



Nuclear Power Reactors in the World



IAEA

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INTRODUCTION

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

- General information as of the end of 2008 on power reactors operating or under construction, and shut down;
- Performance data on reactors operating in the Agency's Member States, as reported to the IAEA.

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

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

<http://www.iaea.org/dbpage>.

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

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DEFINITIONS

Performance Factors

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

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

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

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

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

$$\text{OF (\%)} = \frac{\text{Online Hours}}{\text{Total Hours}} \times 100$$

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

- PEL planned energy loss: is the energy (MW·h) that was not supplied during the period because of planned shutdowns or load reductions due to causes under plant management control. Energy losses are considered planned if they are scheduled at least four weeks in advance.
- UEL unplanned energy loss: the energy (MW·h) that was not supplied during the period because of unplanned shutdowns, outage extensions, or load reductions due to causes under plant management control. Energy losses are considered to be unplanned if they are not scheduled at least four weeks in advance.
- XEL external energy loss: the energy (MW·h), that was not supplied due to constraints reducing plant availability and being beyond plant management control.
- EG the net electrical energy supplied during the reference period as measured at the unit outlet terminals, i.e. after deducting the electrical energy taken by unit auxiliaries and the losses in transformers that are considered integral parts of the unit.

Construction Start

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

First Criticality

Date when the reactor is made critical for the first time.

Grid Connection

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

Commercial Operation

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

Permanent Shutdown

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

Long term Shutdown

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

Units and Energy Conversion

1 terawatt-hour (TW·h) = 10^6 megawatt-hours (MW·h).

For an average power plant,

1 TW·h = 0.39 megatonnes of coal equivalent (input)
= 0.23 megatonnes of oil equivalent (input).

TABLE 1. REACTORS IN OPERATION, LONG-TERM SHUTDOWN AND UNDER CONSTRUCTION, 31 DEC. 2008

Country	Reactors in Operation		Long-term Shutdown Reactors		Reactors under Construction		Nuclear Electricity Supplied in 2008	
	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	6.85	6.18
ARMENIA	1	376					2.27	39.35
BELGIUM	7	5824					43.36	53.76
BRAZIL	2	1766					13.21	3.12
BULGARIA	2	1906			2	1906	14.74	32.92
CANADA	18	12577	4	2726	11	10220	88.30	14.80
CHINA	11	8438					65.32	2.15
CZECH REP.	6	3634					25.02	32.45
FINLAND	4	2696			1	1600	22.05	29.73
FRANCE	59	63260			1	1600	419.80	76.18
GERMANY	17	20470					140.89	28.82
HUNGARY	4	1859					13.87	37.15
INDIA	17	3782			6	2910	13.18	2.03
IRAN, ISL. REP.					1	915	NA	NA
JAPAN	55	47278			2	2191	241.25	24.93
KOREA REP.	20	17647	1	246	5	5180	144.25	35.62
LITHUANIA	1	1185					9.14	72.89
MEXICO	2	1300					9.36	4.04
NETHERLANDS	1	482					3.93	3.80
PAKISTAN	2	425			1	300	1.74	1.91
ROMANIA	2	1300					10.33	17.54
RUSSIA	31	21743			8	5809	152.06	16.86
SLOVAKIA	4	1711					15.45	56.42
SLOVENIA	1	666					5.97	41.71
SOUTH AFRICA	2	1800					12.75	5.25
SPAIN	8	7450					56.45	18.27
SWEDEN	10	8996					61.34	42.04
SWITZERLAND	5	3220					26.27	39.22

TABLE 1. REACTORS IN OPERATION, LONG-TERM SHUTDOWN AND UNDER CONSTRUCTION, 31 DEC. 2008 — continued

Country	Reactors in Operation		Long-term Shutdown Reactors		Reactors under Construction		Nuclear Electricity Supplied in 2008	
	No of Units	Total MW(e)	No of Units	Total MW(e)	No of Units	Total MW(e)	TW(e).h	% of Total
UK	19	10097					48.21	13.45
UKRAINE	15	13107			2	1900	84.47	47.40
USA	104	100683			1	1165	806.68	19.66
Total	438	371562	5	2972	44	38988	2597.81	17.71

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

— 6 units, 4949 MW(e) in operation; 2 units, 2600 MW(e) under construction;

— 39.30 TW(e).h of nuclear electricity generation, representing 17.45% of the total electricity generated there;

