APWR	4466	1538	JAPCO	MHI	2012-3

TABLE 12. REACTORS PLANNED FOR CONSTRUCTION AS KNOWN AT 31 DEC. 2010 — continued

Country	Reactor		Type	Model	Design Capacity [MW]			Operator	NSSS Supplier	Expected Construction Start
	Code	Name			Thermal	Gross	Net			
KOREA REP.	JP-68	TSURUGA-4	PWR	APWR	4466	1538	0	JAPCO	MHI	2012-3
	KR-27	SHIN-JULCHIN-1	PWR	APR-1400	3938	1400	1340	KHNP	DHICKOPC	—
	KR-28	SHIN-JULCHIN-2	PWR	APR-1400	3983	1400	1340	KHNP	DHICKOPC	—
RUSSIA	RU-170	BALTISK-1	PWR	V-491	3200	1150	1082	REA	ROSATOM	—
	RU-171	BALTISK-2	PWR	V-491	3200	1150	1082	REA	ROSATOM	—
	RU-202	BASHKIR-1	PWR		3200	1200	1115	REA	ROSATOM	—
	RU-203	BASHKIR-2	PWR		3200	1200	1115	REA	ROSATOM	—
	RU-177	CENTRAL-1	PWR	-	3200	1200	1115	REA	ROSATOM	—
	RU-178	CENTRAL-2	PWR	-	3200	1200	1115	REA	ROSATOM	—
	RU-185	CENTRAL-3	PWR		3200	1200	1115	REA	ROSATOM	—
	RU-186	CENTRAL-4	PWR		3200	1200	1115	REA	ROSATOM	—
	RU-175	KOLA 2-1	PWR	-	3200	1200	1115	REA	ROSATOM	—
	RU-176	KOLA 2-2	PWR	-	3200	1200	1115	REA	ROSATOM	—
	RU-166	KURSK 2-1	PWR		3200	1200	1115	REA	ROSATOM	—
	RU-189	KURSK 2-2	PWR		3200	1200	1115	REA	ROSATOM	—
	RU-190	KURSK 2-3	PWR		3200	1200	1115	REA	ROSATOM	—
	RU-191	KURSK 2-4	PWR		3200	1200	1115	REA	ROSATOM	—
	RU-165	LENINGRAD 2-3	PWR	V-491	3200	1170	1085	REA	ROSATOM	—
	RU-167	LENINGRAD 2-4	PWR	V-491	3200	1170	1085	REA	ROSATOM	—
	RU-181	NIZHEGORODSK-1	PWR		3200	1200	1115	REA	ROSATOM	—
	RU-182	NIZHEGORODSK-2	PWR		3200	1200	1115	REA	ROSATOM	—
RU-183	NIZHEGORODSK-3	PWR		3200	1200	1115	REA	ROSATOM	—	
RU-184	NIZHEGORODSK-4	PWR		3200	1200	1115	REA	ROSATOM	—	
RU-179	PEVEK-1	PWR		150	35	32	REA	ROSATOM	—	
RU-180	PEVEK-2	PWR		150	35	32	REA	ROSATOM	—	
RU-196	PRIMORSK-1	PWR		3200	1200	1115	REA	ROSATOM	—	
RU-197	PRIMORSK-2	PWR		3200	1200	1115	REA	ROSATOM	—	
RU-187	SEVERSK-1	PWR		3200	1200	1115	REA	ROSATOM	—	

TABLE 12. REACTORS PLANNED FOR CONSTRUCTION AS KNOWN AT 31 DEC. 2010 — continued

Country	Reactor		Type	Model	Design Capacity [MW]		Operator	NSSS Supplier	Expected Construction Start
	Code	Name			Thermal	Gross			
	RU -188	SEVERSK-2	PWR		3200	1200	REA	ROSATOM	—
	RU -198	SMOLENSK 2-1	PWR		3200	1200	REA	ROSATOM	—
	RU -199	SMOLENSK 2-2	PWR		3200	1200	REA	ROSATOM	—
	RU -204	SOUTH URALS 1	PWR		3000	1200	REA	ROSATOM	—
	RU -205	SOUTH URALS 2	PWR		3000	1200	REA	ROSATOM	—
	RU -206	SOUTH URALS 3	PWR		3000	1200	REA	ROSATOM	—
	RU -200	TATAR-1	PWR		3200	1200	REA	ROSATOM	—
	RU -201	TATAR-2	PWR		3200	1200	REA	ROSATOM	—
	RU -192	TVERSK-1	PWR		3200	1200	REA	ROSATOM	—
	RU -193	TVERSK-2	PWR		3200	1200	REA	ROSATOM	—
	RU -194	TVERSK-3	PWR		3200	1200	REA	ROSATOM	—
	RU -195	TVERSK-4	PWR		3200	1200	REA	ROSATOM	—
USA	US -5039	BELL BEND	PWR	EPR		1600		AREVA	—
	US -5014	BELLEFRONTE-3	PWR	AP-1000		1117		WH	—
	US -5015	BELLEFRONTE-4	PWR	AP-1000		1117		WH	—
	US -5016	CALVERT CLIFFS-3	PWR	US EPR		1600			—
	US -5034	COMANCHE PEAK-3	PWR	US-APWR		1700			—
	US -5035	COMANCHE PEAK-4	PWR	US-APWR		1700			—
	US -5033	ENRICO FERMI-3	BWR	ESBWR		1520			—
	US -5029	LEVY COUNTY-1	PWR	AP-1000		1117	PROGRESS	WH	—
	US -5030	LEVY COUNTY-2	PWR	AP-1000		1117		WH	—
	US -5017	NORTH ANNA-3	PWR	US-APWR		1500			—
	US -5022	SHEARON HARRIS-3	PWR	AP-1000		1117			—
	US -5023	SHEARON HARRIS-4	PWR	AP-1000		1117			—
	US -5012	SOUTH TEXAS-3	BWR	ABWR		1350			—
	US -5013	SOUTH TEXAS-4	BWR	ABWR		1350			—
	US -5040	TURKEY POINT-6	PWR	AP-1000		1117			—
	US -5041	TURKEY POINT-7	PWR	AP-1000		1117			—
	US -5027	VIRGIL C. SUMMER-2	PWR	AP-1000		1117			—

TABLE 12. REACTORS PLANNED FOR CONSTRUCTION AS KNOWN AT 31 DEC. 2010 — continued

Country	Reactor		Type	Model	Design Capacity [MW]		Operator	NSSS Supplier	Expected Construction Start
	Code	Name			Thermal	Gross			
	US-5028	VIRGIL C. SUMMER-3	PWR	AP-1000		1117			—
	US-5025	VOGTLE-3	PWR	AP-1000		1117			—
	US-5026	VOGTLE-4	PWR	AP-1000		1117			—
	US-5018	WILLIAM STATES LEE III -1	PWR	AP-1000		1117			—
	US-5019	WILLIAM STATES LEE III -2	PWR	AP-1000		1117			—
VIET NAM	VN-1	PHUOC DINH 1	PWR			1000	EVN	ROSATOM	—
	VN-2	PHUOC DINH 2	PWR			1000	EVN	ROSATOM	—

Status as of 31 December 2010, 120 reactors (117515 MW) were known as planned.

TABLE 13. REACTORS UNDER CONSTRUCTION, 31 DEC. 2010

Country	Reactor		Type	Model	Design Capacity [MW]		Operator	NSSS Supplier	Construction Start	First Criticality	Grid Connection	Commercial Operation
	Code	Name			Thermal	Gross						
ARGENTINA	AR-3	ATUCHA-2	PHWR	PHWR KWU	2160	745	NASA	SIEMENS	1981-7	—	2012-7	—
BULGARIA	BG-7	BELENE-1	PWR	VVER V-466	3000	1000	KOZNPP	ASE	1987-1	—	—	—
	BG-8	BELENE-2	PWR	VVER V-466	3000	1000	KOZNPP	ASE	1987-3	—	—	—
BRAZIL	BR-3	ANGRA-3	PWR	PRE KONVOI	3765	1350	ELETRONU	KWU	2010-6	—	—	2018-12
CHINA	CN-51	CHANGJIANG 1	PWR	CNP-600	1930	650	HNPC	DFEC	2010-4	—	—	—
	CN-52	CHANGJIANG 2	PWR	CNP-600	1930	650	HNPC	DFEC	2010-11	—	—	2015-12
	CN-55	FANGCHENGANG 1	PWR	CPR1000	2905	1087	GFNPC	DFEC	2010-7	—	—	—
	CN-56	FANGCHENGANG 2	PWR	CPR1000	2905	1087	GFNPC	DFEC	2010-12	—	—	—
	CN-28	FANGJASHAN 1	PWR	CPR-1000	2905	1087	GNPC	DFEC	2008-12	—	—	—
	CN-29	FANGJASHAN 2	PWR	CPR-1000	2905	1087	GNPC	DFEC	2009-7	—	—	—
	CN-30	FUJING 1	PWR	CPR-1000	2905	1087	FQNP	DFEC	2008-11	—	—	—
	CN-31	FUJING 2	PWR	CPR-1000	2905	1087	FQNP	DFEC	2009-6	—	—	—
	CN-47	FUJING 3	PWR	CPR-1000	2905	1087	FQNP	DFEC	2010-12	—	—	2015-7
	CN-24	HAIYANG 1	PWR	AP-1000	3750	1250	SNPC	WH	2009-9	—	—	—
	CN-25	HAIYANG 2	PWR	AP-1000	3750	1250	SNPC	WH	2010-6	—	—	—
	CN-20	HONGYANHE 1	PWR	CPR-1000	2905	1080	LHNPC	DFEC	2007-8	—	—	—
	CN-21	HONGYANHE 2	PWR	CPR-1000	2905	1080	LHNPC	DFEC	2008-3	—	—	—
	CN-22	HONGYANHE 3	PWR	CPR-1000	2905	1080	LHNPC	DFEC	2009-3	—	—	—
	CN-23	HONGYANHE 4	PWR	CPR-1000	2905	1080	LHNPC	DFEC	2009-8	—	—	—
	CN-13	LINGAO 4	PWR	CPR1000	2905	1080	LDNPC	DFEC	2008-6	2011-2	2011-5	—
CN-36	NINGDE 1	PWR	CPR1000	2905	1087	NDNPC	DFEC	2008-2	—	—	—	
CN-37	NINGDE 2	PWR	CPR1000	2905	1080	NDNPC	DFEC	2008-11	—	—	—	
CN-38	NINGDE 3	PWR	CPR1000	2905	1080	NDNPC	DFEC	2010-1	—	—	—	
CN-39	NINGDE 4	PWR	CPR1000	2905	1080	NDNPC	DFEC	2010-9	—	—	—	
CN-15	QINSHAN 2-4	PWR	CNP 600	1930	650	NPQJVC	CHNC	2007-1	2011-12	2012-3	2012-7	
CN-16	SANMEN 1	PWR	AP-1000	3750	1250	SMNPC	WHMHI	2009-4	—	—	—	

TABLE 13. REACTORS UNDER CONSTRUCTION, 31 DEC. 2010 — continued

Country	Reactor		Type	Model	Design Capacity [MW]			Operator	NSSS Supplier	Construction Start	First Criticality	Grid Connection	Commercial Operation
	Code	Name			Thermal	Gross	Net						
	CN-17	SANMEN2	PWR	AP-1000	3750	1250	1000	SMNPC	WH/MHI	2009-12	—	—	—
	CN-34	TAISHAN 1	PWR	EPR-1700	4500	1750	1700	TNPC	AREVA	2009-10	—	—	—
	CN-35	TAISHAN 2	PWR	EPR-1700	4500	1750	1700	TNPC	AREVA	2010-4	—	—	—
	CN-18	YANGJIANG 1	PWR	CPR-1000	2905	1087	1000	YJNPC	DFEC	2008-12	—	—	—
	CN-19	YANGJIANG 2	PWR	CPR-1000	2905	1087	1000	YJNPC	DFEC	2009-6	—	—	—
	CN-43	YANGJIANG 3	PWR	CPR1000	2905	1087	1000	YJNPC	DFEC	2010-11	—	—	—
FINLAND	FI-5	OLKILUOTO-3	PWR	EPR	4300	1720	1600	TVO	AREVA	2005-8	—	—	2013-8
FRANCE	FR-74	FLAMANVILLE-3	PWR	EPR	4300	1650	1600	EDF	AREVA	2007-12	2011-12	2012-5	—
INDIA	IN-16	KAIGA-4	PHWR	Horizontal Pre	800	220	202	NPCIL	NPCIL	2002-5	2010-11	2011-1	2011-1
	IN-30	KAKRAPAR-3	PHWR	PHWR-700	2166	700	630	NPCIL	NPCIL	2010-11	2014-12	2015-3	2015-6
	IN-31	KAKRAPAR-4	PHWR	PHWR-700	2166	700	630	NPCIL	NPCIL	2010-11	2015-6	2015-9	2015-12
	IN-25	KUDANKULAM-1	PWR	VVER V-412	3000	1000	917	NPCIL	MAEP	2002-3	2011-5	2011-7	2011-8
	IN-26	KUDANKULAM-2	PWR	VVER V-412	3000	1000	917	NPCIL	MAEP	2002-7	2011-6	2011-8	2011-9
	IN-29	PFBR	FBR		1253	500	470	BHAVINI		2004-10	—	—	—
IRAN/ISL.REP.	IR-1	BUSHEHR 1	PWR	VVER V-446	3000	1000	915	NPPDCO	ASE	1975-5	2011-5	2011-7	2012-1
JAPAN	JP-86	OHMA	BWR	ABWR	3926	1383	1325	EPDC	H/G	2010-5	—	—	2014-11
	JP-85	SHIMANE-3	BWR	ABWR	3926	1373	1325	CHUGOKU	HITACHI	2007-10	—	2011-12	2012-3
KOREA REP.	KR-22	SHIN-KORI-2	PWR	OPR-1000	2825	1000	960	KHNP	DHICKOPC	2007-6	2011-7	2011-8	2011-12
	KR-25	SHIN-KORI-3	PWR	APR-1400	3983	1400	1340	KHNP	DHICKOPC	2008-10	—	—	2013-9
	KR-26	SHIN-KORI-4	PWR	APR-1400	3938	1400	1340	KHNP	DHICKOPC	2009-8	—	—	2014-9
	KR-23	SHIN-WOLSONG-1	PWR	OPR-1000	2825	1000	960	KHNP	DHICKOPC	2007-11	—	—	—
	KR-24	SHIN-WOLSONG-2	PWR	OPR-1000	2825	1000	960	KHNP	DHICKOPC	2008-9	—	—	—
PAKISTAN	PK-3	CHASNUPP 2	PWR	PWR	999	325	300	PAEC	CNNC	2005-12	2011-2	2011-3	2011-5

TABLE 13. REACTORS UNDER CONSTRUCTION, 31 DEC. 2010 — continued

Country	Reactor		Type	Model	Design Capacity [MW]		Operator	NSSS Supplier	Construction Start	First Criticality	Grid Connection	Commercial Operation	
	Code	Name			Thermal	Gross							Net
RUSSIA	RU-151	AKADEMIK LOMONOSOV 1	PWR	KLT-40S' Float	150	35	REA	ROSATOM	2007-4	—	—	2013-12	
	RU-152	AKADEMIK LOMONOSOV 2	PWR	KLT-40S' Float	150	35	REA	ROSATOM	2007-4	—	—	2013-12	
	RU-116	BELYARSKY-4 (BIN-800)	FBR	BIN-800	2100	880	REA	ROSATOM	2006-7	—	—	—	
	RU-37	KALININ-4	PWR	VVER V-320	3200	1000	REA	ROSATOM	1986-8	—	—	—	
	RU-120	KURSK-5	LWGR	FBMK-1000	3200	1000	REA	ROSATOM	1985-12	—	—	—	
	RU-163	LENINGRAD 2-1	PWR	VVER V-491	3200	1170	REA	ROSATOM	2008-10	—	—	—	
	RU-164	LENINGRAD 2-2	PWR	VVER V-491	3200	1170	REA	ROSATOM	2010-4	—	—	—	
	RU-161	NOVORONEZH 2-1	PWR	VVER V-491	3200	1200	REA	ROSATOM	2008-6	—	—	2013-12	
	RU-162	NOVORONEZH 2-2	PWR	VVER V-491	3200	1200	REA	ROSATOM	2009-7	—	—	—	
	RU-63	ROSTOV-3	PWR	VVER V-320	3000	1070	REA	ROSATOM	2009-9	—	—	—	
	RU-64	ROSTOV-4	PWR	VVER V-320	3000	1070	REA	ROSATOM	2010-6	—	—	—	
	SLOVAKIA	SK-10	MOCHOVCE-3	PWR	VVER V-213	1375	440	EMO	SKODA	1987-1	2012-12	2012-12	2013-2
		SK-11	MOCHOVCE-4	PWR	VVER V-213	1375	440	EMO	SKODA	1987-1	2013-8	2013-9	2013-10
	UKRAINE	UA-51	KHMELNITSKI-3	PWR	VVER V-392B	3200	1000	NNEG	ASE	1986-3	—	2015-1	—
UA-52		KHMELNITSKI-4	PWR	VVER	3200	1000	NNEG	ASE	1987-2	—	2016-1	—	
USA	US-391	WATTS BAR-2	PWR	W (4-loop) (IC)	3425	1218	TVA	WH	1972-12	—	2012-8	—	

Status as of 31 December 2010, 67 reactors (64064 MW) are planned, including 2 units (2600 MW) from Taiwan, China.

TAIWAN, CN	TW-7	LUNGMEN 1	BWR	ABWR	3926	1350	TPC	GE	1999-3	2011-10	2011-11	2012-10
TAIWAN, CN	TW-8	LUNGMEN 2	BWR	ABWR	3926	1350	TPC	GE	1999-8	2012-1	2012-2	2012-12

TABLE 14. REACTORS IN OPERATION, 31 DEC. 2010

Country	Reactor		Type	Model	Capacity [MW]			Operator	NSSS Supplier	Construction Start	Grid Connection	Commercial Operation	EAF % 2001 to 2010	UCF % 2010	Non-electrical Applies
	Code	Name			Thermal	Gross	Net								
ARGENTINA	AR-1	ATUCHA-1	PWR	PHWR KWU	1179	357	335	NASA	SIEMENS	1968-6	1974-3	1974-6	74.2	74.3	-
	AR-2	EMBALSE	PWR	CANDU 6	2015	648	600	NASA	AECL	1974-4	1983-4	1984-1	87.6	87.7	-
ARMENIA	AM-19	ARMENIA-2	PWR	VVER V-270	1375	408	375	ANPPJSC	FAEA	1975-7	1980-1	1980-5	67.8	69.0	-
BELGIUM	BE-2	DOEL-1	PWR	WE (2 loops)	1311	454	433	ELECTRAB	ACECOWEN	1969-7	1974-8	1975-2	86.9	87.9	-
	BE-4	DOEL-2	PWR	WE (2 loops)	1311	454	433	ELECTRAB	ACECOWEN	1971-9	1975-8	1975-12	88.9	89.8	-
	BE-5	DOEL-3	PWR	WE 3-loops	3054	1056	1006	ELECTRAB	FRAMACEC	1975-1	1982-6	1982-10	88.0	88.5	-
	BE-7	DOEL-4	PWR	WE 3-loops	2988	1090	1038	ELECTRAB	ACECOWEN	1978-12	1985-4	1985-7	87.6	87.9	-
	BE-3	TIHANGE-1	PWR	Framatome 3 ld	2873	1009	962	ELECTRAB	ACLF	1970-6	1975-3	1975-10	88.0	89.7	-
	BE-6	TIHANGE-2	PWR	WE 3-loops	3064	1055	1008	ELECTRAB	FRAMACEC	1976-4	1982-10	1983-6	88.9	89.3	-
	BE-8	TIHANGE-3	PWR	WE 3-loops	3000	1102	1046	ELECTRAB	ACECOWEN	1978-11	1985-6	1985-9	86.2	89.6	-
	BR-1	ANGRA-1	PWR	2-loop WE	1882	640	609	ELETRONU	WH	1971-5	1982-4	1985-1	72.2	74.2	-
BR-2	ANGRA-2	PWR	PRE KONVOI	3764	1350	1275	ELETRONU	KWU	1976-1	2000-7	2001-2	83.9	85.6	-	
BULGARIA	BG-5	KOZLODUY-5	PWR	VVER V-320	3000	1000	953	KOZNPP	AEE	1980-7	1987-11	1988-12	79.9	80.7	DH
	BG-6	KOZLODUY-6	PWR	VVER V-320	3000	1000	953	KOZNPP	AEE	1982-4	1991-8	1993-12	76.4	78.0	DH
CANADA	CA-10	BRUCE-3	PHWR	CANDU 750A	2832	805	730	BRUCEPOW	NEIP	1972-7	1977-12	1978-2	76.9	77.4	-
	CA-11	BRUCE-4	PHWR	CANDU 750A	2832	805	730	BRUCEPOW	NEIP	1972-9	1978-12	1979-1	84.0	84.5	-
	CA-18	BRUCE-5	PHWR	CANDU 750B	2832	872	817	BRUCEPOW	OH/AECL	1978-6	1984-12	1985-3	85.8	86.0	-
	CA-19	BRUCE-6	PHWR	CANDU 750B	2880	891	817	BRUCEPOW	OH/AECL	1978-1	1984-6	1984-9	83.8	83.8	-
	CA-20	BRUCE-7	PHWR	CANDU 750B	2892	872	817	BRUCEPOW	OH/AECL	1979-5	1986-2	1986-4	89.4	89.5	-
	CA-21	BRUCE-8	PHWR	CANDU 750B	2690	845	782	BRUCEPOW	OH/AECL	1979-8	1987-3	1987-5	87.2	87.4	-
	CA-22	DARLINGTON-1	PHWR	CANDU 850	2776	934	878	OPG	OH/AECL	1982-4	1990-12	1992-11	87.3	88.5	-
	CA-23	DARLINGTON-2	PHWR	CANDU 850	2776	934	878	OPG	OH/AECL	1981-9	1990-1	1990-10	86.8	88.2	-
	CA-24	DARLINGTON-3	PHWR	CANDU 850	2776	934	878	OPG	OH/AECL	1984-9	1992-12	1993-2	87.7	88.6	-
	CA-25	DARLINGTON-4	PHWR	CANDU 850	2776	934	878	OPG	OH/AECL	1985-7	1993-4	1993-6	87.3	88.1	-

The column Non-Electrical Applications indicates the use of the facility to provide: DH district heating.