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

TABLE 2. TYPE AND NET ELECTRICAL POWER OF REACTORS CONNECTED TO THE GRID, 31 DEC. 2008

Country	PWR		BWR		GCR		PHWR		LWGR		FBR		Total	
	No.	MW(e)	No.	MW(e)	No.	MW(e)	No.	MW(e)	No.	MW(e)	No.	MW(e)	No.	MW(e)
ARGENTINA							2	935					2	935
ARMENIA	1	376											1	376
BELGIUM	7	5824											7	5824
BRAZIL	2	1766											2	1766
BULGARIA	2	1906											2	1906
CANADA							18	12577					18	12577
CHINA	9	7138					2	1300					11	8438
CZECH REP.	6	3634											6	3634
FINLAND	2	976	2	1720									4	2696
FRANCE	58	63130									1	130	59	63260
GERMANY	11	14013	6	6457									17	20470
HUNGARY	4	1859											4	1859
INDIA			2	300			15	3482					17	3782
JAPAN	23	18420	32	28858			4	2722					55	47278
KOREA REP.	16	14925											20	17647
LITHUANIA									1	1185			1	1185
MEXICO			2	1300									2	1300
NETHERLANDS	1	482											1	482
PAKISTAN	1	300											1	300
ROMANIA													2	425
RUSSIA	15	10964					2	1300					2	1300
SLOVAKIA	4	1711											4	1711
SLOVENIA	1	666											1	666
SOUTH AFRICA	2	1800											2	1800
SPAIN	6	5940	2	1510									8	7450
SWEDEN	3	2787	7	6209									10	8996
SWITZERLAND	3	1700	2	1520									5	3220
UK	1	1188			18	8909							19	10097
UKRAINE	15	13107											15	13107
USA	69	66739	35	33944									104	100683
TOTAL	264	243159	94	84959	18	8909	44	22441	16	11404	2	690	438	371562

The totals include 6 units, 4949 MW(e) in Taiwan, China.

TABLE 3. TYPE AND NET ELECTRICAL POWER OF REACTORS UNDER CONSTRUCTION, 31 DEC. 2008

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
BULGARIA	2	1906									2	1906
CHINA	11	10220									11	10220
FINLAND	1	1600									1	1600
FRANCE	1	1600									1	1600
INDIA	2	1834			3	606				1	470	2910
IRAN,ISL.REP.	1	915									1	915
JAPAN	1	866	1	1325							2	2191
KOREA REP.	5	5180									5	5180
PAKISTAN	1	300									1	300
RUSSIA	6	4134					1	925			8	5809
UKRAINE	2	1900								1	750	1900
USA	1	1165									2	1900
TOTAL	34	31620	(*) 3	3925	4	1298	1	925	2	1220	44	38988

(*) The totals include 2 units (2x BWR), 2600 MW(e) in Taiwan, China. During 2008, 10 reactors, 10470 MW(e) started construction.

TABLE 4. REACTOR YEARS OF EXPERIENCE, UP TO 31 DEC. 2008

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	60	7
ARMENIA	1	376			1	376	2	752	34	8
BELGIUM	7	5824			1	10	8	5834	226	7
BRAZIL	2	1766					2	1766	35	3
BULGARIA	2	1906			4	1632	6	3538	145	3
CANADA	18	12577	4	2726	3	478	25	15781	564	2
CHINA	11	8438					11	8438	88	3
CZECH REP.	6	3634					6	3634	104	10
FINLAND	4	2696					4	2696	119	4
FRANCE	59	63260			11	3748	70	67008	1641	2
GERMANY	17	20470			19	5879	36	26349	734	5
HUNGARY	4	1859					4	1859	94	2
INDIA	17	3782					17	3782	301	4
ITALY							4	1423	81	
JAPAN	55	47278	1	246	4	1423	59	47821	1386	8
KAZAKHSTAN					3	297	1	52	25	10
KOREA REP.	20	17647			1	52	20	17647	319	8
LITHUANIA	1	1185			1	1185	2	2370	42	6
MEXICO	2	1300					2	1300	33	11
NETHERLANDS	1	482			1	55	2	537	64	
PAKISTAN	2	425					2	425	45	10
ROMANIA	2	1300					2	1300	13	11
RUSSIA	31	21743			5	786	36	22529	963	4
SLOVAKIA	4	1711			3	909	7	2620	128	7
SLOVENIA	1	666					1	666	27	3
SOUTH AFRICA	2	1800			2	621	2	1800	48	3
SPAIN	8	7450			2	1225	10	8071	261	6
SWEDEN	10	8996			3		13	10221	362	6

TABLE 4. REACTOR YEARS OF EXPERIENCE, UP TO 31 DEC. 2008 — 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	3220					5	3220	168	10
UK	19	10097			26	3666	45	13763	1438	8
UKRAINE	15	13107			4	3515	19	16622	353	6
USA	104	100683			28	9764	132	110447	3395	9
Total	438	371562	5	2972	120	35621	563	410155	13475	7

Notes:

1. The total includes the following data from Taiwan, China:
— reactors connected to the grid: 6 units, 4949 MW(e), 164 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 2008