TABLE 14. REACTORS IN OPERATION, 31 DEC. 2010 — continued

Country	Reactor		Type	Model	Capacity [MW]		Operator	NSSS Supplier	Construction Start	Grid Connection	Commercial Operation	EAF % 2001 to 2010	UCF % 2001 to 2010	Non-electrical Applies	
	Code	Name			Thermal	Gross									Net
CHINA	CA-12	GENTILLY-2	PWR	CANDU 6	2156	675	635	HQ	AECL	1974-4	1982-12	1983-10	76.7	77.7	-
	CA-4	PICKERING-1	PWR	CANDU 500A	1744	542	515	OPG	OH/AECL	1966-6	1971-4	1971-7	66.3	66.5	-
	CA-7	PICKERING-4	PWR	CANDU 500A	1744	542	515	OPG	OH/AECL	1968-5	1973-5	1973-6	62.5	63.2	-
	CA-13	PICKERING-5	PWR	CANDU 500B	1744	540	516	OPG	OH/AECL	1974-11	1982-12	1983-5	72.7	73.4	-
	CA-14	PICKERING-6	PWR	CANDU 500B	1744	540	516	OPG	OH/AECL	1975-10	1983-11	1984-2	75.9	76.4	-
	CA-15	PICKERING-7	PWR	CANDU 500B	1744	540	516	OPG	OH/AECL	1976-3	1984-11	1985-1	72.2	72.5	-
	CA-16	PICKERING-8	PWR	CANDU 500B	1744	540	516	OPG	OH/AECL	1976-9	1986-1	1986-2	76.7	77.6	-
	CA-17	POINT LEPREAU	PWR	CANDU 6	2180	680	635	NBEPC	AECL	1975-5	1982-9	1983-2	59.9	61.5	-
	CN-2	GUANGDONG-1	PWR	M310	2905	984	944	GNP/JVC	FRAM	1987-8	1993-8	1994-2	90.3	90.7	-
	CN-3	GUANGDONG-2	PWR	M310	2905	984	944	GNP/JVC	FRAM	1988-4	1994-2	1994-5	87.7	87.9	-
	CN-6	LINGAO 1	PWR	M310	2905	990	938	LANPC	FRAM	1997-5	2002-2	2002-5	88.2	88.6	-
	CN-7	LINGAO 2	PWR	M310	2905	990	938	LANPC	FRAM	1997-11	2002-12	2003-1	88.4	88.5	-
	CN-12	LINGAO 3	PWR	CPRT000	2905	1080	1000	LDNPC	DFEC	2005-12	2010-7	2010-9	80.7	80.7	-
	CN-1	QINSHAN 1	PWR	CNP-300	966	310	298	GNPC	CNNC	1985-3	1991-12	1994-4	87.4	87.9	-
	CN-4	QINSHAN 2-1	PWR	CNP600	1930	650	610	NPQ/JVC	CNNC	1996-6	2002-2	2002-4	78.9	79.0	-
	CN-5	QINSHAN 2-2	PWR	CNP600	1930	650	610	NPQ/JVC	CNNC	1997-4	2004-3	2004-5	87.4	87.5	-
	CN-14	QINSHAN 2-3	PWR	CNP600	1930	650	610	NPQ/JVC	CNNC	2006-3	2010-8	2010-10	92.1	92.1	-
CN-8	QINSHAN 3-1	PWR	CANDU 6	2064	700	650	TQNPC	AECL	1998-6	2002-11	2002-12	87.5	87.9	-	
CN-9	QINSHAN 3-2	PWR	CANDU 6	2064	700	650	TQNPC	AECL	1998-9	2003-6	2003-7	90.2	90.3	-	
CN-10	TIANWAN 1	PWR	VVER V-428	3000	1000	933	JNPC	IZ	1999-10	2006-5	2007-5	78.2	78.2	-	
CN-11	TIANWAN 2	PWR	VVER V-428	3000	1000	933	JNPC	IZ	2000-10	2007-5	2007-8	83.3	83.3	-	
CZECH REP.	CZ-4	DUKOVANY-1	PWR	VVER V-213	1375	456	427	CEZ	SKODA	1979-1	1985-2	1985-5	88.4	88.9	-
	CZ-5	DUKOVANY-2	PWR	VVER V-213	1375	456	427	CEZ	SKODA	1979-1	1986-1	1986-3	88.7	89.2	-
	CZ-8	DUKOVANY-3	PWR	VVER V-213	1444	498	471	CEZ	SKODA	1979-3	1986-11	1986-12	85.8	86.5	-
	CZ-9	DUKOVANY-4	PWR	VVER V-213	1375	456	427	CEZ	SKODA	1979-3	1987-6	1987-7	86.0	86.7	-
	CZ-23	TEMLIN-1	PWR	VVER V-320	3000	1013	963	CEZ	SKODA	1987-2	2000-12	2002-6	67.5	67.6	DH
	CZ-24	TEMLIN-2	PWR	VVER V-320	3000	1013	963	CEZ	SKODA	1987-2	2002-12	2003-4	75.9	76.3	DH
	FI-1	LOVIISA-1	PWR	VVER V-213	1500	510	488	FORTUMPH	AEE	1971-5	1977-2	1977-5	91.2	91.9	-

The column Non-Electrical Applications indicates the use of the facility to provide: DH district heating.

TABLE 14. REACTORS IN OPERATION, 31 DEC. 2010 — continued

Country	Reactor		Type	Model	Capacity [MW]			Operator	NSSS Supplier	Construction Start	Grid Connection	Commercial Operation	EAF % 2001 to 2010	UCF % 2001 to 2010	Non-electrical Applics
	Code	Name			Thermal	Gross	Net								
	FI-2	LOVISA-2	PWR	VVER V-213	1500	510	488	FORTUMPH	AEE	1972-8	1980-11	1981-1	90.7	91.7	-
	FI-3	OLKILUOTO-1	BWR	BWR 2500	2500	910	880	TVO	ASEASTAL	1974-2	1978-9	1979-10	95.2	95.6	-
	FI-4	OLKILUOTO-2	BWR	BWR 2500	2500	890	860	TVO	ASEASTAL	1975-11	1980-2	1982-7	95.2	95.6	-
	FR-54	BELLEVILLE-1	PWR	P'4 REP 1300	3817	1363	1310	EDF	FRAM	1980-5	1987-10	1988-6	80.2	81.4	-
FR-55	BELLEVILLE-2	PWR	P'4 REP 1300	3817	1363	1310	EDF	FRAM	1980-8	1988-7	1989-1	80.9	83.1	-	
FR-32	BLAYAIS-1	PWR	CP1	2785	951	910	EDF	FRAM	1977-1	1981-6	1981-12	77.7	80.9	-	
FR-33	BLAYAIS-2	PWR	CP1	2785	951	910	EDF	FRAM	1977-1	1982-7	1983-2	79.7	81.6	-	
FR-34	BLAYAIS-3	PWR	CP1	2785	951	910	EDF	FRAM	1978-4	1983-8	1983-11	81.0	84.6	-	
FR-35	BLAYAIS-4	PWR	CP1	2785	951	910	EDF	FRAM	1978-4	1983-5	1983-10	79.1	81.9	-	
FR-13	BUGEY-2	PWR	CP0	2785	945	910	EDF	FRAM	1972-11	1978-5	1979-3	75.9	78.1	-	
FR-14	BUGEY-3	PWR	CP0	2785	945	910	EDF	FRAM	1973-9	1978-9	1979-3	66.7	71.5	-	
FR-15	BUGEY-4	PWR	CP0	2785	917	880	EDF	FRAM	1974-6	1979-3	1979-7	79.6	81.6	-	
FR-16	BUGEY-5	PWR	CP0	2785	917	880	EDF	FRAM	1974-7	1979-7	1980-1	82.5	85.6	-	
FR-50	CATTENOM-1	PWR	P'4 REP 1300	3817	1362	1300	EDF	FRAM	1979-10	1986-11	1987-4	83.0	85.3	-	
FR-53	CATTENOM-2	PWR	P'4 REP 1300	3817	1362	1300	EDF	FRAM	1980-7	1987-9	1988-2	82.5	85.2	-	
FR-60	CATTENOM-3	PWR	P'4 REP 1300	3817	1362	1300	EDF	FRAM	1982-6	1990-7	1991-2	77.1	78.7	-	
FR-65	CATTENOM-4	PWR	P'4 REP 1300	3817	1362	1300	EDF	FRAM	1983-9	1991-5	1992-1	84.6	86.1	-	
FR-40	CHINON-B-1	PWR	CP2	2785	954	905	EDF	FRAM	1977-3	1982-11	1984-2	74.2	77.9	-	
FR-41	CHINON-B-2	PWR	CP2	2785	954	905	EDF	FRAM	1977-3	1983-11	1984-8	77.1	78.7	-	
FR-56	CHINON-B-3	PWR	CP2	2785	954	905	EDF	FRAM	1980-10	1986-10	1987-3	78.1	80.4	-	
FR-57	CHINON-B-4	PWR	CP2	2785	954	905	EDF	FRAM	1981-2	1987-11	1988-4	76.1	79.0	-	
FR-62	CHOOZ-B-1	PWR	N4 REP 1450	4270	1560	1500	EDF	FRAM	1984-1	1996-8	2000-9	77.8	79.7	-	
FR-70	CHOOZ-B-2	PWR	N4 REP 1450	4270	1560	1500	EDF	FRAM	1985-12	1997-4	2000-5	80.2	83.3	-	
FR-72	CIVAUX-1	PWR	N4 REP 1450	4270	1561	1495	EDF	FRAM	1988-10	1997-12	2002-1	78.3	79.7	-	
FR-73	CIVAUX-2	PWR	N4 REP 1450	4270	1561	1495	EDF	FRAM	1991-4	1999-12	2002-4	83.1	84.9	-	
FR-42	CRUAS-1	PWR	CP2	2785	956	915	EDF	FRAM	1978-8	1983-4	1984-4	75.4	77.9	-	
FR-43	CRUAS-2	PWR	CP2	2785	956	915	EDF	FRAM	1978-11	1984-9	1985-4	75.8	78.5	-	
FR-44	CRUAS-3	PWR	CP2	2785	956	915	EDF	FRAM	1979-4	1984-5	1984-9	75.9	77.7	-	
FR-45	CRUAS-4	PWR	CP2	2785	956	915	EDF	FRAM	1979-10	1984-10	1985-2	73.5	75.6	-	

TABLE 14. REACTORS IN OPERATION, 31 DEC. 2010 — continued

Country	Reactor		Type	Model	Capacity [MW]		Operator	NSSS Supplier	Construction Start	Grid Connection	Commercial Operation	EAF % 2001 to 2010	UCF % 2001 to 2010	Non-electrical Applies
	Code	Name			Thermal	Gross								
	FR-22	DAMPIERRE-1	PWR	CP1	2785	937	890	EDF	1975-2	1980-3	1980-9	80.2	82.4	-
	FR-29	DAMPIERRE-2	PWR	CP1	2785	937	890	EDF	1975-4	1980-12	1981-2	79.1	80.8	-
	FR-30	DAMPIERRE-3	PWR	CP1	2785	937	890	EDF	1975-9	1981-1	1981-5	80.8	82.4	-
	FR-31	DAMPIERRE-4	PWR	CP1	2785	937	890	EDF	1975-12	1981-8	1981-11	77.2	79.6	-
	FR-11	FESSENHEIM-1	PWR	CP0	2660	920	880	EDF	1971-9	1977-4	1978-1	70.0	71.1	-
	FR-12	FESSENHEIM-2	PWR	CP0	2660	920	880	EDF	1972-2	1977-10	1978-4	73.8	75.3	-
	FR-46	FLAMANVILLE-1	PWR	P4 REP 1300	3817	1382	1330	EDF	1979-12	1985-12	1986-12	75.3	77.3	-
	FR-47	FLAMANVILLE-2	PWR	P4 REP 1300	3817	1382	1330	EDF	1980-5	1986-7	1987-3	78.7	80.7	-
	FR-61	GOLFECH-1	PWR	P4 REP 1300	3817	1363	1310	EDF	1982-11	1990-6	1991-2	83.8	85.8	-
	FR-68	GOLFECH-2	PWR	P4 REP 1300	3817	1363	1310	EDF	1984-10	1993-6	1994-3	84.7	86.5	-
	FR-20	GRAVELINES-1	PWR	CP1	2785	951	910	EDF	1975-2	1980-3	1980-11	81.1	82.7	-
	FR-21	GRAVELINES-2	PWR	CP1	2785	951	910	EDF	1975-3	1980-8	1980-12	81.0	82.5	-
	FR-27	GRAVELINES-3	PWR	CP1	2785	951	910	EDF	1975-12	1980-12	1981-6	78.8	80.7	-
	FR-28	GRAVELINES-4	PWR	CP1	2785	951	910	EDF	1976-4	1981-6	1981-10	82.4	83.4	-
	FR-51	GRAVELINES-5	PWR	CP1	2785	951	910	EDF	1979-10	1984-8	1985-1	81.4	83.0	-
	FR-52	GRAVELINES-6	PWR	CP1	2785	951	910	EDF	1979-10	1985-8	1985-10	81.5	82.5	-
	FR-58	NOGENT-1	PWR	P4 REP 1300	3817	1363	1310	EDF	1981-5	1987-10	1988-2	83.5	85.6	-
	FR-59	NOGENT-2	PWR	P4 REP 1300	3817	1363	1310	EDF	1982-1	1988-12	1989-5	79.3	80.5	-
	FR-36	PALUEL-1	PWR	P4 REP 1300	3817	1382	1330	EDF	1977-8	1984-6	1985-12	78.7	82.0	-
	FR-37	PALUEL-2	PWR	P4 REP 1300	3817	1382	1330	EDF	1978-1	1984-9	1985-12	77.9	79.3	-
	FR-38	PALUEL-3	PWR	P4 REP 1300	3817	1382	1330	EDF	1979-2	1985-9	1986-2	69.1	71.0	-
	FR-39	PALUEL-4	PWR	P4 REP 1300	3817	1382	1330	EDF	1980-2	1986-4	1986-6	78.7	81.3	-
	FR-63	PENLY-1	PWR	P4 REP 1300	3817	1382	1330	EDF	1982-9	1990-5	1990-12	82.6	83.5	-
	FR-64	PENLY-2	PWR	P4 REP 1300	3817	1382	1330	EDF	1984-8	1992-2	1992-11	84.5	85.6	-
	FR-48	ST. ALBAN-1	PWR	P4 REP 1300	3817	1381	1335	EDF	1979-1	1985-8	1986-5	77.7	79.4	-
	FR-49	ST. ALBAN-2	PWR	P4 REP 1300	3817	1381	1335	EDF	1979-7	1985-7	1987-3	78.1	80.6	-
	FR-17	ST. LAURENT-B-1	PWR	CP2	2785	956	915	EDF	1976-5	1981-1	1983-8	82.1	84.6	-
	FR-23	ST. LAURENT-B-2	PWR	CP1	2785	956	915	EDF	1976-7	1981-6	1983-8	79.6	81.6	-
	FR-18	TRICASTIN-1	PWR	CP1	2785	955	915	EDF	1974-11	1980-5	1980-12	80.8	84.9	-
	FR-19	TRICASTIN-2	PWR	CP1	2785	955	915	EDF	1974-12	1980-8	1980-12	81.1	83.6	-

TABLE 14. REACTORS IN OPERATION, 31 DEC. 2010 — continued

Country	Reactor		Type	Model	Capacity [MW]		Operator	NSSS Supplier	Construction Start	Grid Connection	Commercial Operation	EAF % 2001 to 2010	UCF % 2001 to 2010	Non-electrical Applics
	Code	Name			Thermal	Gross								
GERMANY	FR -25	TRICASTIN-3	PWR	CP1	2785	955	915	EDF	1975-4	1981-2	1981-5	79.3	81.8	-
	FR -26	TRICASTIN-4	PWR	CP1	2785	955	915	EDF	1975-5	1981-6	1981-11	79.9	82.0	-
	DE -12	BIBLIS-A (KWB A)	PWR	PWR	3517	1225	1167	RWE	1970-1	1974-8	1975-2	59.1	59.7	-
	DE -18	BIBLIS-B (KWB B)	PWR	PWR	3733	1300	1240	KWU	1972-2	1976-4	1977-1	67.8	69.0	-
	DE -32	BROKDORF (KBR)	PWR	PWR	3900	1480	1410	E.ON	1976-1	1986-10	1986-12	94.1	94.3	-
	DE -13	BRUNSBUEITTEL (KKB)	BWR	BWR '69	2292	806	771	KKB	1970-4	1976-7	1977-2	46.5	47.4	-
	DE -33	EMSLAND (KKE)	PWR	Konvoi	3850	1400	1329	KWU	1982-8	1988-4	1988-6	94.8	94.9	-
	DE -23	GRAFENRHEINFELD (KKG)	PWR	PWR	3765	1345	1275	E.ON	1975-1	1981-12	1982-6	89.2	89.3	-
	DE -27	GROHNDE (KWG)	PWR	PWR	3900	1430	1360	KWG	1976-6	1984-9	1985-2	93.4	94.1	-
	DE -26	GUNDREMMINGEN-B (GUN-B)	BWR	BWR 72	3840	1344	1284	GGG	1976-7	1984-3	1984-7	90.7	90.9	-
	DE -28	GUNDREMMINGEN-C (GUN-C)	BWR	BWR 72	3840	1344	1288	GGG	1976-7	1984-11	1985-1	88.5	89.3	-
	DE -16	ISAR-1 (KKI 1)	BWR	BWR '69	2575	912	878	E.ON	1972-5	1977-12	1979-3	89.3	90.6	-
	DE -31	ISAR-2 (KKI 2)	PWR	Konvoi	3950	1485	1410	E.ON	1982-9	1988-1	1988-4	94.4	94.6	-
	DE -20	KRUEMMEL (KKK)	BWR	BWR 69	3690	1402	1346	KKK	1974-4	1983-9	1984-3	53.9	54.2	-
	DE -15	NECKARWESTHEIM-1 (GKN 1)	PWR	PWR	2497	840	785	EnKK	1972-2	1976-6	1976-12	86.8	87.1	-
	DE -44	NECKARWESTHEIM-2 (GKN 2)	PWR	Konvoi	3850	1400	1310	EnKK	1982-11	1989-1	1989-4	92.9	93.3	-
	DE -14	PHILIPPSBURG-1 (KKP 1)	BWR	BWR '69	2575	926	890	EnKK	1970-10	1979-5	1980-3	85.9	86.7	-
DE -24	PHILIPPSBURG-2 (KKP 2)	PWR	PWR	3950	1488	1402	EnKK	1977-7	1984-12	1985-4	89.5	92.3	-	
DE -17	UNTERWESER (KKU)	PWR	PWR	3900	1410	1345	E.ON	1972-7	1978-9	1979-9	82.4	84.7	-	
HUNGARY	HU -1	PAKS-1	PWR	VVER V-213	1485	500	470	PAKS Zrt	1974-8	1982-12	1983-8	88.2	88.3	-
	HU -2	PAKS-2	PWR	VVER V-213	1485	500	473	PAKS Zrt	1974-8	1984-9	1984-11	71.2	71.2	DH
	HU -3	PAKS-3	PWR	VVER V-213	1485	500	473	PAKS Zrt	1979-10	1986-9	1986-12	86.2	87.0	DH
	HU -4	PAKS-4	PWR	VVER V-213	1485	500	473	PAKS Zrt	1979-10	1987-8	1987-11	87.5	87.6	DH
INDIA	IN -13	KAIGA-1	PHWR	Horizontal Pre	801	220	202	NPCIL	1989-9	2000-10	2000-11	68.1	90.0	-
	IN -14	KAIGA-2	PHWR	Horizontal Pre	801	220	202	NPCIL	1989-12	1999-12	2000-3	67.6	89.9	-
	IN -15	KAIGA-3	PHWR	Horizontal Pre	800	220	202	NPCIL	2002-3	2007-4	2007-5	39.7	70.3	-
	IN -9	KAKRAPAR-1	PHWR	Horizontal Pre	801	220	202	NPCIL	1984-12	1992-11	1993-5	56.3	67.1	-

The column Non-Electrical Applications indicates the use of the facility to provide: DH district heating.

TABLE 14. REACTORS IN OPERATION, 31 DEC. 2010 — continued

Country	Reactor		Type	Model	Capacity [MW]		Operator	NSSS Supplier	Construction Start	Grid Connection	Commercial Operation	EAF % 2001 to 2010	UCF % 2001 to 2010	Non-electrical Applies
	Code	Name			Thermal	Gross								
	IN-10	KAKRAPAR-2	PHWR	Horizontal Pre	801	220	202	NPCIL	1985-4	1995-3	1995-9	70.9	91.5	-
	IN-5	MADRAS-1	PHWR	Horizontal Pre	801	220	205	NPCIL	1971-1	1983-7	1984-1	46.6	65.3	DS
	IN-6	MADRAS-2	PHWR	Horizontal Pre	801	220	205	NPCIL	1985-9	1985-9	1986-3	55.2	78.1	DS
	IN-7	NARORA-1	PHWR	Horizontal Pre	801	220	202	NPCIL	1976-12	1989-7	1991-1	51.3	68.2	-
	IN-8	NARORA-2	PHWR	Horizontal Pre	801	220	202	NPCIL	1977-11	1992-1	1992-7	51.0	62.4	-
	IN-3	RAJASTHAN-1	PHWR	Horizontal Pre	693	100	90	NPCIL	1965-8	1972-11	1973-12	8.7	8.7	PH
	IN-4	RAJASTHAN-2	PHWR	Horizontal Pre	693	200	187	AECI/DAE	1968-4	1980-11	1981-4	64.0	67.2	PH
	IN-11	RAJASTHAN-3	PHWR	Horizontal Pre	801	220	202	NPCIL	1990-2	2000-3	2000-6	72.1	89.6	PH
	IN-12	RAJASTHAN-4	PHWR	Horizontal Pre	801	220	202	NPCIL	1990-10	2000-11	2000-12	73.3	91.4	PH
	IN-19	RAJASTHAN-5	PHWR	Horizontal Pre	801	220	202	NPCIL	2002-9	2009-12	2010-2	85.7	85.7	-
	IN-20	RAJASTHAN-6	PHWR	Horizontal Pre	801	220	202	NPCIL	2003-1	2010-3	2010-3	38.1	38.1	-
	IN-1	TARAPUR-1	BWR	BWR-1, Mark 2	530	160	150	GE	1964-10	1969-4	1969-10	82.9	83.8	-
	IN-2	TARAPUR-2	BWR	BWR-1, Mark 2	530	160	150	GE	1964-10	1969-5	1969-10	88.5	89.3	-
	IN-23	TARAPUR-3	PHWR	Horizontal Pre	1730	540	490	NPCIL	2000-5	2006-6	2006-8	58.9	89.2	-
	IN-24	TARAPUR-4	PHWR	Horizontal Pre	1730	540	490	NPCIL	2000-3	2005-6	2005-9	53.6	83.1	-
JAPAN	JP-5	FUKUSHIMA-DAIICHI-1	BWR	BWR-3	1380	460	439	TEPCO	1967-7	1970-11	1971-3	43.4	43.4	-
	JP-9	FUKUSHIMA-DAIICHI-2	BWR	BWR-4	2381	784	760	TEPCO	1969-6	1973-12	1974-7	66.7	66.7	-
	JP-10	FUKUSHIMA-DAIICHI-3	BWR	BWR-4	2381	784	760	TEPCO	1970-12	1974-10	1976-3	67.3	67.4	-
	JP-16	FUKUSHIMA-DAIICHI-4	BWR	BWR-4	2381	784	760	TEPCO	1973-2	1978-2	1978-10	64.3	64.7	-
	JP-17	FUKUSHIMA-DAIICHI-5	BWR	BWR-4	2381	784	760	TEPCO	1972-5	1977-9	1978-4	73.4	73.5	-
	JP-18	FUKUSHIMA-DAIICHI-6	BWR	BWR-5	3293	1100	1067	TEPCO	1973-10	1979-5	1979-10	64.9	65.1	-
	JP-25	FUKUSHIMA-DAINI-1	BWR	BWR-5	3293	1100	1067	TEPCO	1976-3	1981-7	1982-4	73.2	73.3	-
	JP-26	FUKUSHIMA-DAINI-2	BWR	BWR-5	3293	1100	1067	TEPCO	1979-5	1983-6	1984-2	63.1	63.1	-
	JP-35	FUKUSHIMA-DAINI-3	BWR	BWR-5	3293	1100	1067	TEPCO	1981-3	1984-12	1985-6	59.7	59.7	-
	JP-38	FUKUSHIMA-DAINI-4	BWR	BWR-5	3293	1100	1067	TEPCO	1981-5	1986-12	1987-8	59.9	59.9	-
	JP-12	GENKAI-1	PWR	M (2-loop)	1650	559	529	KYUSHU	1971-9	1975-2	1975-10	79.3	79.3	-
	JP-27	GENKAI-2	PWR	M (2-loop)	1650	559	529	KYUSHU	1977-2	1980-6	1981-3	78.8	78.8	-
	JP-45	GENKAI-3	PWR	M (4-loop)	3423	1180	1127	KYUSHU	1988-6	1993-6	1993-3	86.1	86.1	DS
	JP-46	GENKAI-4	PWR	M (4-loop)	3423	1180	1127	KYUSHU	1992-7	1996-11	1997-7	84.8	84.8	DS

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

TABLE 14. REACTORS IN OPERATION, 31 DEC. 2010 — continued

Country	Reactor		Type	Model	Capacity [MW]		Operator	NSSS Supplier	Construction Start	Grid Connection	Commercial Operation	EAF % 2001 to 2010	UCF % 2010	Non-electrical Applics	
	Code	Name			Thermal	Gross									Net
	JP-36	HAMAOKA-3	BWR	BWR-5	3293	1100	1056	CHUBU	TOSHIBA	1983-4	1987-1	1987-8	72.0	72.2	-
	JP-49	HAMAOKA-4	BWR	BWR-5	3293	1137	1092	CHUBU	TOSHIBA	1989-10	1993-1	1993-9	74.8	75.9	-
	JP-60	HAMAOKA-5	BWR	ABWR	3826	1287	1212	CHUBU	TOSHIBA	2000-7	2004-4	2005-1	46.1	55.9	-
	JP-58	HIGASHI DORI 1 (TOHOKU)	BWR	BWR-5	3293	1100	1067	TOHOKU	TOSHIBA	2000-11	2005-3	2005-12	81.8	81.9	-
	JP-23	IKATA-1	PWR	M (2-loop)	1650	566	538	SHIKOKU	MHI	1973-9	1977-2	1977-9	79.3	79.3	DS
	JP-32	IKATA-2	PWR	M (2-loop)	1650	566	538	SHIKOKU	MHI	1978-8	1981-8	1982-3	78.7	78.8	DS
	JP-47	IKATA-3	PWR	M (3-loop)	2860	890	846	SHIKOKU	MHI	1990-10	1994-3	1994-12	86.6	86.6	DS
	JP-33	KASHIWAZAKI KARIWA-1	BWR	BWR-5	3293	1100	1067	TEPCO	TOSHIBA	1980-6	1985-2	1985-9	40.1	42.9	-
	JP-39	KASHIWAZAKI KARIWA-2	BWR	BWR-5	3293	1100	1067	TEPCO	TOSHIBA	1985-11	1990-2	1990-9	38.3	38.3	-
	JP-52	KASHIWAZAKI KARIWA-3	BWR	BWR-5	3293	1100	1067	TEPCO	TOSHIBA	1989-3	1992-12	1993-8	40.3	42.1	-
	JP-53	KASHIWAZAKI KARIWA-4	BWR	BWR-5	3293	1100	1067	TEPCO	HITACHI	1990-3	1993-12	1994-8	42.6	47.3	-
	JP-40	KASHIWAZAKI KARIWA-5	BWR	BWR-5	3293	1100	1067	TEPCO	HITACHI	1985-6	1989-9	1990-4	44.0	49.1	-
	JP-55	KASHIWAZAKI KARIWA-6	BWR	ABWR	3926	1356	1315	TEPCO	TOSHIBA	1992-11	1996-1	1996-11	63.3	67.5	-
	JP-56	KASHIWAZAKI KARIWA-7	BWR	ABWR	3926	1356	1315	TEPCO	HITACHI	1993-7	1996-12	1997-7	61.2	64.9	-
	JP-4	MIHAMA-1	PWR	W (2-loop)	1031	340	320	KEPCO	WH	1967-2	1970-8	1970-11	70.3	70.5	-
	JP-6	MIHAMA-2	PWR	M (2-loop)	1456	500	470	KEPCO	MHI	1968-5	1972-4	1972-7	69.7	69.8	-
	JP-14	MIHAMA-3	PWR	M (3-loop)	2440	826	780	KEPCO	MHI	1972-8	1976-2	1976-12	64.8	64.8	-
	JP-15	OHI-1	PWR	W (4-loop)	3423	1175	1120	KEPCO	WH	1972-10	1977-12	1979-3	79.0	79.0	DS
	JP-19	OHI-2	PWR	W (4-loop)	3423	1175	1120	KEPCO	WH	1972-12	1978-10	1979-12	76.7	76.7	DS
	JP-50	OHI-3	PWR	M (4-loop)	3423	1180	1127	KEPCO	MHI	1987-10	1991-6	1991-12	74.7	74.7	-
	JP-51	OHI-4	PWR	M (4-loop)	3423	1180	1127	KEPCO	MHI	1988-6	1992-6	1993-2	85.6	85.6	-
	JP-22	ONAGAWA-1	BWR	BWR-4	1593	524	498	TOHOKU	TOSHIBA	1980-7	1983-11	1984-6	49.4	53.6	-
	JP-54	ONAGAWA-2	BWR	BWR-5	2436	825	796	TOHOKU	TOSHIBA	1991-4	1994-12	1995-7	67.5	71.6	-
	JP-57	ONAGAWA-3	BWR	BWR-5	2436	825	796	TOHOKU	TOSHIBA	1998-1	2001-5	2002-1	66.6	68.0	-
	JP-28	SENDAL-1	PWR	M (3-loop)	2660	890	846	KYUSHU	MHI	1979-12	1983-9	1984-7	83.3	83.3	-
	JP-37	SENDAL-2	PWR	M (3-loop)	2660	890	846	KYUSHU	MHI	1981-10	1985-4	1985-11	83.9	83.9	-
	JP-48	SHIKA-1	BWR	BWR-5	1593	540	505	HOKURIKU	HITACHI	1989-7	1993-1	1993-7	62.2	62.2	-
	JP-59	SHIKA-2	BWR	ABWR	3926	1206	1108	HOKURIKU	HITACHI	2001-8	2005-7	2006-3	46.9	46.9	-
	JP-7	SHIMANE-1	BWR	BWR-3	1380	460	439	CHUGOKU	HITACHI	1970-7	1973-12	1974-3	69.5	69.5	-
	JP-41	SHIMANE-2	BWR	BWR-5	2436	820	789	CHUGOKU	HITACHI	1985-2	1988-7	1989-2	72.8	72.9	-

The column Non-Electrical Applications indicates the use of the facility to provide: DS desalination.

TABLE 14. REACTORS IN OPERATION, 31 DEC. 2010 — continued

Country	Reactor		Type	Model	Capacity [MW]		Operator	NSSS Supplier	Construction Start	Grid Connection	Commercial Operation	EAF % 2001 to 2010	UCF % 2001 to 2010	Non-electrical Applies
	Code	Name			Thermal	Gross								
	JP-8	TAKAHAMA-1	PWR	M (3-loop)	2440	826	780	WH/MHI	1970-4	1974-3	1974-11	85.1	85.1	-
	JP-13	TAKAHAMA-2	PWR	M (3-loop)	2440	826	780	KEPCO	1971-3	1975-1	1975-11	76.9	77.0	-
	JP-29	TAKAHAMA-3	PWR	M (3-loop)	2660	870	830	KEPCO	1980-12	1984-5	1985-1	77.6	77.6	DS
	JP-30	TAKAHAMA-4	PWR	M (3-loop)	2660	870	830	KEPCO	1981-3	1984-11	1985-6	83.2	83.2	DS
	JP-21	TOKAI-2	BWR	BWR-5	3293	1100	1060	JAPCO	1973-10	1978-3	1978-11	71.1	71.3	-
	JP-43	TOMARI-1	PWR	M (2-loop)	1650	579	550	HEPCO	1985-4	1988-12	1989-6	85.3	85.3	-
	JP-44	TOMARI-2	PWR	M (2-loop)	1650	579	550	HEPCO	1985-6	1990-8	1991-4	80.8	80.8	-
	JP-64	TOMARI-3	PWR	M (3-loop)	2660	912	866	HEPCO	2004-11	2009-3	2009-12	100.0	100.0	-
	JP-3	TSURUGA-1	BWR	BWR-2	1070	357	340	JAPCO	1966-11	1969-11	1970-3	72.4	72.5	-
	JP-34	TSURUGA-2	PWR	M (4-loop)	3411	1160	1108	JAPCO	1982-11	1986-6	1987-2	71.3	71.6	-
KOREA REP.	KR-1	KORI-1	PWR	WH Δ60	1729	603	576	WH	1972-4	1977-6	1978-4	91.7	92.0	-
	KR-2	KORI-2	PWR	WH F	1882	675	637	WH	1972-4	1977-6	1978-4	91.7	92.0	-
	KR-5	KORI-3	PWR	WH F	2912	1035	1007	WH	1979-10	1983-4	1983-7	90.3	90.4	-
	KR-6	KORI-4	PWR	WH F	2912	1035	1007	WH	1979-10	1983-4	1983-7	90.3	90.4	-
	KR-21	SHIN-KORI-1	PWR	OPR-1000	2825	1048	1001	KHNP	2006-6	2010-8	2011-2	92.4	92.6	-
	KR-9	ULCHIN-1	PWR	France CPI	2785	985	945	KHNP	1983-1	1988-4	1988-9	89.0	89.2	-
	KR-10	ULCHIN-2	PWR	France CPI	2775	984	942	KHNP	1983-7	1989-4	1989-9	89.0	89.1	-
	KR-13	ULCHIN-3	PWR	OPR-1000	2825	1047	994	KHNP	1993-7	1998-1	1998-8	92.9	93.0	-
	KR-14	ULCHIN-4	PWR	OPR-1000	2825	1045	998	KHNP	1993-11	1998-12	1999-12	91.9	92.0	-
	KR-19	ULCHIN-5	PWR	OPR-1000	2815	1048	997	KHNP	1999-10	2003-12	2004-7	92.1	92.2	-
	KR-20	ULCHIN-6	PWR	OPR-1000	2825	1048	997	KHNP	2000-9	2005-1	2005-4	93.0	93.1	-
	KR-3	WOLSONG-1	PHWR	CANDU 6	2061	622	597	KHNP	1977-10	1982-12	1983-4	72.7	73.5	-
KR-4	WOLSONG-2	PHWR	CANDU 6	2061	740	710	KHNP	1992-6	1997-4	1997-7	92.5	92.6	-	
KR-15	WOLSONG-3	PHWR	CANDU 6	2061	729	707	KHNP	1994-3	1998-3	1998-7	93.3	93.4	-	
KR-16	WOLSONG-4	PHWR	CANDU 6	2061	730	708	KHNP	1994-7	1999-5	1999-10	93.7	93.8	-	
KR-7	YONGGANGWANG-1	PWR	WH F	2787	985	953	WH	1981-6	1986-3	1986-8	91.1	91.2	-	
KR-8	YONGGANGWANG-2	PWR	WH F	2787	978	947	KHNP	1981-12	1986-11	1987-6	91.5	91.6	-	
KR-11	YONGGANGWANG-3	PWR	OPR-1000	2825	1039	997	KHNP	1989-12	1994-10	1995-4	92.8	92.9	-	
KR-12	YONGGANGWANG-4	PWR	OPR-1000	2825	1039	994	KHNP	1990-5	1995-7	1996-1	91.8	91.8	-	

The column Non-Electrical Applications indicates the use of the facility to provide: DS desalination.

TABLE 14. REACTORS IN OPERATION, 31 DEC. 2010 — continued

Country	Reactor		Type	Model	Capacity [MW]		Operator	NSSS Supplier	Construction Start	Grid Connection	Commercial Operation	EAF % 2001 to 2010	UCF % 2001 to 2010	Non-electrical Applics
	Code	Name			Thermal	Gross								
	KR-17	YONGGWANG-5	PWR	OPR-1000	2825	1046	988	DHICKOPC	1997-6	2001-12	2002-5	87.8	87.9	-
	KR-18	YONGGWANG-6	PWR	OPR-1000	2825	1050	996	DHICKOPC	1997-11	2002-9	2002-12	89.0	89.2	-
MEXICO	MX-1	LAGUNA VERDE-1	BWR	BWR-5	2027	682	650	GE	1976-10	1989-4	1990-7	80.3	80.9	-
	MX-2	LAGUNA VERDE-2	BWR	BWR-5	2027	682	650	GE	1977-6	1994-11	1995-4	85.5	85.9	-
NETHERLANDS	NL-2	BORSSELE	PWR	2 loops PWR	1366	515	482	S/KWU	1969-7	1973-7	1973-10	92.6	92.8	-
PAKISTAN	PK-2	CHASNUPP 1	PWR	CNP-300	999	325	300	PAEC	1993-8	2000-6	2000-9	71.9	72.5	-
	PK-1	KANUPP	PHWR	CANDU-137 MW	433	137	125	PAEC	1966-8	1971-10	1972-12	34.9	36.0	DS
ROMANIA	RO-1	CERNAVODA-1	PHWR	CANDU 6	2180	706	650	SNN	1982-7	1986-7	1986-12	89.3	90.5	DH
	RO-2	CERNAVODA-2	PHWR	CANDU 6	2180	706	650	SNN	1983-7	2007-8	2007-10	94.7	95.6	DH
RUSSIA	RU-96	BALAKOVO-1	PWR	VVER V-320	3000	1000	950	REA	1980-12	1985-12	1986-5	84.9	86.4	DH, PH
	RU-97	BALAKOVO-2	PWR	VVER V-320	3000	1000	950	REA	1981-8	1987-10	1988-1	83.7	86.2	DH, PH
	RU-98	BALAKOVO-3	PWR	VVER V-320	3000	1000	950	REA	1982-11	1988-12	1989-4	83.3	86.0	DH, PH
	RU-99	BALAKOVO-4	PWR	VVER V-320	3200	1000	950	REA	1984-4	1983-4	1983-12	83.4	86.0	DH, PH
	RU-21	BELOYARSKY-3 (BN-600)	FBR	BN-600	1470	600	560	REA	1969-1	1980-4	1981-11	77.3	77.9	DH, PH
	RU-141	BILIBINO-1	LWGR	EGP-6	62	12	11	REA	1970-1	1974-1	1974-4	40.5	64.2	DH
	RU-142	BILIBINO-2	LWGR	EGP-6	62	12	11	REA	1970-1	1974-12	1975-2	54.0	81.3	DH
	RU-143	BILIBINO-3	LWGR	EGP-6	62	12	11	REA	1970-1	1975-12	1976-2	55.2	81.2	DH
	RU-144	BILIBINO-4	LWGR	EGP-6	62	12	11	REA	1970-1	1976-12	1977-1	52.7	79.4	DH
	RU-30	KALININ-1	PWR	VVER V-338	3000	1000	950	REA	1970-1	1984-5	1985-6	82.2	83.0	DH, PH
	RU-31	KALININ-2	PWR	VVER V-338	3000	1000	950	REA	1982-2	1986-12	1987-3	83.1	84.1	DH, PH
	RU-36	KALININ-3	PWR	VVER V-338	3200	1000	950	REA	1985-10	2004-12	2005-11	83.4	83.7	PH
	RU-12	KOLA-1	PWR	VVER V-230	1375	440	411	REA	1970-5	1973-6	1973-12	68.8	83.5	DH, PH
	RU-13	KOLA-2	PWR	VVER V-230	1375	440	411	REA	1970-5	1974-12	1975-2	67.9	82.5	DH, PH
RU-32	KOLA-3	PWR	VVER V-213	1375	440	411	REA	1977-4	1981-3	1982-12	71.0	84.9	DH, PH	
RU-33	KOLA-4	PWR	VVER V-213	1375	440	411	REA	1976-8	1984-10	1984-12	73.3	86.3	DH, PH	

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

TABLE 14. REACTORS IN OPERATION, 31 DEC. 2010 — continued

Country	Reactor		Type	Model	Capacity [MW]		Operator	NSSS Supplier	Construction Start	Grid Connection	Commercial Operation	EAF % 2001 to 2010	UCF % 2001 to 2010	Non-electrical Applies	
	Code	Name			Thermal	Gross									Net
	RU-17	KURSK-1	LWGR	RBMK-1000	3200	1000	925	REA	ROSATOM	1972-6	1976-12	1977-10	68.0	70.7	DH, PH
	RU-22	KURSK-2	LWGR	RBMK-1000	3200	1000	925	REA	ROSATOM	1973-1	1979-1	1979-8	67.1	67.9	DH, PH
	RU-38	KURSK-3	LWGR	RBMK-1000	3200	1000	925	REA	ROSATOM	1978-4	1983-10	1984-3	68.1	69.4	DH, PH
	RU-39	KURSK-4	LWGR	RBMK-1000	3200	1000	925	REA	ROSATOM	1981-5	1985-12	1986-2	73.2	74.3	DH, PH
	RU-15	LENINGRAD-1	LWGR	RBMK-1000	3200	1000	925	REA	ROSATOM	1970-3	1973-12	1974-11	77.8	79.1	DH, PH
	RU-16	LENINGRAD-2	LWGR	RBMK-1000	3200	1000	925	REA	ROSATOM	1970-6	1975-7	1976-2	74.9	76.5	DH, PH
	RU-34	LENINGRAD-3	LWGR	RBMK-1000	3200	1000	925	REA	ROSATOM	1973-12	1979-12	1980-6	70.3	72.2	DH, PH
	RU-35	LENINGRAD-4	LWGR	RBMK-1000	3200	1000	925	REA	ROSATOM	1975-2	1981-2	1981-8	67.8	69.8	DH, PH
	RU-9	NOVOORONEZH-3	PWR	VVER V-179	1375	417	385	REA	ROSATOM	1967-7	1971-12	1972-6	64.2	65.2	DH, PH
	RU-11	NOVOORONEZH-4	PWR	VVER V-179	1375	417	385	REA	ROSATOM	1967-7	1972-12	1973-3	77.3	79.2	DH, PH
	RU-20	NOVOORONEZH-5	PWR	VVER V-187	3000	1000	950	REA	ROSATOM	1974-3	1980-5	1981-2	70.6	71.7	DH, PH
	RU-59	ROSTOV-1	PWR	VVER V-3201	3200	1000	950	REA	ROSATOM	1981-9	2001-3	2001-12	86.2	86.7	-
	RU-62	ROSTOV-2	PWR	VVER V-3201	3200	1000	950	REA	ROSATOM	1983-5	2010-3	2010-12	-	-	-
	RU-23	SMOLENSK-1	LWGR	RBMK-1000	3200	1000	925	REA	ROSATOM	1975-10	1982-12	1983-9	73.0	74.5	DH, PH
	RU-24	SMOLENSK-2	LWGR	RBMK-1000	3200	1000	925	REA	ROSATOM	1976-6	1985-5	1985-7	73.0	74.5	DH, PH
	RU-67	SMOLENSK-3	LWGR	RBMK-1000	3200	1000	925	REA	ROSATOM	1984-5	1990-1	1990-10	81.9	82.7	DH, PH
SLOVAKIA	SK -13	BOHUNICE-3	PWR	VVER V-213	1471	505	472	SE,plc	SKODA	1976-12	1984-8	1985-2	80.0	83.3	DH, PH
	SK -14	BOHUNICE-4	PWR	VVER V-213	1471	505	472	SE,plc	SKODA	1976-12	1985-12	1985-12	81.7	84.5	DH, PH
	SK -6	MOCHOVCE-1	PWR	VVER V-213	1471	470	436	SE,plc	SKODA	1983-10	1998-7	1998-10	84.6	86.0	-
	SK -7	MOCHOVCE-2	PWR	VVER V-213	1471	470	436	SE,plc	SKODA	1983-10	1999-12	2000-4	83.7	85.2	-
SLOVENIA	SI-1	KRSKO	PWR	Westinghouse 2	1994	727	666	NEK	WH	1975-3	1981-10	1983-1	91.1	92.2	-
SOUTH AFRICA	ZA -1	KOEBERG-1	PWR	CP1	2775	940	900	ESKOM	FRAM	1976-7	1984-4	1984-7	77.8	79.4	-
	ZA -2	KOEBERG-2	PWR	CP1	2775	940	900	ESKOM	FRAM	1976-7	1985-7	1985-11	77.9	81.4	-
SPAIN	ES -6	ALMARAZ-1	PWR	WE 3-loops	2947	1045	1008	CNAT	WH	1973-7	1981-5	1983-9	91.6	92.8	-
	ES -7	ALMARAZ-2	PWR	WE 3-loops	2729	980	956	CNAT	WH	1973-7	1983-10	1984-7	89.7	90.8	-
	ES -8	ASCO-1	PWR	WE 3-loops	2941	1033	995	ANAV	WH	1974-5	1983-8	1984-12	86.4	87.5	-

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

TABLE 14. REACTORS IN OPERATION, 31 DEC. 2010 — continued

Country	Reactor		Type	Model	Capacity [MW]			Operator	NSSS Supplier	Construction Start	Grid Connection	Commercial Operation	EAF % 2001 to 2010	UCF % 2001 to 2010	Non-electrical Applics
	Code	Name			Thermal	Gross	Net								
	ES -9	ASCO-2	PWR	WE 3-loops	2941	1027	997	ANAV	WH	1975-3	1985-10	1986-3	87.4	88.6	-
	ES -10	COFRETES	BWR	BWR-6	3237	1092	1064	ID	GE	1975-9	1984-10	1985-3	86.4	87.4	-
	ES -2	SANTA MARIA DE GARONA	BWR	BWR-3	1381	486	446	NUCLENOR	GE	1966-9	1971-3	1971-5	92.4	92.9	-
	ES -11	TRILLO-1	PWR	PWR 3 loops	3010	1066	1003	CNAT	KWU	1979-8	1988-5	1988-8	89.6	89.8	-
	ES -16	VANDELLOS-2	PWR	WE 3-loops	2941	1087	1045	ANAV	WH	1980-12	1987-12	1988-3	78.3	79.2	-
	SE -9	FORSMARK-1	BWR	BWR 75	2928	1033	978	FKA	ABBATOM	1973-6	1980-6	1980-12	85.7	87.6	-
	SE -11	FORSMARK-2	BWR	BWR 75	2928	1028	990	FKA	ABBATOM	1975-1	1981-1	1981-7	78.4	80.0	-
SE -14	FORSMARK-3	BWR	BWR 3000	3300	1212	1170	FKA	ABBATOM	1979-1	1985-3	1985-8	86.0	87.7	-	
SE -2	OSKARSHAMN-1	BWR	ABB BWR	1375	492	473	OKG	ABBATOM	1966-8	1971-8	1972-2	67.5	68.3	-	
SE -3	OSKARSHAMN-2	BWR	ABB BWR	1800	661	638	OKG	ABBATOM	1969-9	1974-10	1975-1	82.8	84.2	-	
SE -12	OSKARSHAMN-3	BWR	BWR 75	3900	1450	1400	OKG	ABBATOM	1980-5	1985-3	1985-8	73.1	73.9	-	
SE -4	RINGHALS-1	BWR	BWR	2540	893	855	RAB	ABBATOM	1969-2	1974-10	1976-1	70.0	71.2	-	
SE -5	RINGHALS-2	PWR	WE (3 loops)	2660	917	813	RAB	WH	1970-10	1974-8	1975-5	80.0	81.7	-	
SE -7	RINGHALS-3	PWR	WE (3 loops)	3135	1102	1051	RAB	WH	1972-9	1980-9	1981-9	83.3	86.1	-	
SE -10	RINGHALS-4	PWR	W 3-loop	2775	981	935	RAB	WH	1973-11	1982-6	1983-11	87.9	89.7	-	
SWITZERLAND	CH -1	BEZNAU-1	PWR	WH - 2 loops	1130	380	365	Axpo AG	WH	1965-9	1969-7	1969-9	92.9	93.1	DH
	CH -3	BEZNAU-2	PWR	WH - 2 loops	1130	380	365	Axpo AG	WH	1968-1	1971-10	1971-12	91.3	91.3	DH
	CH -4	GOESGEN	PWR	PWR 3 Loop	3002	1035	970	KWU	KWU	1973-12	1979-2	1979-11	92.8	93.2	PH
	CH -5	LEIBSTADT	BWR	BWR 6	3600	1245	1165	KKL	GETSCO	1974-1	1984-5	1984-12	86.5	87.3	-
	CH -2	MUEHLEBERG	BWR	BWR 4	1097	390	373	BKW	GETSCO	1967-3	1971-7	1972-11	90.3	91.7	-
UK	GB -18A	DUNGENESS-B1	GCR	AGR	1500	615	520	BE	APC	1965-10	1983-4	1985-4	50.3	50.6	-
	GB -18B	DUNGENESS-B2	GCR	AGR	1500	615	520	BE	APC	1965-10	1985-12	1989-4	58.6	59.0	-
	GB -19A	HARTLEPOOL-A1	GCR	AGR	1500	655	595	BE	NPC	1968-10	1983-8	1989-4	60.5	60.5	-
	GB -19B	HARTLEPOOL-A2	GCR	AGR	1500	655	595	BE	NPC	1968-10	1984-10	1989-4	62.5	62.5	-
	GB -20A	HEYSHAM-A1	GCR	AGR	1500	625	585	BE	NPC	1970-12	1983-7	1989-4	61.9	62.1	-
	GB -20B	HEYSHAM-A2	GCR	AGR	1500	625	575	BE	NPC	1970-12	1984-10	1989-4	55.7	55.9	-
	GB -22A	HEYSHAM-B1	GCR	AGR	1550	680	620	BE	NPC	1980-8	1988-7	1989-4	84.1	84.4	-

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

TABLE 14. REACTORS IN OPERATION, 31 DEC. 2010 — continued

Country	Reactor		Type	Model	Capacity [MW]		Operator	NSSS Supplier	Construction Start	Grid Connection	Commercial Operation	EAF % 2001 to 2010	UCF % 2001 to 2010	Non-electrical Applies
	Code	Name			Thermal	Gross								
	GB-22B	HEYSHAM-B2	GCR	AGR	1550	680	620	NPC	1980-8	1988-11	1989-4	78.8	79.2	-
	GB-16A	HINKLEY POINT-B1	GCR	AGR	1494	655	410	BE	1967-9	1976-10	1978-10	74.4	74.5	-
	GB-16B	HINKLEY POINT-B2	GCR	AGR	1494	655	430	BE	1967-9	1976-2	1976-9	71.4	71.6	-
	GB-17A	HUNTERSTON-B1	GCR	AGR	1496	644	430	BE	1967-11	1976-2	1976-2	71.5	71.6	-
	GB-17B	HUNTERSTON-B2	GCR	AGR	1496	644	430	BE	1967-11	1977-3	1977-3	75.8	76.0	-
	GB-11A	OLDBURY-A1	GCR	MAGNOX	730	230	217	MEL	1962-5	1967-11	1967-12	52.5	52.5	-
	GB-11B	OLDBURY-A2	GCR	MAGNOX	660	230	217	TPNG	1962-5	1968-4	1968-9	66.8	66.8	-
	GB-24	SIZEWELL-B	PWR	SNUPPS	3425	1250	1188	BE	1988-7	1995-2	1995-9	83.4	83.5	-
	GB-23A	TORNES 1	GCR	AGR	1623	682	600	BE	1980-8	1988-5	1988-5	74.5	75.1	-
	GB-23B	TORNES 2	GCR	AGR	1623	682	605	BE	1980-8	1989-2	1989-2	74.4	75.3	-
	GB-13A	WYLFA 1	GCR	MAGNOX	1920	540	490	MEL	1963-9	1971-1	1971-11	70.9	71.3	-
	GB-13B	WYLFA 2	GCR	MAGNOX	1920	540	490	MEL	1963-9	1971-7	1972-1	63.2	63.5	-
UKRAINE	UA-40	KHMELNITSKI-1	PWR	VVER V-320	3000	1000	950	NNEGC	1981-11	1987-12	1988-8	80.3	81.6	DH
	UA-41	KHMELNITSKI-2	PWR	VVER V-320	3000	1000	950	PAIP	1985-2	2004-8	2005-12	74.8	75.5	DH
	UA-27	ROVNO-1	PWR	VVER V-213	1375	420	381	PAIP	1973-8	1980-12	1981-9	70.2	71.1	DH
	UA-28	ROVNO-2	PWR	VVER V-213	1375	415	376	NNEGC	1973-10	1981-12	1982-7	78.4	79.5	DH
	UA-29	ROVNO-3	PWR	VVER V-320	3000	1000	950	NNEGC	1980-2	1986-12	1987-5	68.9	70.9	DH
	UA-69	ROVNO-4	PWR	VVER V-320	3000	1000	950	NNEGC	1986-8	2004-10	2006-4	68.1	70.6	DH
	UA-44	SOUTH UKRAINE-1	PWR	VVER V-302	3000	1000	950	PAA	1977-3	1982-12	1983-10	73.3	75.4	DH
	UA-45	SOUTH UKRAINE-2	PWR	VVER V-338	3000	1000	950	NNEGC	1979-10	1985-1	1985-4	76.7	78.1	DH
	UA-48	SOUTH UKRAINE-3	PWR	VVER V-320	3000	1000	950	NNEGC	1985-2	1989-9	1989-12	70.3	73.4	DH
	UA-54	ZAPOROZHE-1	PWR	VVER V-320	3000	1000	950	PAIP	1980-4	1984-12	1985-12	79.8	81.3	DH
	UA-56	ZAPOROZHE-2	PWR	VVER V-320	3000	1000	950	PAIP	1981-1	1985-7	1986-2	80.6	82.1	DH
	UA-78	ZAPOROZHE-3	PWR	VVER V-320	3000	1000	950	PAIP	1982-4	1986-12	1987-3	80.8	84.5	DH
	UA-79	ZAPOROZHE-4	PWR	VVER V-320	3000	1000	950	NNEGC	1983-4	1987-12	1988-4	81.1	85.0	DH
	UA-126	ZAPOROZHE-5	PWR	VVER V-320	3000	1000	950	NNEGC	1985-11	1989-8	1989-10	80.2	82.5	DH
UA-127	ZAPOROZHE-6	PWR	VVER V-320	3000	1000	950	NNEGC	1986-6	1995-10	1996-9	81.9	83.8	DH	
USA	US-313	ARKANSAS ONE-1	PWR	B&W (L-loop)_D	2568	880	842	ENERGY	1968-10	1974-8	1974-12	90.9	90.9	-

The column Non-Electrical Applications indicates the use of the facility to provide: DH district heating.

TABLE 14. REACTORS IN OPERATION, 31 DEC. 2010 — continued

Country	Reactor		Type	Model	Capacity [MW]		Operator	NSSS Supplier	Construction Start	Grid Connection	Commercial Operation	EAF % 2001 to 2010	UCF % 2001 to 2010	Non-electrical Applics
	Code	Name			Thermal	Gross								
	US-368	ARKANSAS ONE-2	PWR	CE (2-loop) DR	3026	1040	993	ENERGY CE	1968-12	1978-12	1980-3	93.9	93.9	-
	US-334	BEAVER VALLEY-1	PWR	W (3-loop)	2689	923	892	FENOC WH	1970-6	1976-6	1976-10	91.2	91.2	-
	US-412	BEAVER VALLEY-2	PWR	W (3-loop)	2889	923	885	FENOC WH	1974-5	1987-8	1987-11	93.9	93.9	-
	US-456	BRAIDWOOD-1	PWR	W (4-loop)	3587	1240	1178	EXELON WH	1975-8	1987-7	1988-7	95.4	95.4	-
	US-457	BRAIDWOOD-2	PWR	W (4-loop) DRY	3587	1213	1152	EXELON WH	1975-8	1987-8	1988-10	95.6	95.6	-
	US-259	BROWNS FERRY-1	BWR	BWR-4 (Mark 1)	3458	1152	1093	TVA GE	1967-5	1973-10	1974-8	89.8	89.8	-
	US-260	BROWNS FERRY-2	BWR	BWR-4 (Mark 1)	3458	1155	1104	TVA GE	1967-5	1974-8	1975-3	91.6	91.6	-
	US-296	BROWNS FERRY-3	BWR	BWR-4 (Mark 1)	3458	1400	1105	TVA GE	1968-7	1976-9	1977-3	92.6	92.6	-
	US-325	BRUNSWICK-1	BWR	BWR-4 (Mark 1)	2923	990	938	PROGRESS GE	1970-2	1976-12	1977-3	91.7	91.9	-
	US-324	BRUNSWICK-2	BWR	BWR-4 (Mark 1)	2923	989	920	PROGRESS GE	1970-2	1975-4	1975-11	92.0	92.0	-
	US-454	BYRON-1	PWR	W (4-loop) DR	3587	1225	1164	EXELON WH	1975-4	1985-3	1985-9	95.5	95.5	-
	US-455	BYRON-2	PWR	W (4-loop) DR	3587	1196	1136	EXELON WH	1975-4	1987-2	1987-8	95.6	95.6	-
	US-483	CALLAWAY-1	PWR	W (4-loop) DRY	3565	1236	1190	AmerenUE WH	1975-9	1984-10	1984-12	87.8	87.8	-
	US-317	CALVERT CLIFFS-1	PWR	CE (2-loop) (D)	2700	918	855	CONSTELL CE	1968-6	1975-1	1975-5	92.0	92.0	-
	US-318	CALVERT CLIFFS-2	PWR	CE (2-loop) (D)	2700	911	850	CONSTELL CE	1968-6	1976-12	1977-4	93.9	93.9	-
	US-413	CATAWBA-1	PWR	W (4-loop) (IC)	3411	1188	1129	DUKEENER WH	1974-5	1985-1	1986-6	92.0	92.0	-
	US-414	CATAWBA-2	PWR	W (4-loop) (IC)	3411	1188	1129	DUKEENER WH	1974-5	1986-5	1986-8	91.5	91.5	-
	US-461	CLINTON-1	BWR	BWR-6 (Mark 3)	3473	1098	1065	EXELON GE	1975-10	1987-4	1987-11	94.5	94.6	-
	US-397	COLUMBIA	BWR	BWR-5 (Mark 2)	3486	1200	1131	ENERGYNW GE	1972-8	1984-5	1984-12	89.8	89.8	-
	US-445	COMANCHE PEAK-1	PWR	W (4-loop) DRY	3612	1259	1209	LUMINANT WH	1974-12	1990-4	1990-8	92.4	92.4	-
	US-446	COMANCHE PEAK-2	PWR	W (4-loop) DRY	3458	1189	1158	LUMINANT WH	1974-12	1993-4	1993-8	94.6	94.6	-
	US-298	COOPER	BWR	BWR-4 (Mark 1)	2381	801	774	ENERGY GE	1968-6	1974-5	1974-7	89.5	89.5	-
	US-302	CRYSTAL RIVER-3	PWR	B&W (L-loop)	2568	890	860	PROGRESS B&W	1968-9	1977-1	1977-3	81.1	81.3	-
	US-346	DAVIS BESSE-1	PWR	B&W (R-loop)	2772	925	894	FENOC B&W	1970-9	1977-8	1978-7	71.2	71.2	-
	US-275	DIABLO CANYON-1	PWR	W (4-loop)	3338	1136	1122	PG&E WH	1968-4	1984-11	1985-5	90.4	90.4	-
	US-323	DIABLO CANYON-2	PWR	W (4-loop)	3411	1164	1118	PG&E WH	1970-12	1985-10	1986-3	90.9	91.0	-
	US-315	DONALD COOK-1	PWR	W (4-loop) ICE	3304	1077	1009	AEP WH	1969-3	1975-2	1975-8	77.8	77.9	-
	US-316	DONALD COOK-2	PWR	W (4-loop) ICE	3468	1133	1060	AEP WH	1969-3	1978-3	1978-7	87.0	87.0	-
	US-237	DRESDEN-2	BWR	BWR-3 (Mark 1)	2527	913	867	EXELON GE	1966-1	1970-4	1970-6	93.2	93.2	-
	US-249	DRESDEN-3	BWR	BWR-3 (Mark 1)	2527	913	867	EXELON GE	1966-10	1971-7	1971-11	93.6	93.6	-

TABLE 14. REACTORS IN OPERATION, 31 DEC. 2010 — continued

Country	Reactor		Type	Model	Capacity [MW]		Operator	NSSS Supplier	Construction Start	Grid Connection	Commercial Operation	EAF % 2001 to 2010	UCF % 2001 to 2010	Non-electrical Applies
	Code	Name			Thermal	Gross								
	US-331	DUANE ARNOLD-1	BWR	BWR-4 (Mark 1)	1912	614	601	NEXTERA	1970-6	1974-5	1975-2	91.3	91.4	-
	US-341	ENRICO FERMI-2	BWR	BWR-4 (Mark 1)	3430	1154	1106	DTEDISON	1972-9	1986-9	1988-1	88.3	88.3	-
	US-348	FARLEY-1	PWR	W (3-loop)	2775	895	851	SOUTHERN	1970-10	1977-8	1977-12	91.5	91.5	-
	US-364	FARLEY-2	PWR	W (3-loop) DRY	2775	905	860	SOUTHERN	1970-10	1981-5	1981-7	90.5	90.5	-
	US-333	FITZPATRICK	BWR	BWR-4 (Mark 1)	2536	882	855	ENERGY	1968-9	1975-2	1975-7	94.4	94.7	-
	US-285	FORT CALHOUN-1	PWR	CE (2-loop)	1500	512	478	OPPD	1968-6	1973-8	1973-9	87.8	87.8	-
	US-416	GRAND GULF-1	BWR	BWR-6 (Mark 3)	3833	1333	1251	ENERGY	1974-5	1984-10	1985-7	92.7	92.9	-
	US-261	H.B. ROBINSON-2	PWR	W (3-loop) DRY	2339	745	724	PROGRESS	1967-4	1970-9	1971-3	88.7	88.7	-
	US-321	HATCH-1	BWR	BWR-4 (Mark 1)	2804	898	876	SOUTHERN	1968-9	1974-11	1975-12	92.0	92.0	-
	US-366	HATCH-2	BWR	BWR-4 (Mark 1)	2804	921	883	SOUTHERN	1972-2	1978-9	1979-9	91.3	91.3	-
	US-354	HOPE CREEK-1	BWR	BWR-4 (Mark 1)	3339	1376	1191	PSEG	1976-3	1986-8	1986-12	88.8	88.8	-
	US-247	INDIAN POINT-2	PWR	W (4-loop) DRY	3216	1062	1022	ENERGY	1966-10	1973-6	1974-8	93.7	93.7	-
	US-286	INDIAN POINT-3	PWR	W (4-loop) DRY	3216	1065	1040	ENERGY	1968-11	1976-4	1976-8	94.3	94.3	-
	US-305	KEWAUNEE	PWR	W (2-loop) DRY	1772	581	556	DOMINION	1968-8	1974-4	1974-6	86.1	86.1	-
	US-373	LASALLE-1	BWR	BWR-5 (Mark 2)	3489	1177	1118	EXELON	1973-9	1982-9	1984-1	95.7	95.7	-
	US-374	LASALLE-2	BWR	BWR-5 (Mark 2)	3489	1179	1120	EXELON	1973-9	1984-4	1984-10	95.4	95.4	-
	US-352	LIMERICK-1	BWR	BWR-4 (Mark 2)	3458	1194	1130	EXELON	1974-6	1985-4	1986-2	96.7	96.7	-
	US-353	LIMERICK-2	BWR	BWR-4 (Mark 2)	3458	1194	1134	EXELON	1974-6	1989-9	1990-1	96.0	96.0	-
	US-369	MCGUIRE-1	PWR	W (4-loop) ICE	3411	1158	1100	DUKEENER	1971-4	1981-9	1981-12	90.6	90.6	-
	US-370	MCGUIRE-2	PWR	W (4-loop) IC	3411	1158	1100	DUKEENER	1971-4	1983-5	1984-3	93.0	93.0	-
	US-336	MILLSTONE-2	PWR	COMB CE DRY	2700	910	869	DOMINION	1969-11	1975-11	1975-12	90.1	90.4	-
	US-423	MILLSTONE-3	PWR	W (4-loop) DRY	3411	1253	1233	DOMINION	1974-8	1986-2	1986-4	91.1	91.1	-
	US-263	MONTICELLO	BWR	BWR-3	1775	600	572	NSP	1967-6	1971-3	1971-6	91.5	91.5	-
	US-220	NINE MILE POINT-1	BWR	BWR-2 (Mark 1)	1850	642	621	CONSTELL	1965-4	1969-11	1969-12	92.4	92.4	-
	US-410	NINE MILE POINT-2	BWR	BWR-5 (Mark 2)	3467	1205	1143	CONSTELL	1975-8	1987-8	1988-3	93.0	93.0	-
	US-338	NORTH ANNA-1	PWR	W (3-loop)	2893	973	903	DOMINION	1971-2	1978-4	1978-6	92.1	92.1	-
	US-339	NORTH ANNA-2	PWR	W (3-loop)	2940	994	972	DOMINION	1971-2	1980-8	1980-12	88.8	86.8	-
	US-269	OCONEE-1	PWR	B&W (L-loop)	2568	891	846	DUKEENER	1967-11	1973-5	1973-7	88.8	88.8	-
	US-270	OCONEE-2	PWR	B&W (L-loop)	2568	891	846	DUKEENER	1967-11	1973-12	1974-9	90.5	90.5	-
	US-287	OCONEE-3	PWR	B&W (L-loop)	2568	891	846	DUKEENER	1967-11	1974-9	1974-12	88.5	88.5	-

TABLE 14. REACTORS IN OPERATION, 31 DEC. 2010 — continued

Country	Reactor		Type	Model	Capacity [MW]		Operator	NSSS Supplier	Construction Start	Grid Connection	Commercial Operation	EAF % 2001 to 2010	UCF % 2001 to 2010	Non-electrical Applics
	Code	Name			Thermal	Gross								
	US-219	OYSTER CREEK	BWR	BWR-2 (Mark 1)	2930	652	614	GE	1964-12	1969-9	1969-12	93.5	93.6	-
	US-255	PALISADES	PWR	CE (2-loop) DR	2565	842	778	EXELON	1967-3	1971-12	1971-12	84.5	84.6	-
	US-528	PALO VERDE-1	PWR	CE (2-loop) DR	3990	1414	1311	CE	1976-5	1985-6	1986-1	84.1	84.2	-
	US-529	PALO VERDE-2	PWR	COMB CE80 DR	3990	1414	1314	APS	1976-6	1986-9	1986-9	87.6	87.8	-
	US-530	PALO VERDE-3	PWR	COMB CE80 DR	3990	1346	1317	APS	1976-6	1987-11	1988-1	85.6	85.8	-
	US-277	PEACH BOTTOM-2	BWR	BWR-4 (Mark 1)	3514	1171	1122	EXELON	1968-1	1974-2	1974-2	95.3	95.3	-
	US-278	PEACH BOTTOM-3	BWR	BWR-4 (Mark 1)	3514	1171	1112	EXELON	1968-1	1974-9	1974-12	96.0	96.0	-
	US-440	PERRY-1	BWR	BWR-6 (Mark 3)	3758	1303	1240	GE	1974-10	1986-12	1987-11	86.3	86.3	-
	US-263	PILGRIM-1	BWR	BWR-3 (Mark 1)	2028	711	685	ENTERGY	1968-8	1972-7	1972-12	94.6	94.7	-
	US-266	POINT BEACH-1	PWR	W (2-loop) DRY	1540	543	512	NEXTERA	1967-7	1970-11	1970-12	90.0	90.0	-
	US-301	POINT BEACH-2	PWR	W (2-loop) DRY	1540	545	515	NEXTERA	1968-7	1972-8	1972-10	90.9	90.9	-
	US-282	PRAIRIE ISLAND-1	PWR	W (2-loop) DRY	1650	566	560	NSP	1968-6	1973-12	1973-12	90.1	90.1	-
	US-306	PRAIRIE ISLAND-2	PWR	W (2-loop) DRY	1650	640	554	NSP	1969-6	1974-12	1974-12	92.1	92.1	-
	US-254	QUAD CITIES-1	BWR	BWR-3 (Mark 1)	2957	913	882	EXELON	1967-2	1972-4	1973-2	94.5	94.5	-
	US-265	QUAD CITIES-2	BWR	BWR-3 (Mark 1)	2511	913	892	EXELON	1967-2	1972-5	1973-3	93.5	93.5	-
	US-244	R.E. GINNA	PWR	W (2-loop)	1775	608	580	CONSTELL	1966-4	1969-12	1970-7	95.3	95.3	-
	US-458	RIVER BEND-1	BWR	BWR-6 (Mark 3)	3091	1036	974	ENTERGY	1977-3	1985-12	1986-6	91.3	91.8	-
	US-272	SALEM-1	PWR	W (4-loop) DRY	3459	1228	1174	PSEG	1968-9	1976-12	1977-6	90.7	90.7	-
	US-311	SALEM-2	PWR	W (4-loop) DRY	3459	1170	1158	PSEG	1968-9	1981-6	1981-10	91.5	91.5	-
	US-361	SAN ONOFRE-2	PWR	W (4-loop) DR	3438	1127	1070	SCE	1974-3	1982-9	1983-8	83.9	83.9	-
	US-362	SAN ONOFRE-3	PWR	CE (2-loop) DR	3438	1127	1080	SCE	1974-3	1983-9	1984-4	82.9	82.9	-
	US-443	SEABROOK-1	PWR	W (4-loop) DRY	3587	1296	1247	NEXTERA	1976-7	1990-5	1990-8	92.0	92.3	-
	US-327	SEQUOYAH-1	PWR	W (4-loop) ICE	3411	1221	1152	TVA	1970-5	1980-7	1981-7	90.8	90.8	-
	US-328	SEQUOYAH-2	PWR	W (4-loop) IC	3411	1221	1126	TVA	1970-5	1981-12	1982-6	92.2	92.2	-
	US-400	SHEARON HARRIS-1	PWR	W (3-loop) DRY	2900	960	900	PROGRESS	1978-1	1987-1	1987-5	91.1	91.1	-
	US-498	SOUTH TEXAS-1	PWR	W (4-loop) DRY	3853	1354	1280	STP	1975-12	1988-3	1988-8	91.1	91.1	-
	US-489	SOUTH TEXAS-2	PWR	W (4-loop) DRY	3853	1354	1280	STP	1975-12	1989-4	1989-6	89.2	89.2	-
	US-335	ST. LUCIE-1	PWR	COMB CE DRY	2700	883	839	FPL	1970-7	1976-5	1976-12	90.4	90.9	-
	US-389	ST. LUCIE-2	PWR	COMB CE DRY	2700	883	839	FPL	1977-6	1983-6	1983-8	87.7	88.4	-
	US-280	SURRY-1	PWR	W (3-loop) DRY	2546	848	839	DOMINION	1968-6	1972-7	1972-12	90.5	90.5	-

TABLE 14. REACTORS IN OPERATION, 31 DEC. 2010 — continued

Country	Reactor		Type	Model	Capacity [MW]		Operator	NSSS Supplier	Construction Start	Grid Connection	Commercial Operation	EAF % 2001 to 2010	UCF % 2001 to 2010	Non-electrical Applies	
	Code	Name			Thermal	Gross									Net
	US-281	SURRY-2	PWR	W (3-loop) DRY	2546	848	799	DOMINION	WH	1968-6	1973-3	1973-5	92.4	92.4	-
	US-387	SUSQUEHANNA-1	BWR	BWR-4 (Mark 2)	3952	1298	1239	PPL_SUSQ	GE	1973-11	1982-11	1983-6	91.2	91.2	-
	US-388	SUSQUEHANNA-2	BWR	BWR-4 (Mark 2)	3489	1204	1190	PPL_SUSQ	GE	1973-11	1984-7	1985-2	93.2	93.2	-
	US-289	THREE MILE ISLAND-1	PWR	B&W (L-loop)	2568	837	805	EXELON	B&W	1968-5	1974-6	1974-9	92.5	92.5	-
	US-250	TURKEY POINT-3	PWR	W (3-loop) DRY	2300	729	693	FPL	WH	1967-4	1972-11	1972-12	89.9	90.2	-
	US-251	TURKEY POINT-4	PWR	W (3-loop) DRY	2300	729	693	FPL	WH	1967-4	1973-6	1973-9	91.0	91.2	-
	US-271	VERMONT YANKEE	BWR	BWR-4 (Mark 1)	1912	650	620	ENTERGY	GE	1967-12	1972-9	1972-11	94.1	94.1	-
	US-395	VIRGIL C. SUMMER-1	PWR	W (3-loop) DRY	2900	1003	966	SCE&G	WH	1973-3	1982-11	1984-1	89.2	89.2	-
	US-424	VOGTLE-1	PWR	W (4-loop) DRY	3565	1203	1150	SOUTHERN	WH	1976-8	1987-3	1987-6	93.2	93.2	-
	US-425	VOGTLE-2	PWR	W (4-loop) DRY	3565	1202	1152	SOUTHERN	WH	1976-8	1989-4	1989-5	90.3	90.3	-
	US-382	WATERFORD-3	PWR	CE (2-loop)	3716	1200	1168	ENTERGY	CE	1974-11	1985-3	1985-9	92.4	93.1	-
	US-390	WATTS BAR-1	PWR	W (4-loop) (IC)	3459	1202	1123	TVA	WH	1973-1	1986-2	1986-5	90.4	90.4	-
	US-482	WOLF CREEK	PWR	W (4-loop)	3555	1213	1160	WGNOC	WH	1977-5	1985-6	1985-9	91.1	91.1	-
	TW-1	CHIN SHAN-1	BWR	BWR-4	1804	636	604	TPC	GE	1972-6	1977-11	1978-12	88.1	88.4	-
	TW-2	CHIN SHAN-2	BWR	BWR-4	1804	636	604	TPC	GE	1973-12	1978-12	1979-7	89.6	90.2	-
	TW-3	KUOSHENG-1	BWR	BWR-6	2943	1019	985	TPC	GE	1975-11	1981-5	1981-12	87.9	88.6	-
	TW-4	KUOSHENG-2	BWR	BWR-6	2943	985	948	TPC	GE	1976-3	1982-6	1983-3	86.4	87.7	-
	TW-5	MAANSHAN-1	PWR	WE 312 (3 loop)	2822	956	919	TPC	WH	1978-8	1984-5	1984-7	89.5	91.6	-
	TW-6	MAANSHAN-2	PWR	WE 312 (3 loop)	2822	958	922	TPC	WH	1979-2	1985-2	1985-5	90.8	92.2	-

Status as of 31 December 2010. 441 reactors (375267 MW) were connected to the grid, including 6 units (4982 MW) in Taiwan, China.

TABLE 15. LONG TERM SHUTDOWN REACTORS, 31 DEC. 2010

Country	Reactor		Type	Model	Capacity [MW]			Operator	NSSS Supplier	Construction Start	Grid Connection	Commercial Operation	Long term Shutdown Date
	Code	Name			Thermal	Gross	Net						
CANADA	CA-8	BRUCE-1	PHWR	CANDU 791	2832	824	848	BRUCEPOW	OH/AECL	1971-6	1977-1	1977-9	1997-10
	CA-9	BRUCE-2	PHWR	CANDU 791	2832	824	848	BRUCEPOW	OH/AECL	1970-12	1976-9	1977-9	1995-10
	CA-5	PICKERING-2	PHWR	CANDU 500A	1744	542	515	OPG	OH/AECL	1966-9	1971-10	1971-12	1997-12
	CA-6	PICKERING-3	PHWR	CANDU 500A	1744	542	515	OPG	OH/AECL	1967-12	1972-5	1972-6	1997-12
JAPAN	JP-31	MONJU	FBR	Not specified	714	280	246	JAEA	T/H/F/M	1986-5	1995-8	—	1995-12

Status as of 31 December 2010, 5 reactors (2972 MW) were in long term shutdown.

TABLE 16. REACTORS PERMANENTLY SHUTDOWN, 31 DEC. 2010

Country	Reactor		Type	Capacity [MW]		Operator	NSSS Supplier	Construction Start	Grid Connection	Commercial Operation	Shut Down	
	Code	Name		Thermal	Gross							Net
ARMENIA	AM-18	ARMENIA-1	PWR	1375	408	ANPPJSC	FAEA	1969-7	1976-12	1977-10	1989-2	
BELGIUM	BE-1	BR-3	PWR	41	12	CEN/SCK	WH	1957-11	1962-10	1962-10	1987-6	
BULGARIA	BG-1	KOZLODUY-1	PWR	1375	440	KOZNPP	AEE	1970-4	1974-7	1974-10	2002-12	
	BG-2	KOZLODUY-2	PWR	1375	440	KOZNPP	AEE	1970-4	1975-8	1975-11	2002-12	
	BG-3	KOZLODUY-3	PWR	1375	440	KOZNPP	AEE	1973-10	1980-12	1981-1	2006-12	
	BG-4	KOZLODUY-4	PWR	1375	440	KOZNPP	AEE	1973-10	1982-5	1982-6	2006-12	
CANADA	CA-2	DOUGLAS POINT	PHWR	704	218	OH	AECL	1960-2	1967-1	1968-9	1984-5	
	CA-3	GENTILLY-1	HIWLR	792	266	HQ	AECL	1966-9	1971-4	1972-5	1977-6	
	CA-1	ROLPHTON NPD	PHWR	92	25	OH	CGE	1958-1	1962-6	1962-10	1987-8	
FRANCE	FR-9	BUGEY-1	GCR	1954	555	EDF	FRAM	1965-12	1972-4	1972-7	1994-5	
	FR-2	CHINON-A1	GCR	300	80	EDF	LEWVIER	1957-2	1963-6	1964-2	1973-4	
	FR-3	CHINON-A2	GCR	800	230	EDF	LEWVIER	1959-8	1965-2	1965-2	1985-6	
	FR-4	CHINON-A3	GCR	1170	480	EDF	GTM	1961-3	1966-8	1966-8	1990-6	
	FR-5	CHOOZ-A (ARDENNES)	PWR	1040	320	SENA	A/F/W	1962-1	1967-4	1967-4	1991-10	
	FR-6	EL-4 (MONT'S D'ARREE)	HWGCR	250	75	EDF	GAHA	1962-7	1967-7	1968-6	1985-7	
	FR-1B	G-2 (MARCOULE)	GCR	260	43	COGEMA	SACM	1955-3	1959-4	1959-4	1980-2	
	FR-1	G-3 (MARCOULE)	GCR	260	43	COGEMA	SACM	1956-3	1960-4	1960-4	1984-6	
	FR-10	PHENIX	FBR	345	142	CEA/EDF	CNCLNEY	1968-11	1973-12	1974-7	2010-2	
	FR-7	ST. LAURENT-A1	GCR	1650	500	EDF	FRAM	1963-10	1969-3	1969-6	1990-4	
	FR-8	ST. LAURENT-A2	GCR	1475	530	EDF	FRAM	1966-1	1971-8	1971-11	1992-5	
	FR-24	SUPER-PHENIX	FBR	3000	1242	EDF	ASPALDO	1976-12	1986-1	1986-12	1998-12	
	GERMANY	DE-4	AVR JUELICH (AVR)	HTGR	46	15	AVR	BBK	1961-8	1967-12	1969-5	1988-12
		DE-502	GREIFSWALD-1 (KGR 1)	PWR	1375	440	EWN	AIEE	1970-3	1973-12	1974-7	1990-2
DE-503		GREIFSWALD-2 (KGR 2)	PWR	1375	440	EWN	AIEE	1970-3	1974-12	1975-4	1990-2	
DE-504		GREIFSWALD-3 (KGR 3)	PWR	1375	440	EWN	AIEE	1972-4	1977-10	1978-5	1990-2	

TABLE 16. REACTORS PERMANENTLY SHUTDOWN, 31 DEC. 2010 — continued

Country	Reactor		Type	Capacity [MW]			Operator	NSSS Supplier	Construction Start	Grid Connection	Commercial Operation	Shut Down
	Code	Name		Thermal	Gross	Net						
GERMANY	DE-505	GREIFSWALD-4 (KGR 4)	PWR	1375	440	408	EWN	AEE	1972-4	1979-9	1979-11	1990-7
	DE-506	GREIFSWALD-5 (KGR 5)	PWR	1375	440	408	EWN	AEE	1976-12	1989-4	1989-11	1989-11
	DE-3	GUNDREMMINGEN-A (KRB A)	BWR	801	250	237	KGB	AEG, GE	1962-12	1966-12	1967-1	1977-1
	DE-7	HDR GROSSWELZHEIM	BWR	100	25	25	HDR	AEG, KKW	1965-1	1969-10	1970-8	1971-4
	DE-8	KNK II	BWR	58	21	17	KGB	IA	1974-9	1978-4	1979-3	1991-8
	DE-6	LINGEN (KWL)	BWR	520	288	183	KWL	AEG	1964-10	1968-7	1968-10	1979-1
	DE-22	MUELHEIM-KAERLICH (KMK)	PWR	3760	1302	1219	KGK	BBR	1975-1	1986-3	1987-8	1988-9
	DE-2	MZFR	PHWR	200	57	52	KGB	SIEMENS	1961-12	1966-3	1966-12	1984-5
	DE-11	NIEDERAICHBACH (KKN)	HW/GCR	321	106	100	KKN	SIEM, KWU	1966-6	1973-1	1973-1	1974-7
	DE-5	OBRIGHEIM (KWO)	PWR	1050	357	340	EnBW	SIEM, KWU	1965-3	1968-10	1969-3	2005-5
	DE-501	RHEINSBERG (KKR)	PWR	265	70	62	EWN	AEE	1960-1	1966-5	1966-10	1990-6
	DE-10	STADE (KKS)	PWR	1900	672	640	E.ON	KWU	1967-12	1972-1	1972-5	2003-11
	DE-19	THTR-300	HTGR	750	308	296	HKG	HRB	1971-5	1985-11	1987-6	1988-4
	DE-1	VAK KAHL	BWR	60	16	15	VAK	GE, AEG	1958-7	1961-6	1962-2	1985-11
DE-9	WUERGASSEN (KWW)	BWR	1912	670	640	PE	AEG, KWU	1968-1	1971-12	1975-11	1994-8	
ITALY	IT-4	CAORSO	BWR	2651	882	860	SOGIN	AMN/GETS	1970-1	1978-5	1981-12	1990-7
	IT-3	ENRICO FERMI (TRINO)	PWR	870	270	260	SOGIN	EL/WEST	1961-7	1964-10	1965-1	1990-7
	IT-2	GARIGLIANO	BWR	506	160	150	SOGIN	GE	1959-11	1964-1	1964-6	1982-3
	IT-1	LATINA	GCR	660	160	153	SOGIN	TNPG	1958-11	1963-5	1964-1	1987-12
JAPAN	JP-20	FUGEN ATR	HWLWR	557	165	148	JAEA	HITACHI	1972-5	1978-7	1979-3	2003-3
	JP-11	HAMAOKA-1	BWR	1593	540	515	CHUBU	TOSHIBA	1971-6	1974-8	1976-3	2009-1
	JP-24	HAMAOKA-2	BWR	2436	840	806	CHUBU	TOSHIBA	1974-6	1978-5	1978-11	2009-1
	JP-1	JPD1	BWR	90	13	12	JAEA	GE	1960-12	1963-10	1965-3	1976-3
	JP-2	TOKAI-1	GCR	587	166	137	JAPCO	GEC	1961-3	1965-11	1966-7	1998-3
KAZAKHSTAN	KZ-10	BN-350	FBR	1000	90	52	MAEC-KAZ	MAEC-KAZ	1964-10	1973-7	1973-7	1999-4
LITHUANIA	LT-46	IGNALINA-1	LWGR	4800	1300	1185	INPP	MAEP	1977-5	1983-12	1984-5	2004-12
	LT-47	IGNALINA-2	LWGR	4800	1300	1185	INPP	MAEP	1978-1	1987-8	1987-8	2009-12

TABLE 16. REACTORS PERMANENTLY SHUTDOWN, 31 DEC. 2010 — continued

Country	Reactor		Type	Capacity [MW]		Operator	NSSS Supplier	Construction Start	Grid Connection	Commercial Operation	Shut Down
	Code	Name		Thermal	Gross						
NETHERLANDS	NL-1	DODEWAARD	BWR	183	60	BV GKN	RDM	1965-5	1968-10	1969-3	1987-3
	RU-1	APS-1 OBNINSK	LWGR	30	6	MSM	MSM	1951-1	1954-6	1954-12	2002-4
	RU-3	BELOYARSKY-1	LWGR	286	108	MSM	MSM	1958-6	1964-4	1964-4	1983-1
	RU-6	BELOYARSKY-2	LWGR	530	160	MSM	MSM	1962-1	1967-12	1969-12	1990-4
RUSSIA	RU-4	NOVOVORONEZH-1	PWR	760	210	MSM	MSM	1957-7	1964-9	1964-12	1988-2
	RU-8	NOVOVORONEZH-2	PWR	1320	365	MSM	MSM	1964-6	1969-12	1970-4	1990-8
	SK-1	BOHUNICE A1	HWGCR	560	143	JAVYS	SKODA	1958-8	1972-12	1972-12	1977-2
	SK-2	BOHUNICE-1	PWR	1375	440	JAVYS	AEE	1972-4	1978-12	1980-4	2006-12
SLOVAKIA	SK-3	BOHUNICE-2	PWR	1375	440	JAVYS	AEE	1972-4	1980-3	1981-1	2008-12
	ES-1	JOSE CABRERA-1 (ZORITA)	PWR	510	150	UFG	WH	1964-6	1968-7	1969-8	2006-4
	ES-3	VANDELLOS-1	GCR	1670	500	HIFRENSA	CEA	1968-6	1972-5	1972-8	1990-7
SPAIN	SE-1	AGESTA	PHWR	80	12	BKAB	ABBATOM	1957-12	1964-5	1964-5	1974-6
	SE-6	BARSEBACK-1	BWR	1800	615	BKAB	ASEASTAL	1971-2	1975-5	1975-7	1999-11
	SE-8	BARSEBACK-2	BWR	1800	615	BKAB	ABBATOM	1973-1	1977-3	1977-7	2005-5
	CH-8	LUCENS	HWGCR	28	6	EOS	NGA	1962-4	1968-1	NA	1969-1
SWITZERLAND	GB-3A	BERKELEY 1	GCR	620	166	MEL	TNPG	1957-1	1962-6	1962-6	1989-3
	GB-3B	BERKELEY 2	GCR	620	166	MEL	TNPG	1957-1	1962-6	1962-10	1988-10
UK	GB-4A	BRADWELL 1	GCR	481	146	MEL	TNPG	1957-1	1962-7	1962-7	2002-3
	GB-4B	BRADWELL 2	GCR	481	146	MEL	TNPG	1957-1	1962-7	1962-11	2002-3
	GB-1A	CALDER HALL 1	GCR	288	60	MEL	UKAEA	1953-8	1956-8	1956-10	2003-3
	GB-1B	CALDER HALL 2	GCR	288	60	MEL	UKAEA	1953-8	1957-2	1957-2	2003-3
	GB-1C	CALDER HALL 3	GCR	268	60	MEL	UKAEA	1958-5	1958-3	1958-5	2003-3
	GB-1D	CALDER HALL 4	GCR	268	60	MEL	UKAEA	1958-5	1959-4	1959-4	2003-3
	GB-2A	CHAPELCROSS 1	GCR	260	60	MEL	UKAEA	1955-10	1959-2	1959-3	2004-6
	GB-2B	CHAPELCROSS 2	GCR	260	60	MEL	UKAEA	1955-10	1959-7	1959-8	2004-6

TABLE 16. REACTORS PERMANENTLY SHUTDOWN, 31 DEC. 2010 — continued

Country	Reactor		Type	Capacity [MW]			Operator	NSSS Supplier	Construction Start	Grid Connection	Commercial Operation	Shut Down
	Code	Name		Thermal	Gross	Net						
UK	GB-2C	CHAPELCROSS 3	GCR	260	60	48	MEL	UKAEA	1955-10	1959-11	1959-12	2004-6
	GB-2D	CHAPELCROSS 4	GCR	260	60	48	MEL	UKAEA	1955-10	1960-1	1960-3	2004-6
	GB-14	DOUNREAY DFR	FBR	60	15	11	UKAEA	UKAEA	1955-3	1962-10	1962-10	1977-3
	GB-15	DOUNREAY PFR	FBR	800	250	234	UKAEA	TNPG	1966-1	1975-1	1976-7	1994-3
	GB-9A	DUNGENESS-A1	GCR	840	230	225	MEL	TNPG	1960-7	1965-9	1965-10	2006-12
	GB-9B	DUNGENESS-A2	GCR	840	230	225	MEL	TNPG	1960-7	1965-11	1965-12	2006-12
	GB-7A	HINKLEY POINT-A1	GCR	900	267	235	MEL	EE/B&W/T	1957-11	1965-2	1965-3	2000-5
	GB-7B	HINKLEY POINT-A2	GCR	900	267	235	MEL	EE/B&W/T	1957-11	1965-3	1965-5	2000-5
	GB-6A	HUNTERSTON-A1	GCR	595	173	150	MEL	GEC	1957-10	1964-2	1964-2	1990-3
	GB-6B	HUNTERSTON-A2	GCR	595	173	150	MEL	GEC	1957-10	1964-6	1964-7	1989-12
	GB-10A	SIZEWELL-A1	GCR	1010	245	210	MEL	EE/B&W/T	1961-4	1966-1	1966-3	2006-12
	GB-10B	SIZEWELL-A2	GCR	1010	245	210	MEL	EE/B&W/T	1961-4	1966-4	1966-9	2006-12
UKRAINE	GB-8A	TRAWSFYNYDD 1	GCR	850	235	195	MEL	APC	1959-7	1965-1	1965-3	1991-2
	GB-8B	TRAWSFYNYDD 2	GCR	850	235	195	MEL	APC	1959-7	1965-2	1965-3	1991-2
	GB-5	WINDSCALE AGR	GCR	120	36	24	UKAEA	UKAEA	1958-11	1963-2	1963-3	1981-4
	GB-12	WINFRITH SGHWR	SGHWR	318	100	92	UKAEA	ICL/FE	1963-5	1967-12	1968-1	1990-9
	UA-25	CHERNOBYL-1	LWGR	3200	800	740	MTE	FAEA	1970-3	1977-9	1978-5	1996-11
	UA-26	CHERNOBYL-2	LWGR	3200	1000	925	MTE	FAEA	1973-2	1978-12	1979-5	1991-10
USA	UA-42	CHERNOBYL-3	LWGR	3200	1000	925	MTE	FAEA	1976-3	1981-12	1982-6	2000-12
	UA-43	CHERNOBYL-4	LWGR	3200	1000	925	MTE	FAEA	1979-4	1983-12	1984-3	1986-4
	US-155	BIG ROCK POINT	BWR	240	71	67	CPC	GE	1960-5	1962-12	1963-3	1997-8
	US-014	BONUS	BWR	50	18	17	DOE/PRWR	GNEPRWRA	1960-1	1964-8	1965-9	1988-6
	US-144	CVTR	PHWR	65	19	17	CVPA	WH	1960-1	1963-12	NA	1967-1
	US-10	DRESDEN-1	BWR	700	207	197	EXELON	GE	1956-5	1960-4	1960-7	1978-10
	US-011	ELK RIVER	BWR	58	24	22	ROPAC	AC	1959-1	1963-8	1964-7	1968-2
	US-16	ENRICO FERMI-1	FBR	200	65	61	DTEDESION	UEC	1956-8	1966-8	NA	1972-11
	US-267	FORT ST. VRAIN	HTGR	842	342	330	PSCC	GA	1968-9	1976-12	1979-7	1989-8
	US-018	GE VALLECITOS	BWR	50	24	24	GE	WH	1956-1	1957-10	1957-10	1963-12
US-213	HADDAM NECK	PWR	1825	603	560	CYAPC	WH	1964-5	1967-8	1968-1	1996-12	

TABLE 16. REACTORS PERMANENTLY SHUTDOWN, 31 DEC. 2010 — continued

Country	Reactor		Type	Capacity [MW]		Operator	NSSS Supplier	Construction Start	Grid Connection	Commercial Operation	Shut Down
	Code	Name		Thermal	Gross						
USA	US-077	HALLAM	X	256	84	AEC/NPPD	GE	1959-1	1963-9	1963-11	1964-9
	US-133	HUMBOLDT BAY	BWR	220	65	PG&E	GE	1960-11	1963-4	1963-8	1976-7
	US-013	INDIAN POINT-1	PWR	615	277	ENERGY	B&W	1956-5	1962-9	1962-10	1974-10
	US-409	LACROSSE	BWR	165	55	DPC	AC	1963-3	1968-4	1969-11	1987-4
	US-309	MAINE YANKEE	PWR	2630	900	MYAPC	CE	1968-10	1972-11	1972-12	1997-8
	US-245	MILLSTONE-1	BWR	2011	684	DOMINION	GE	1966-5	1970-11	1971-3	1998-7
	US-130	PATHFINDER	BWR	0	63	NMC	AC	1959-1	1966-7	NA	1967-10
	US-171	PEACH BOTTOM-1	HTGR	115	42	EXELON	GA	1962-2	1967-1	1967-6	1974-11
	US-012	PIQUA	X	46	12	CofPiqua	GE	1960-1	1963-7	1963-11	1966-1
	US-312	RANCHO SECO-1	PWR	2772	917	SMUD	B&W	1969-4	1974-10	1975-4	1989-6
	US-206	SAN ONOFRE-1	PWR	1347	456	SCE	WH	1964-5	1967-7	1968-1	1992-11
	US-146	SAXTON	PWR	24	3	SNEC	GE	1960-1	1967-3	1967-3	1972-5
	US-001	SHIPPINGPORT	PWR	236	68	DOE DUQU	WH	1954-1	1957-12	1958-5	1982-10
	US-322	SHOREHAM	BWR	2436	849	LIPA	GE	1972-11	1986-8	NA	1989-5
	US-320	THREE MILE ISLAND-2	PWR	2772	959	GPU	B&W	1969-11	1978-4	1978-12	1979-3
	US-344	TROJAN	PWR	3411	1155	PORTGE	WH	1970-2	1975-12	1976-5	1992-11
	US-29	YANKEE NPS	PWR	600	180	YAEC	WH	1957-11	1960-11	1961-7	1991-10
	US-295	ZION-1	PWR	3250	1085	EXELON	WH	1968-12	1973-6	1973-12	1998-2
	US-304	ZION-2	PWR	3250	1085	EXELON	WH	1968-12	1973-12	1974-9	1998-2

Status as of 31 December 2010. 125 reactors (37809 MW) were permanently shut down.

TABLE 17. REACTORS IN DECOMMISSIONING PROCESS OR DECOMMISSIONED, 31 Dec.2010

Country	Reactor		Shut down	Shutdown reason	Decom. Strategy	Current decom. Phase	Current Fuel management phase	Decom. Licensee	License terminated
	Code	Name							
ARMENIA	AM-18	ARMENIA-1	1989-2	Others	Other				
BELGIUM	BE -1	BR-3	1987-6	2.5	Imdte.dism.	4.9	4	ANPP,JSC	
BULGARIA	BG -1	KOZLODUY-1	2002-12	7.Others	Dd+PD+SE	5,6,7	3,6	CEN/SCK	2036
	BG -2	KOZLODUY-2	2002-12	7.Others	Dd+PD+SE	5,6,7	3,6	E-03493	2036
	BG -3	KOZLODUY-3	2006-12	7.Others	Dd+PD+SE	7	2	E-00174	2036
	BG -4	KOZLODUY-4	2006-12	7.Others	Dd+PD+SE	7	2,6	E-0008	2036
CANADA	CA -1	ROLPHTON NPD	1987-8	2	Dd+PD+SE	8		AECL	
	CA -2	DOUGLAS POINT	1984-5	2	Dd+SE	8	7	AECL	
FRANCE	CA -3	GENTILLY-1	1977-6	2	Dd+PD+SE	8	7	AECL	
	FR -10	PHENIX	2010-2	Others	Imdte.dism.			-	
	FR -2	CHINON-A1	1973-4	1,2	Imdte.dism.			EDF	
	FR -24	SUPER-PHENIX	1988-12	Others	Imdte.dism.	6	3,6	NERSA	2025
	FR -3	CHINON-A2	1985-6	1,2	Imdte.dism.			EDF	
	FR -4	CHINON-A3	1980-6	1,2	Imdte.dism.			EDF	
	FR -5	CHOOZ-A (ARDENNES)	1991-10	Others	Imdte.dism.	4.9		SENA	2019
	FR -6	EL-4 (MONT'S D'ARREE)	1985-7	1,2	Imdte.dism.	9		EDF	2015
	FR -7	ST. LAURENT-A1	1980-4	1,2	Imdte.dism.			EDF	2027
	FR -8	ST. LAURENT-A2	1992-5	1,2	Imdte.dism.			EDF	2025
GERMANY	FR -9	BUGEY-1	1994-5	1,2	Imdte.dism.	9		EDF	2020
	DE -10	STADE (KKS)	2003-11	2	Imdte.dism.	3,4,6		E.ON	2014
	DE -3	GUNDREMMINGEN-A (KRB A)	1977-1	6,8	Imdte.dism.			KGG	
	DE -4	AVR JUELICH (AVR)	1988-12	7	Imdte.dism.	3,4,9		xxxx	
	DE -501	RHEINBERG (KKR)	1980-6	1	Imdte.dism.	3.9	4	G 01 KKR	
	DE -502	GREIFSWALD-1 (KGR 1)	1990-2	3,6,7	Imdte.dism.	3.9	4	G 01	
	DE -503	GREIFSWALD-2 (KGR 2)	1990-2	3,6,7	Imdte.dism.	3		G 01	
	DE -504	GREIFSWALD-3 (KGR 3)	1990-2	3,6	Imdte.dism.	3	3	G 01	
	DE -505	GREIFSWALD-4 (KGR 4)	1990-7	3,5,7	Imdte.dism.	3	3	G 01	
	DE -506	GREIFSWALD-5 (KGR 5)	1989-11	3,6,7	Imdte.dism.	1,3	3	G 01	
ITALY	DE -6	LINGEN (KWL)	1979-1	2	Dd+PD+SE	3,4,6		KWL GmbH	2014
	DE -9	WUERGASSEN (KWW)	1984-8	2	Imdte.dism.	3,4,6		E.ON	2018
	IT -1	LATINA	1987-12	7.Others	Imdte.dism.	3,4,9		SOGIN	

TABLE 17. REACTORS IN DECOMMISSIONING PROCESS OR DECOMMISSIONED, 31 Dec.2010 — continued

Country	Reactor		Shut down	Shutdown reason	Decom. Strategy	Current decom. Phase	Current Fuel management phase	Decom. Licensee	License terminated
	Code	Name							
ITALY	IT-2	GARIGLIANO	1982-3	3,4,Others	lmdte,dism.	3,4		SOGIN	2019
	IT-3	ENRICO FERMI (TRINO)	1990-7	7,Others	lmdte,dism.	3,4	3,5	SOGIN	2013
	IT-4	CAORSO	1990-7	7,Others	lmdte,dism.	3,4	3,5	SOGIN	2019
	JP-1	JPDR	1976-3	Others	lmdte,dism.	3		JAERI	2002
JAPAN	JP-11	HAMAOKA-1	2009-1	6	Dd+SE	1,6,7	2	CHUBU DL	2037
	JP-2	TOKAI-1	1998-3	2	Dd+PD+SE	3,6,7		JAPCO	2018
	JP-20	FUGEN ATR	2003-3	2	Dd+SE	1,3,5	2,5	JAEA	2029
	JP-24	HAMAOKA-2	2009-1	6	Dd+SE	1,6,7	2	CHUBU DL	2037
KAZAKHSTAN	KZ-10	BN-350	1999-4	2,5	Dd+PD+SE	1,5,6	2,3,6	CHUBU DL	2037
	LT-46	IGNALINA-1	2004-12	7,Others	lmdte,dism.	3		MAEC-KAZ	
	LT-47	IGNALINA-2	2009-12	7,Others	lmdte,dism.	3	2	INPP	2130
	NL-1	DODEWAARD	1997-3	7,Others	lmdte,dism.	7		INPP	2130
NETHERLANDS	RU-3	BELOYARSKY-1	1983-1	2,Others	Dd+SE	7		BV GKN	2055
	RU-4	NOVOVORONEZH-1	1988-2	Others	Other			EA	
	RU-6	BELOYARSKY-2	1990-4	Others	Other			EA	
	RU-8	NOVOVORONEZH-2	1990-8	Others	Other			EA	
SLOVAKIA	SK-1	BOHUNICE A1	1977-2	4	Dd+PD+SE	3,6		JAVYS	
	SK-2	BOHUNICE-1	2006-12	7	lmdte,dism.		3,6	JAVYS	
	SK-3	BOHUNICE-2	2008-12	7	lmdte,dism.		2,3,6	JAVYS	
	ES-1	JOSE CABRERA-1 (ZORITA)	2006-4	Others	lmdte,dism.	3,4,9	3,7	UFG	2015
SPAIN	ES-3	VANDELLOS-1	1990-7	4	Dd+PD+SE	8		ENRESA	2032
	SE-1	AGESTA	1974-6	2,3	Dd+SE	7		BKAB	2025
	SE-6	BARSEBACK-1	1999-11	Others	Other		4	BKAB	2025
	SE-8	BARSEBACK-2	2005-5	Others	Other		4	BKAB	2025
SWITZERLAND	CH-8	LUCENS	1969-1	4	Dd+SE	1		EOS	2004
	GB-10A	SIZEWELL-A1	2006-12	2,8	Dd+SE	2,3,5,6		Magnox S	2110
	GB-10B	SIZEWELL-A2	2006-12	2,8	Dd+SE	2,3,5,6		Magnox S	2110
	GB-12	WINFRITH SGHWR	1990-9	Others	lmdte,dism.	3,4,9,10	5	UKAEA	2019
UK	GB-14	DOUNREAY DFR	1977-3	Others	Dd+PD+SE	2,5		DSR	2333
	GB-15	DOUNREAY PFR	1994-3	Others	Dd+PD+SE	5		Magnox N	2333
	GB-1A	CALDER HALL 1	2003-3	2,8	Dd+PD+SE	3,5,6		SL	2117
	GB-1B	CALDER HALL 2	2003-3	2,8	Dd+PD+SE	3,5,6		SL	2117

TABLE 17. REACTORS IN DECOMMISSIONING PROCESS OR DECOMMISSIONED, 31 Dec.2010 — continued

Country	Reactor		Shut down	Shutdown reason	Decom. Strategy	Current decom. Phase	Current Fuel managemt phase	Decom. Licensee	License terminated
	Code	Name							
UK	GB-1C	CALDER HALL 3	2003-3	2.8	Dd+PD+SE	3.5,6		SL	2117
	GB-1D	CALDER HALL 4	2003-3	2.8	Dd+PD+SE	3.5,6		SL	2117
	GB-2A	CHAPELCROSS 1	2004-6	2.8	Dd+PD+SE	3.5,6		Magnox N	2128
	GB-2B	CHAPELCROSS 2	2004-6	2.8	Dd+PD+SE	3.5,6		Magnox N	2128
	GB-2C	CHAPELCROSS 3	2004-6	2.8	Dd+PD+SE	3.5,6		Magnox N	2128
	GB-2D	CHAPELCROSS 4	2004-6	2.8	Dd+PD+SE	3.5,6		Magnox N	2128
	GB-3A	BERKELEY 1	1989-3	2.8	Dd+SE	3.5,6,8		Magnox S	2083
	GB-3B	BERKELEY 2	1988-10	2.8	Dd+SE	3.5,6,8		Magnox S	2083
	GB-4A	BRADWELL 1	2002-3	2.8	Dd+SE	3.5,6		Magnox S	2104
	GB-4B	BRADWELL 2	2002-3	2.8	Dd+SE	3.5,6		Magnox S	2104
	GB-5	WINDSCALE AGR	1981-4	Others	Dd+PD+SE	2,3,5,6		SL	2065
	GB-6A	HUNTERSTON-A1	1990-3	2.8	Dd+PD+SE	3.5,6		Magnox N	2090
	GB-6B	HUNTERSTON-A2	1989-12	2.8	Dd+PD+SE	3.5,6		Magnox N	2090
	GB-7A	HINKLEY POINT-A1	2000-5	2.8	Dd+PD+SE	3.5,6		Magnox S	2104
	GB-7B	HINKLEY POINT-A2	2000-5	2.8	Dd+PD+SE	3.5,6		Magnox S	2104
USA	GB-8A	TRAWSFYNDD 1	1991-2	2.8	Dd+PD+SE	3.5,6		Magnox N	2098
	GB-8B	TRAWSFYNDD 2	1991-2	2.8	Dd+PD+SE	3.5,6		Magnox N	2098
	GB-9A	DUNGENESS-A1	2006-12	2.8	Dd+PD+SE	3.5,6		Magnox S	2111
	GB-9B	DUNGENESS-A2	2006-12	2.8	Dd+PD+SE	3.5,6		Magnox S	2111
	US-001	SHIPPINGPORT	1982-10	2.8	Dd+PD+SE	3.5,6		DOE DUQU	1989
	US-011	ELK RIVER	1968-2	3	Imdte.dism.			RCPA	1974
	US-012	PIQUA	1966-1	1,Others	Imdte.dism.			CoPiqua	
	US-013	INDIAN POINT-1	1974-10	4,5	In situ disp.	11		ENERGY	
	US-014	BONUS	1968-6	5	Dd+PD+SE			DOE/PRWR	1970
	US-018	GE VALLECITOS	1963-12	5,6	In situ disp.			GE&PGEC	
	US-077	HALLAM	1964-9	1	Dd+SE			AEC&NPPD	1971
	US-10	DRESDEN-1	1978-10	5	Dd+SE	11	7	EXELON	
	US-130	PATHFINDER	1967-10	5	Dd+SE	11		NMC	
	US-133	HUMBOLDT BAY	1976-7	5	Dd+PD+SE	3,4,6,9		PG&E	2013
	US-144	CVTR	1967-1	7,Others	Dd+SE			CVPA	2009
US-146	SAXTON	1972-5	Others	Imdte.dism.			GPUNC	2005	
US-155	BIG ROCK POINT	1997-8	2,Others	Imdte.dism.		7	CPC	2007	

TABLE 17. REACTORS IN DECOMMISSIONING PROCESS OR DECOMMISSIONED, 31 Dec.2010 — continued

Country	Reactor		Shut down	Shutdown reason	Decom. Strategy	Current decom. Phase	Current Fuel management phase	Decom. Licensee	License terminated
	Code	Name							
USA	US -16	ENRICO FERMI-1	1972-11	4,5	Dd+SE	9,11		DTEDISON	2025
	US -171	PEACH BOTTOM-1	1974-11	1	Dd+SE	1		EXELON	2008
	US -206	SAN ONOFRE-1	1992-11	Others	Dd+PD+SE	4		SCE	2007
	US -213	HADDAM NECK	1996-12	6	lmdte,dism.	4,6		CYAPC	2007
	US -245	MILLSTONE-1	1988-7	6	Dd+PD+SE			DOMINRES	1996
	US -267	FORT ST. VRAIN	1989-8	1,Others	lmdte,dism.	4,6		PSCC	2005
	US -29	YANKEE NPS	1991-10	5,7	lmdte,dism.	1		YAEC	2005
	US -295	ZION-1	1988-2	5,6	Dd+PD+SE	1		CommonEd	2005
	US -304	ZION-2	1998-2	5,6	Dd+PD+SE	1		COMMED	2005
	US -309	MAINE YANKEE	1997-8	6	Dd+PD+SE	4	7	MYAPC	2009
	US -312	RANCHO SECO-1	1989-6	5,6	Dd+PD+SE	9		SMUD	1995
	US -320	THREE MILE ISLAND-2	1979-3	4,5	Other	11	4	GPU	2005
	US -322	SHOREHAM	1989-5	7,Others	lmdte,dism.			LIPA	2005
	US -344	TROJAN	1992-11	6	Dd+PD+SE			PORTGE	2005
	US -409	LACROSSE	1987-4	2	Dd+PD+SE			DPC	

TABLE 17. DEFINITIONS FOR REACTORS IN DECOMMISSIONING PROCESS OR DECOMMISSIONED

Shutdown reason	Description	Decommissioning strategy	Description
1 2 3 4 5 6 7 Others	The technology or process being used became obsolete The process was no longer profitable There were changes in licensing requirements After an operating incident Other technological reasons Other economical reasons Public acceptance reasons Others	Imdlie dism. Dd+SE Dd+PD+SE in situ disp. Others	Immediate dismantling and removal of all radioactive materials Deferred dismantling, placing all radiological areas into safe enclosure Deferred dismantling, including partial dismantling and placing remaining radiological areas into safe enclosure In situ disposal, involving encapsulation of radioactive materials and subsequent restriction of access Other
Fuel Management	Description Transfer to at reactor facility Transfer to away from reactor facility Storage in an on-site facility Storage in an off-site facility Shipment to a reprocessing plant Under water storage Dry storage Encapsulation	Current decommissioning phase 1 2 3 4 5 6 7 8 9 10 11	Description Drawing up the Final Decommissioning Plan Reactor core defuelling Waste conditioning on site (Only for Decommissioning waste) Waste shipment off site (Only for Decommissioning waste) Safe enclosure preparation Partial dismantling Active safe enclosure period Passive safe enclosure period Final dismantling Final survey Licence terminated (Legal act at the end of the Decommissioning process)

TABLE 18. PERFORMANCE FACTORS BY REACTOR CATEGORY, 2008 to 2010

Reactor Category	Reactors reporting to IAEA PRIS (see note)							
	Number of Units	Availability Factor %	Planned Cap.Loss Factor %	Capacity Factor %	Forced Loss Rate %	Operating Factor %	Load Factor %	
PWR	269	83.3	11.3	84.4	3.0	84.6	82.6	
PWR < 600 MW(e)	47	84.3	13.9	84.6	1.5	85.1	82.9	
PWR >= 600 MW(e)	222	83.2	11.0	84.3	3.1	84.6	82.6	
BWR	94	74.6	18.0	75.2	6.0	76.3	74.2	
BWR < 600 MW(e)	12	68.0	25.2	68.3	6.8	71.6	68.1	
BWR >= 600 MW(e)	82	75.0	17.6	75.6	6.0	76.9	74.5	
PHWR	46	75.7	14.2	80.5	5.2	76.6	75.0	
PHWR < 600 MW(e)	26	58.4	19.3	71.4	10.8	69.7	56.8	
PHWR >= 600 MW(e)	20	84.7	11.5	85.2	2.6	85.1	84.6	
LWGR	16	78.5	18.1	78.8	2.3	77.2	78.3	
LWGR < 600 MW(e)	4	72.0	27.0	72.0	0.2	69.0	32.8	
LWGR >= 600 MW(e)	12	78.5	18.0	78.8	2.3	80.0	78.5	
GCR	18	61.4	13.0	61.6	19.0	68.9	61.5	
FBR	2	70.3	27.7	70.5	1.6	61.6	70.7	
TOTAL	445	80.2	13.2	81.3	4.1	81.0	79.6	

Note: 2010 is the latest year for which operating experience data is currently available to the IAEA.

— Reactors permanently shut down during 2008 to 2010 (5 units) are considered.

TABLE 19. FULL OUTAGE STATISTICS DURING 2010

Reactor Type	Number of Units In the World	Full Outage Hours per Operating Experience Year	% Planned Outages	% Unplanned Outages	% External Outages
PWR	269	1302	73.0	24.1	2.9
PWR < 600 MW(e)	46	1167	89.2	9.2	1.6
PWR >= 600 MW(e)	223	1331	70.0	26.8	3.2
BWR	92	1892	66.8	31.5	1.7
BWR < 600 MW(e)	11	2052	54.9	45.0	0.1
BWR >= 600 MW(e)	81	1871	68.6	29.5	1.9
PHWR	46	1956	78.4	21.4	0.2
PHWR < 600 MW(e)	26	2410	78.2	21.6	0.2
PHWR >= 600 MW(e)	20	1366	78.9	20.8	0.3
LWGR	15	2063	88.7	7.7	3.6
LWGR < 600 MW(e)	4	3155	91.8	0.8	7.4
LWGR >= 600 MW(e)	11	1665	86.5	12.4	1.1
GCR	18	2193	29.0	70.0	1.0
FBR	1	2219	100.0	0.0	0.0
ALL REACTORS	441	1559	70.4	27.5	2.1

Note: 2010 is the latest year for which outage information is currently available to the IAEA.

— Reactors shut down during 2010 (1 unit) are considered.

TABLE 20. DIRECT CAUSES OF FULL OUTAGES DURING 2010

Direct Outage Cause	Planned Full Outages			Unplanned Full Outages		
	Energy Lost		Time Lost	Energy Lost		Time Lost
	GW(e).h	%	Hours	GW(e).h	%	Hours
Plant equipment problem/failure				118636	74.58	139632
Refuelling without a maintenance	17861	4.58	17587			74.14
Inspection, maintenance or repair combined with refuelling	287639	73.71	331197			
Inspection, maintenance or repair without refuelling	24952	6.39	44658			
Testing of plant systems or components	485	0.12	7084	124	0.08	249
Major back-fitting, refurbishment or upgrading activities with refuelling	12741	3.27	27444			
Major back-fitting, refurbishment or upgrading activities without refuelling	45740	11.72	46770			
Nuclear regulatory requirements				19896	12.51	25401
Human factor related				6640	4.17	8646
Fire				1523	0.96	2397
Fuel management limitation (including high flux tilt, stretch out or coast-down operation)				1807	1.14	1804
Others	790	0.20	8762	10444	6.57	10215
TOTAL	390208	100.00	483502	159070	100.00	188344
						100.00

Only reactors which have achieved full commercial operation in or before 2010 are counted.

TABLE 21. DIRECT CAUSES OF FULL OUTAGES, 2000 TO 2010

Direct Outage Cause	Planned Full Outages						Unplanned Full Outages					
	Energy Lost			Time Lost			Energy Lost			Time Lost		
	GW(e).h	%	Hours	%	Hours	GW(e).h	%	Hours	%	Hours		
Plant equipment problem/failure	7284	0.17	9258	0.18	1078185	75.64	1332564	76.20				
Refueling without a maintenance	87290	2.09	93539	1.77	6860	0.48	10186	0.58				
Inspection, maintenance or repair combined with refueling	3239768	77.55	3836355	72.73	25010	1.75	35613	2.04				
Inspection, maintenance or repair without refueling	355438	8.51	586708	11.12	9148	0.64	15076	0.86				
Testing of plant systems or components	18973	0.45	36999	0.70	8484	0.60	17177	0.98				
Major back-fitting, refurbishment or upgrading activities with refueling	130387	3.12	238706	4.53	4432	0.31	4944	0.28				
Major back-fitting, refurbishment or upgrading activities without refueling	248472	5.95	352451	6.68	1566	0.11	1873	0.11				
Nuclear regulatory requirements	29174	0.70	47331	0.90	85960	6.03	101393	5.80				
Grid limitation, failure or grid unavailability					1189	0.08	1276	0.07				
Load-following (frequency control, reserve shutdown due to reduced energy demand)	50762	1.22	47712	0.90	48194	3.38	50292	2.88				
Human factor related	181	0.00	176	0.00	44104	3.09	48102	2.75				
Governmental requirements or court decisions	2	0.00	6	0.00	41	0.00	31	0.00				
Environmental conditions					2387	0.17	2310	0.13				
Fire					5565	0.39	7115	0.41				
External restrictions on supply and services	486	0.01	2077	0.04	2379	0.17	2496	0.14				
Fuel management limitation (including high flux lilt, stretch out or coast-down operation)	3576	0.09	4207	0.08	2886	0.20	3535	0.20				
Others	5821	0.14	19291	0.37	99085	6.95	114876	6.57				
TOTAL	4177614	100.00	5274816	100.00	1425475	100.00	1748859	100.00				

Only reactors which have achieved full commercial operation in or before 2010 are counted.

TABLE 22. COUNTRIES - Abbreviations and Summary

Country Code	Full Name	Number of Reactors, as of 31 Dec. 2010				
		Operational	Construction	LT Shut Down	Shut Down	Planned
AM	ARMENIA	1			1	
AR	ARGENTINA	2	1			
BE	BELGIUM	7			1	
BG	BULGARIA	2	2		4	
BR	BRAZIL	2	1			
CA	CANADA	18		4	3	
CH	SWITZERLAND	5			1	
CN	CHINA	13	28			42
CZ	CZECH REPUBLIC	6				
DE	GERMANY	17			19	
ES	SPAIN	8			2	
FI	FINLAND	4	1			
FR	FRANCE	58	1		12	
GB	UNITED KINGDOM	19			26	
HU	HUNGARY	4				
IN	INDIA	19	6			2
IR	IRAN, ISLAMIC REPUBLIC OF		1			3
IT	ITALY				4	
JP	JAPAN	54	2		5	10
KR	KOREA, REPUBLIC OF	21	5	1		2
KZ	KAZAKHSTAN				1	
LT	LITHUANIA, REPUBLIC OF				2	
MX	MEXICO	2				
NL	NETHERLANDS	1			1	
PK	PAKISTAN	2	1			
RO	ROMANIA	2				
RU	RUSSIAN FEDERATION	32	11		5	37
SE	SWEDEN	10			3	
SI	SLOVENIA	1				
SK	SLOVAK REPUBLIC	4	2		3	

TABLE 22. COUNTRIES - Abbreviations and Summary — continued

Country Code	Full Name	Number of Reactors, as of 31 Dec. 2010					
		Operational	Construction	LT Shut Down	Shut Down	Planned	
UA	UKRAINE	15	2		4		
US	UNITED STATES OF AMERICA	104	1		28	22	
VN	VIET NAM					2	
ZA	SOUTH AFRICA	2					
TOTAL		441	67	5	125		120

Note: The total includes the following data from Taiwan, China:
 — 6 units in operation; 2 units under construction.

TABLE 23. REACTOR TYPES - Abbreviations and Summary

Type Code	Full Name	Number of Reactors, as of 31 Dec. 2010				
		Operational	Construction	LT Shut Down	Shut Down	Planned
BWR	Boiling Light-Water-Cooled and Moderated Reactor	92	4		23	10
FBR	Fast Breeder Reactor	1		1	7	2
GCR	Gas-Cooled, Graphite-Moderated Reactor	18	2		34	
HTGR	High-Temperature Gas-Cooled, Graphite-Moderated Reactor				4	1
HWGCR	Heavy-Water-Moderated, Gas-Cooled Reactor				4	
HWLWR	Heavy-Water-Moderated, Boiling Light-Water-Cooled Reactor				2	
LWGR	Light-Water-Cooled, Graphite-Moderated Reactor	15	1		9	
PHWR	Pressurized Heavy-Water-Moderated and Cooled Reactor	46	4	4	5	2
PWR	Pressurized Light-Water-Moderated and Cooled Reactor	269	56		34	105
SGHWR	Steam-Generating Heavy-Water Reactor				1	
X	Others				2	
TOTAL		441	67	5	125	120

TABLE 24. OPERATORS - Abbreviations and Summary

Operator Code	Full Name	Number of Reactors, as of 31 Dec. 2010		
		Operational	Construction	Shut Down / Planned
AEC/NPPD	ATOMIC ENERGY COMMISSION AND NEBRASKA PUBLIC POWER DISTRICT	2		1
AEP	AMERICAN ELECTRIC POWER COMPANY, INC.	1		
AmerenUE	AMEREN UE, UNION ELECTRIC COMPANY	3		
ANAV	ASOCIACION NUCLEAR ASCO-VANDELLOS A.I.E. (ENDESA/ID)	1		
ANPP/ISC	JOINT STOCK COMPANY ARMENIAN NPP	3		
APS	ARIZONA PUBLIC SERVICE CO.	2		
AVR	ARBEITSGEMEINSCHAFT VERSUCHSREAKTOR GMBH	15		
Axpo AG	KERNKRAFTWERK BEZNAU		1	
BE	BRITISH ENERGY			
BHAVINI	BHARATIYA NABHIKIYA VIDYUT NIGAM LIMITED			
BKAB	BARSEBACK KRAFT AB			
BKW	BKW ENERGIE AG	1		3
BRUCEPOW	BRUCE POWER	6	2	
BV GKN	BV GEMEENSCHAPPELIJKE KERNENERGIECENTRALE NEDERLAND (BV GKN)			1
CEA/EDF	COMMISSARIAT A L'ENERGIE ATOMIQUE (80%)ELECTRICITE DE FRANCE (20%)			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		
CHUBU	CHUBU ELECTRIC POWER CO.,INC	3		1
CHUGOKU	THE CHUGOKU ELECTRIC POWER CO.,INC.	2		2
CNAT	CENTRALES NUCLEARES ALMARAZ-TRILLO(ID/UG/ENDESA/HC/NUCLEONOR)	3	1	
CoP/Pluqa	CITY OF PIQUA GOVERNMENT			1
COGEMA	COMPAGNIE GENERALE DES MATIERES NUCLEAIRES			2
CONSTELL	CONSTELLATION ENERGY NUCLEAR GROUP, LLC	5		
CPC	CONSUMERS POWER CO.			1
CVPA	CAROLINAS-VIRGINIA NUCLEAR POWER ASSOC.			1
CYAPC	CONNECTICUT YANKEE ATOMIC POWER CO.			1
DOE DUQU	DEPARTMENT OF ENERGY AND DUQUESNE LIGHT CO.			1
DOE/PRWR	DOE & PUERTO RICO WATER RESOURCES			1
DOMINION	DOMINION GENERATION	7		1

TABLE 24. OPERATORS - Abbreviations and Summary — continued

Operator Code	Full Name	Number of Reactors, as of 31 Dec. 2010			
		Operational	Construction	LT Shut Down	Shut Down
DPC	DAIRYLAND POWER COOPERATIVE	1			1
DTEDISON	DETROIT EDISON CO.	7			1
DUKEENER	DUKE ENERGY CORP.	5			1
E.ON	E.ON KERNKRAFT GMBH	58	1		8
EDF	ELECTRICITE DE FRANCE	7			
ELECTRAB	ELECTRABEL M. V. NUCLEAIRE PRODUKTIE	2	1		
ELETRONU	ELETRONBRAS ELETRONUCLEAR S.A.	2	2		
EMO	ELECTROSTATION MOCHOVCE				1
EnBW	ENBW KRAFTWERKE AG				
ENERGYNW	ENERGY NORTHWEST	1			
EnKK	ENBW KERNKRAFT GMBH(SITZ IN OBRIGHEIM)	4			
ENERGY	ENERGY NUCLEAR OPERATIONS, INC.	12			1
EOS	ENERGIE DE L'OUEST SUISSE				1
EPDC	ELECTRIC POWER DEVELOPMENT CO.,LTD.		1		
EPZ	N.V. ELETRICITEITS-PRODUKTIEMAATSCHAPPIJ ZUID-NEDERLAND	1			
ESKOM	ESKOM	2			
EVN	VIETNAM ELECTRICITY				2
EWN	ENERGIEWERKE NORD GMBH				6
EXELON	EXELON GENERATION CO., LLC	17			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.	4			
FQNP	CNNC FUJIAN FUJING NUCLEAR POWER CO.,LTD		3		3
FSNPC	FUJIAN SANMING NUCLEAR POWER CO.,LTD.				2
GE	GENERAL ELECTRIC				
GFPNC	GUANGXI FANGCHENGANG NUCLEAR POWER COMPANY LTD				1
GNP/JVC	GUANGXI NUCLEAR POWER JOINT VENTURE COMPANY LIMITED(GNP/JVC)	2			
GPU	GENERAL PUBLIC UTILITIES(OWNED BY FIRSTENERGY CORP.)				1
HDR	HEISSDAMPFREAKTOR-BETRIEBSGESSELLSCHAFT MBH.				1
HEPCO	HOKKAIDO ELECTRIC POWER CO.,INC.	3			

TABLE 24. OPERATORS - Abbreviations and Summary — continued

Operator Code	Full Name	Number of Reactors, as of 31 Dec. 2010			
		Operational	Construction	LT Shut Down	Shut Down
HIFRENSA	HISPANO-FRANCESA DE ENERGIA NUCLEAR, S.A.				1
HKG	HOCHTEMPERATUR-KERNKRAFTWERK GMBH				1
HNPC	HAINAN NUCLEAR POWER COMPANY	2			
HOKURIKU	HOKURIKU ELECTRIC POWER CO.				
HONGYANH	HONGYANHE NUCLEAR POWER COMPANY	1			1
HQ	HYDRO QUEBEC				
HSNPC	HUANENG SHANDONG SHIDAOBAY NUCLEAR POWER CO.,LTD.	1			1
ID	IBERDROLA, S.A.				
INPP	IGNALINA NUCLEAR POWER PLANT				2
JAEA	JAPAN ATOMIC ENERGY AGENCY		1		2
JAPCO	JAPAN ATOMIC POWER CO.	3			1
JAVYS	JADROVA A VYRADOVACIA SPOLOCNOST/NUCLEAR AND DECOMMISSIONING COMPANY, PLC./				2
JNPC	JIANGSU NUCLEAR POWER CORPORATION	2			3
KBG	KERNKRAFTWERK-BETRIEBSGESELLSCHAFT MBH				4
KEPCO	KANSAI ELECTRIC POWER CO.	11			2
KGB	KERNKRAFTWERKE GUNDEMMINGEN BETRIEBSGESELLSCHAFT MBH	2			1
KGG	KERNKRAFTWERK GUNDEMMINGEN GMBH				1
KHNP	KOREA HYDRO AND NUCLEAR POWER CO.	21	5		2
KKB	KERNKRAFTWERK BRUNSBÜTTEL GMBH	1			
KKG	KERNKRAFTWERK GOESGEN-DAENIKEN AG	1			
KKK	KERNKRAFTWERK KRÜMMEL GMBH & CO. OHG	1			
KKL	KERNKRAFTWERK LEIBSTADT	1			
KKN	KERNKRAFTWERK NIEDERAICHBACH GMBH				1
KLE	KERNKRAFTWERKE LIPPE-EMS GMBH	1			
KOZNP	KOZLODUY NPP-PLC	2			4
KWG	GEMEINSCHAFTSKERNKRAFTWERK GROHNDE GMBH & CO. OHG	1			
KWL	KERNKRAFTWERK LINGEN GMBH	6			1
KYUSHU	KYUSHU ELECTRIC POWER CO.,INC.	2			
LANPC	LINGAO NUCLEAR POWER COMPANY LTD.				
LDNPC	LINGDONG NUCLEAR POWER COMPANY LTD.	1			1
LHNPC	LIAONING HONGYANHE NUCLEAR POWER CO. LTD. (LHNPC)		4		2

TABLE 24. OPERATORS - Abbreviations and Summary — continued

Operator Code	Full Name	Number of Reactors, as of 31 Dec. 2010			
		Operational	Construction	LT Shut Down	Shut Down
LIPA	LONG ISLAND POWER AUTHORITY				1
LNPC	LIAONIN NUCLEAR POWER COMPANY L.M.T.	2			2
LUMINANT	LUMINANT GENERATION COMPANY LLC				1
MAEC-KAZ	MANGISHLAK ATOMIC ENERGY COMPLEX-KAZATOMPROM,LIMITED LIABILITY COMPANY	4			22
MEL	MAGNOX ELECTRIC LIMITED				5
MISM	MINISTRY OF MEDIUM MACHINE BUILDING OF THE USSR (MINSREDMASH)				4
MTE	MINTOPENERGO OF UKRAINE - MINISTRY OF FUEL AND ENERGY OF UKRAINE				4
MYAPC	MAINE YANKEE ATOMIC POWER CO.	2	1		1
NASA	NUCLEOELECTRICA ARGENTINA S.A.	1			
NBEPC	NEW BRUNSWICK ELECTRIC POWER COMMISSION				
NDNPC	NINGDE NUCLEAR POWER COMPANY LTD.		4		
NEK	NUKLERANA ELEKTRARNA KRŠKO	1			
NEXTERA	NEXTERA ENERGY RESOURCES, LLC	4			
NMC	NUCLEAR MANAGEMENT CO.				1
NNEG	NATIONAL NUCLEAR ENERGY GENERATING COMPANY <ENERGOATOM>	15	2		
NPCL	NUCLEAR POWER CORPORATION OF INDIA LTD.	19	5		2
NPPDCO	NUCLEAR POWER PRODUCTION & DEVELOPMENT CO. OF IRAN		1		3
NPQJVC	NUCLEAR POWER PLANT QINSHAN JOINT VENTURE COMPANY LTD.	3	1		
NSP	NORTH-ERN STATES POWER CO.(SUBSIDIARY OF XCEL ENERGY)	3			
NUCLENOR	NUCLENOR, S.A.	1			
OH	ONTARIO HYDRO				2
OKG	OKG AKTIEBOLAG				
OPG	ONTARIO POWER GENERATION	10		2	
OPPD	OMAHA PUBLIC POWER DISTRICT	1			
PAEC	PAKISTAN ATOMIC ENERGY COMMISSION	2	1		
PAKS Zrt	PAKS NUCLEAR POWER PLANT LTD	4			
PE	PREUSSELEKTRA KERNIKRAFT GMBH&CO KG				1
PG&E	PACIFIC GAS AND ELECTRIC COMPANY	2			1
PORTGE	PORTLAND GENERAL ELECTRIC CO.				1
PPL_SUSQ	PPL SUSQUEHANNA, LLC	2			1
PROGRESS	PROGRESS ENERGY	5			1

TABLE 24. OPERATORS - Abbreviations and Summary — continued

Operator Code	Full Name	Number of Reactors, as of 31 Dec. 2010			
		Operational	Construction	LT Shut Down	Shut Down
PSCC	PUBLIC SERVICE CO. OF COLORADO				
PNEG	PSEG NUCLEAR LLC/PUBLIC SERVICE ELECTRIC & GAS CO.	3			1
QNPC	QINSHAN NUCLEAR POWER COMPANY	1	2		
RAB	RINGHALS AB	4			
RCPA	RURAL COOPERATIVE POWER ASSOC.				1
REA	JOINT STOCK COMPANY CONCERN ROSENERGOATOM	32	11		37
RWE	RWE POWER AG	2			
SCE	SOUTHERN CALIFORNIA EDISON CO.	2			
SCE&G	SOUTH CAROLINA ELECTRIC & GAS CO.	1			1
SE,ipic	SLOVENSKE ELEKTRARNE, A.S.	4			
SENA	SOCIETE D'ENERGIE NUCLEAIRE FRANCO-BELGE DES ARDENNES				1
SHIKOKU	SHIKOKU ELECTRIC POWER CO.,INC	3			
SMNPC	SANMEN NUCLEAR POWER CO.,LTD.		2		2
SMUD	SACRAMENTO MUNICIPAL UTILITY DISTRICT				1
SNEC	SAXTON NUCLEAR EXPERIMENTAL REACTOR CORPORATION				1
SNN	SOCIETATEA NATIONALA NUCLEARELECTRICA S.A.	2			
SNPC	SHANDONG NUCLEAR POWER COMPANY LTD		2		2
SOGIN	SOCIETA GESTIONE IMPANTI NUCLEARI S.P.A.				4
SOUTHERN	SOUTHERN NUCLEAR OPERATING COMPANY, INC.	6			
STP	STP NUCLEAR OPERATING CO.	2			
TEPCO	TOKYO ELECTRIC POWER CO.,INC.	17			2
TNPC	GUANGDONG TAISHAN NUCLEAR POWER JOINT VENTURE COMPANY LIMITED (TNPC), JOINT VENTURE BETWEEN EDF (30%) AND GUANGDONG NUCLEAR POWER GROUP (CGNPC).		2		
TOHOKU	TOHOKU ELECTRIC POWER CO.,INC	4			2
TPC	TAI POWER CO.	6			
TQNPC	THE THIRD QINSHAN JOINTED VENTURE COMPANY LTDA.	2	2		
TVA	TENNESSEE VALLEY AUTHORITY	6	1		
TVO	TEOLLISUUDEN VOIMA OY	2	1		
UFG	UNION FINENSA GENERATION S.A.				1
UKAEA	UNITED KINGDOM ATOMIC ENERGY AUTHORITY				4
VAK	VERSUCHSATOMKRAFTWERK KAHL GMBH				1

TABLE 24. OPERATORS - Abbreviations and Summary — continued

Operator Code	Full Name	Number of Reactors, as of 31 Dec. 2010					
		Operational	Construction	LT Shut Down	Shut Down	Planned	
WCNOC	WOLF CREEK NUCLEAR OPERATION CORP.	1					
YAEC	YANKEE ATOMIC ELECTRIC CO.				1		
YJNPC	YANGJIANG NUCLEAR POWER COMPANY		3				3
not specified							41
TOTAL		441	67	5	125		120

TABLE 25. NSSS SUPPLIERS - Abbreviations and Summary

NSSS Supplier Code	Full Name	Number of Reactors, as of 31 Dec. 2010		
		Operational	Construction	Shut Down / Planned
AF/W	ASSOCIATION ACEC, FRAMATOME ET WESTINGHOUSE.			
ABBATOM	ABBATOM (FORMERLY ASEA-ATOM)	7		1
AC	ALLIS CHALMERS			2
ACECOWEN	ACECOWEN (ACEC-COCKERILL-WESTINGHOUSE)	4		3
ACLF	(ACECOWEN - CREUSOT LOIRE - FRAMATOME)	1		
AECL	ATOMIC ENERGY OF CANADA LTD.	9		2
AECU/DAE	ATOMIC ENERGY OF CANADA LTD.A AND DEPARTMENT OF ATOMIC ENERGY(INDIA)	1		
AECU/DHI	ATOMIC ENERGY OF CANADA LTD./DOOSAN HEAVY INDUSTRY & CONSTRUCTION	3		
AEE	ATOMENERGOEXPORT	8		6
AEG	ALLGEMEINE ELEKTRICITAETS-GESELLSCHAFT			1
AEG.GE	ALLGEMEINE ELEKTRICITAETS-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 09		4	1
ASE	ATOMSTROYEXPORT		5	1
ASEASTAL	ASEA-ATOM / STAL-LAVAL	2		1
ASPALDO	ASPALDO			1
AIEE	ATOMENERGOEXPORT			6
B&W	BABCOCK & WILCOX CO.	7		3
BBK	BROWN BOVERI-KRUPP REAKTORBAU GMBH			1
BBR	BROWN BOVERI REAKTOR GMBH			1
CE	COMBUSTION ENGINEERING CO.			1
CEA	COMMISSARIAT A L'ENERGIE ATOMIQUE	14		1
CGE	CANADIAN GENERAL ELECTRIC	1		1
CNCLNEY	CNIM-CONSTRUCTIONS NAVALES ET INDUSTRIELLES DE MEDITERRANEE CL - CREUSOT LOI			1
CNNC	CHINA NATIONAL NUCLEAR CORPORATION	5	2	
DPEC	DONGFANG ELECTRIC CORPORATION	1		
DHICKAEC	DOOSAN HEAVY INDUSTRIES & CONSTRUCTION CO.LTD./KOREA ATOMICENERGY RESEARCH	2	21	13

TABLE 25. NSSS SUPPLIERS - Abbreviations and Summary — continued

NSSS Supplier Code	Full Name	Number of Reactors, as of 31 Dec. 2010				
		Operational	Construction	LT/Shut Down	Shut Down	Planned
DHICKOPC	DOOSAN HEAVY INDUSTRIES & CONSTRUCTION CO.LTD./KOREA POWER ENGINEERING CO.	7	5			2
EE/B&WT	THE ENGLISH ELECTRIC CO. LTD. / BABCOCK & WILCOX CO. / TAYLOR WOODROW CONSTR.	2			4	
EL/WEST	ELETRONUCLEARE ITALIANA / WESTINGHOUSE ELECTRIC CORP.	1			1	
FAEA	FEDERAL ATOMIC ENERGY AGENCY	66			5	
FRAM	FRAMATOME	2			3	
FRAMACEC	FRAMACECO (FRAMATOME-ACEC-COCKERILL)					
GA	GENERAL ATOMIC CORP.				2	
GAAA	GRUPPEMENT ATOMIQUE ALSACIENNE ATLANTIQUE	47	2		1	
GE	GENERAL ELECTRIC CO.				11	
GE.AEG	GENERAL ELECTRIC COMPANY (US), ALLGEMEINE ELEKTRICITAETS- GESELLSCHAFT	1			1	
GE/GETSC	GENERAL ELECTRIC CO. / GENERAL ELECTRIC TECHNICAL SERVICES CO.	2				
GE/T	GENERAL ELECTRIC CO. / TOSHIBA CORPORATION	2				
GEC	GENERAL ELECTRIC COMPANY (UK)	2			3	
GETSCO	GENERAL ELECTRIC TECHNICAL SERVICES CO.					
GNEPRWA	GENERAL NUCLEAR ENGINEERING & PUERTO RICO WATER RESOURCES AUTHORITY (US)				1	
GTM	GRANDS TRAVAUX DE MARSEILLE				1	
H/G	HITACHI GE NUCLEAR ENERGY, LTD.	10	1		1	
HITACHI	HITACHI LTD.					
HRB	HOCHTEMPERATUR-REAKTORBAU GMBH				1	
IA	INTERATOM INTERNATIONALE ATOMREAKTORBAU GMBH				1	
ICL/FE	INTERNATIONAL COMBUSTION LTD. / FAIREY ENGINEERING LTD.				1	
IZ	IZHORSKIYE ZAVODY	2			1	2
KWU	SIEMENS KRAFTWERK UNION AG	20	1		1	
LEVIVIER	LEVIVIER					
MAEC-KAZ	MAEC-KAZATOMPROMMANGISHLAK ATOMIC ENERGY COMPLEX-KAZATOMPROM				2	
MAEP	MINATOMENERGOPROM. MINISTRY OF NUCLEAR POWER AND INDUSTRY				1	
MHI	MITSUBISHI HEAVY INDUSTRIES LTD.	20	2		2	
MSM	MINISTRY OF MEDIUM MACHINE BUILDING OF THE USSR (MINSREDMASH)					
NEI/P	NEI PARSONS	2			5	
NGA	NATIONALE GESELLSCHAFT ZUR FORDERUNG DER INDUSTRIELLEN ATOMTECHNIK					
NINC	NATIONAL NUCLEAR CORPORATION	2			1	

TABLE 25. NSSS SUPPLIERS - Abbreviations and Summary — continued

NSSS Supplier Code	Full Name	Number of Reactors, as of 31 Dec. 2010				
		Operational	Construction	LTShut Down	Shut Down	Planned
NPC	NUCLEAR POWER CO. LTD.	6				
NPCL	NUCLEAR POWER CORPORATION OF INDIA LTD.	15	3			2
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 LTD.	1				
RDM	ROTTERDAMSE DROOGDOK MAATSCHAPPIJ (RDM) IN ROTTERDAM (NL)				1	
ROSATOM	STATE ATOMIC ENERGY CORPORATION ROSATOM	32	11			39
S/KWU	SIEMENS/KRAFTWERK UNION AG	1				
SACM	SOCIETE ALSACIENNE DE CONSTRUCTIONS MECANIQUES				2	
SIEM.KWU	SIEMENS AG, KRAFTWERK UNION AG				2	
SIEMENS	SIEMENS AG, POWER GENERATION -FRG	1	1			
SKODA	SKODA CONCERN NUCLEAR POWER PLANT WORKS	10	2			
T/H/F/M	TOSHIBA / HITACHI / FUJI ELECTRIC HOLDINGS / MITSUBISHI HEAVY INDUSTRIES		1			
TNPG	THE NUCLEAR POWER GROUP LTD.	6				
TOSHIBA	TOSHIBA CORPORATION	15				
UEC	UNITED ENGINEERS AND CONTRACTORS				2	
UKAEA	UNITED KINGDOM ATOMIC ENERGY AUTHORITY				1	
WH	WESTINGHOUSE ELECTRIC CORPORATION	71	3		10	6
WH/MHI	WESTINGHOUSE ELECTRIC CORPORATION / MITSUBISHI HEAVY INDUSTRIES LTD.	1	2		10	2
not specified			1			50
TOTAL		441	67	5	125	120

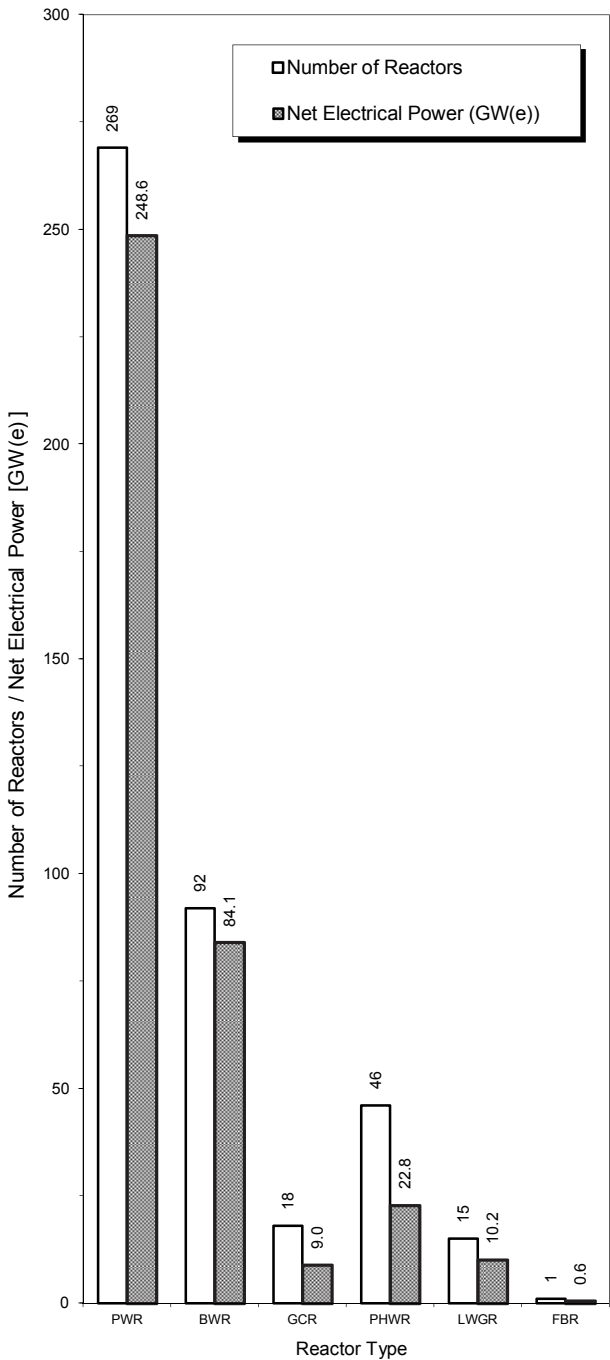


Figure 1. Nuclear reactors by type and net electrical power (as of 31 Dec. 2010)

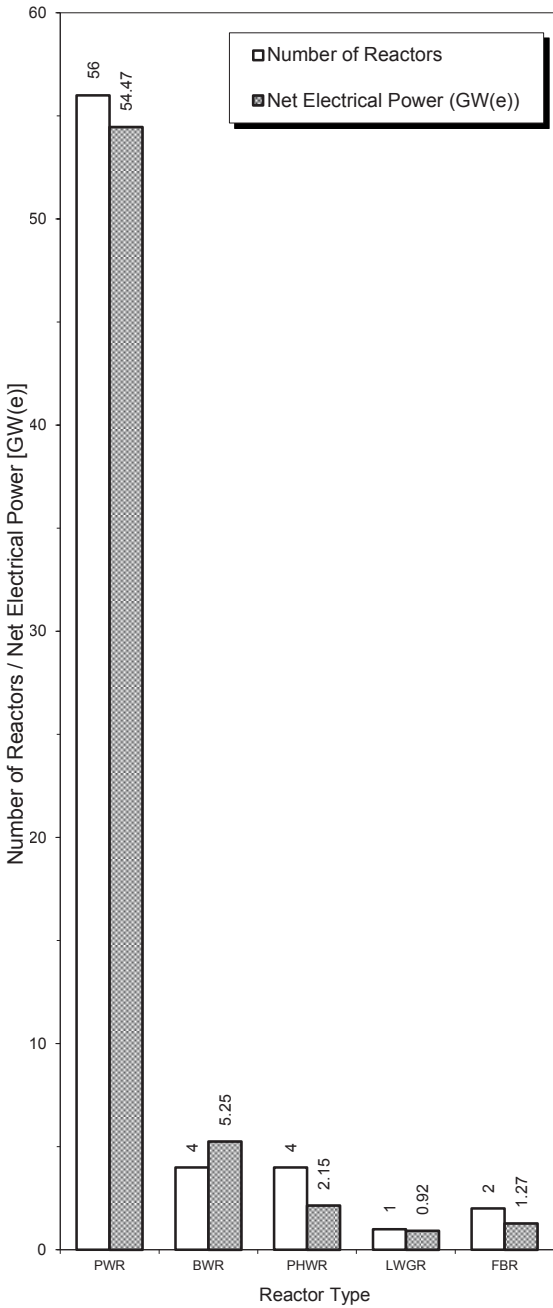


Figure 2. Reactors under construction by type and net electrical power (as of 31 Dec. 2010)

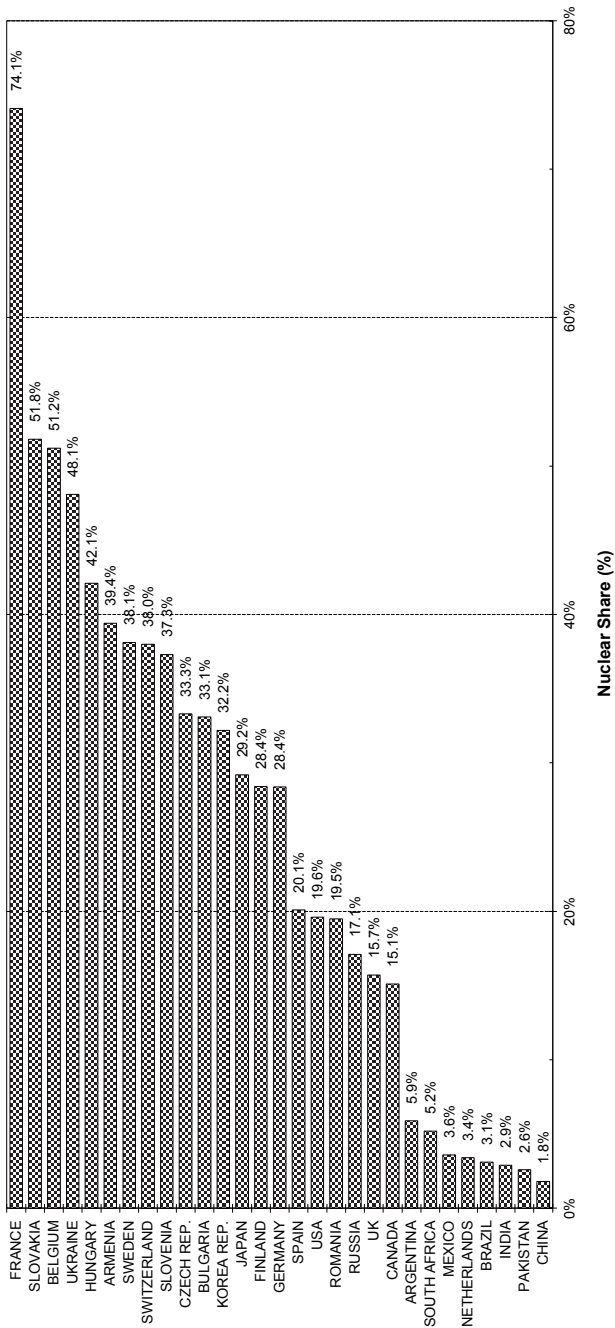


Figure 3. Nuclear share of electricity generation (as of 31 Dec. 2010)

Note: The nuclear share of electricity supplied in Taiwan, China, was 19.3% of the total.

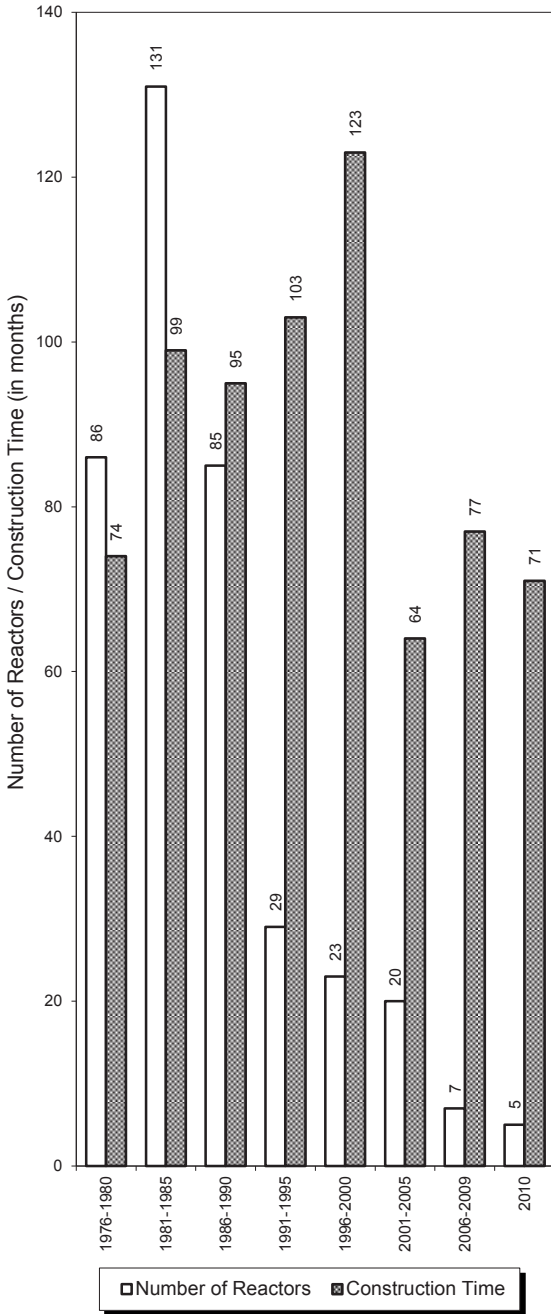


Figure 4. Worldwide median construction time span (as of 31 Dec. 2010)

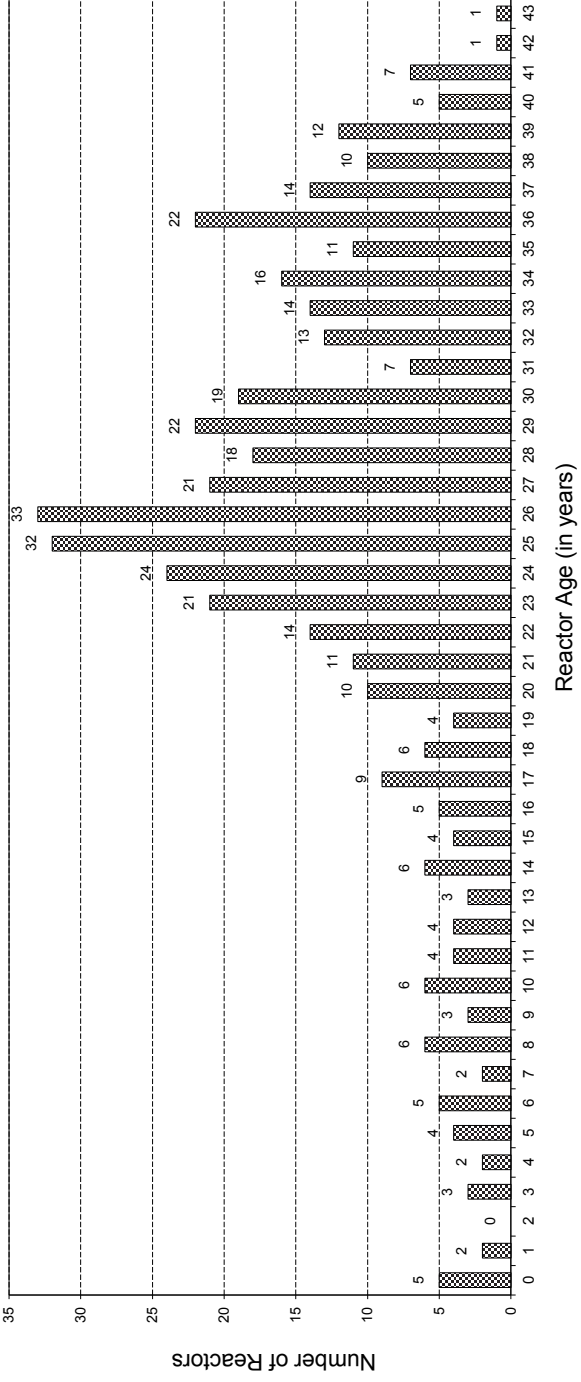


Figure 5. Number of reactors in operation by age (as of 31 Dec. 2010)

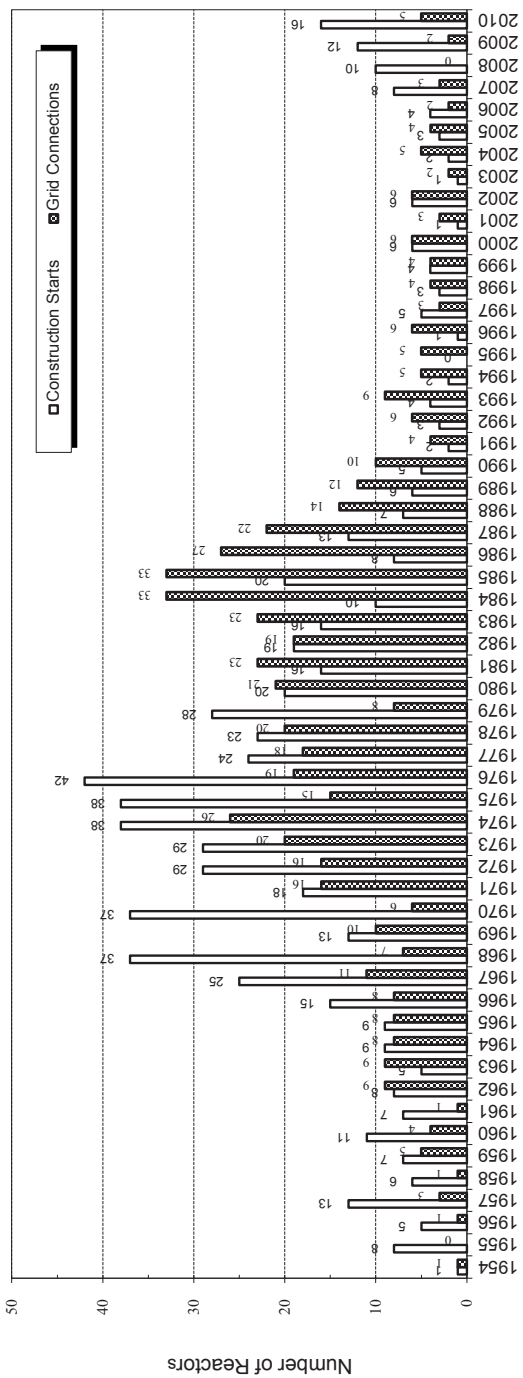


Figure 6. Annual construction starts and connections to the grid (1954 — 2010)



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