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		2007		2008	
	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	935	2	978	2	935	2	935	2	935
ARMENIA	2	816	2	816	1	376	1	376	1	376	1	376	1	376	1	376
BELGIUM	4	1670	8	5464	7	5501	7	5631	7	5712	7	5801	7	5824	7	5824
BRAZIL			1	626	1	626	1	626	1	1976	2	1901	2	1795	2	1766
BULGARIA	3	1224	4	1632	5	2585	6	3538	6	3760	4	2722	2	1906	2	1906
CANADA	10	5172	16	9741	20	13993	21	14902	14	9998	18	12584	18	12610	18	12577
CHINA			1	391	4	1632	3	2188	3	2188	9	6587	11	8438	11	8438
CZECH REP.			1	2308	4	2310	4	1782	5	2611	6	3373	6	3619	6	3634
FINLAND	4	2208	4	2300	4	2310	4	2310	4	2656	4	2676	4	2696	4	2696
FRANCE	22	14388	43	37478	56	58608	56	58573	59	63080	59	63260	59	63260	59	63260
GERMANY	19	10323	24	18110	21	21250	19	20972	19	21283	17	20339	17	20430	17	20470
HUNGARY			2	825	4	1710	4	1729	4	1729	4	1755	4	1829	4	1859
INDIA	4	832	6	1143	7	1324	10	1746	14	2508	15	2993	17	3782	17	3782
ITALY	4	1112	3	1273												
JAPAN	23	14918	33	23612	41	30867	50	39625	52	43262	55	47593	55	47587	55	47278
KAZAKHSTAN	1	135	1	135	1	135	1	50								
KOREA REP.	1	564	5	3580	9	7220	11	9115	16	12990	20	16810	20	17451	20	17647
LITHUANIA			1	1380	2	2760	2	2370	2	2370	1	1185	1	1185	1	1185
MEXICO			1	640	1	640	2	1256	2	1290	2	1360	2	1360	2	1300
NETHERLANDS	2	498	2	508	2	539	2	510	1	449	1	450	1	482	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	1	655	1	655	2	1305	2	1300
RUSSIA	20	8596	4	1632	4	1632	4	1632	30	19848	31	21743	31	21743	31	21743
SLOVAKIA	2	780	4	1632	4	1632	4	1632	6	2440	6	2442	5	2034	4	1711
SLOVENIA			1	632	1	620	1	620	1	676	1	656	1	666	1	666
SOUTH AFRICA			2	1840	2	1840	2	1840	2	1840	2	1800	2	1800	2	1800
SOUTH AFRICA	3	1073	8	5608	9	7099	9	7099	9	7468	10	7591	8	7450	8	7450
SPAIN	8	5515	12	9450	12	9919	12	10058	11	9417	10	8916	10	9034	10	8996
SWEDEN	4	1940	5	2881	5	2942	5	3056	5	3170	5	3220	5	3220	5	3220
SWITZERLAND																

TABLE 5. OPERATING REACTORS AND NET ELECTRICAL POWER, 1980 TO 2008 — 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		2007		2008			
	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	8686	38	12485	37	13496	35	13718	33	13059	23	11852	19	10222	19	10097		
UKRAINE	3	2286	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	100266	104	100683		
WORLD	245	135285	363	248070	416	320482	434	342225	435	350590	441	368136	439	371758	438	371562		

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

- 1980: 2 units, 1208 MW(e), 1985: 6 units, 4890 MW(e), 1990: 6 units, 4828 MW(e), 1995: 6 units, 4884 MW(e), 2000: 6 units, 4884 MW(e), 2005: 6 units, 4884 MW(e), 2007: 6 units, 4921 MW(e), 2008: 6 units, 4949 MW(e).

TABLE 6. NUCLEAR ELECTRICITY PRODUCTION AND SHARE FROM 1980 TO 2008

Country	Nuclear production (TW(e).h) of reactors connected to the Grid at 31st Dec. of the year															
	1980		1985		1990		1995		2000		2005		2007		2008	
	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	6.2	6.85	6.2	6.2
ARMENIA	11.86	NA	29.25	59.8	40.59	60.1	39.30	55.5	1.84	33.0	2.50	42.7	2.35	43.5	2.27	39.4
BELGIUM			3.17	1.7	2.06	1.0	2.33	1.0	5.59	56.8	45.34	55.6	45.85	54.1	43.36	53.8
BRAZIL	5.71	NA	12.17	31.6	13.51	35.7	16.22	46.4	16.79	45.0	17.38	44.1	13.69	32.1	14.74	32.9
BULGARIA	38.02	NA	59.47	12.7	69.87	14.8	93.98	17.3	69.12	11.8	86.83	14.5	88.19	14.7	88.30	14.8
CANADA							12.13	1.2	16.02	1.2	50.33	2.0	59.30	1.9	65.32	2.2
CZECH REP.			1.99	NA	11.77	NA	12.23	20.0	12.71	18.7	23.25	30.5	24.64	30.3	25.02	32.5
FINLAND	6.68	NA	17.98	38.2	18.13	35.1	18.13	29.9	21.58	32.2	22.36	32.9	22.51	28.9	22.05	29.7
FRANCE	57.31	NA	213.26	64.8	297.61	74.5	358.71	76.1	395.39	76.4	431.18	78.5	420.13	76.9	419.80	76.2
GERMANY	41.44	NA	119.59	31.2	139.37	33.1	146.13	29.6	160.66	30.6	154.61	31.1	133.21	27.3	140.89	28.3
HUNGARY			6.10	23.6	12.89	51.4	13.20	42.3	13.35	40.6	13.02	37.2	13.86	36.8	13.87	37.2
INDIA	2.77	NA	3.87	2.2	5.29	2.2	6.99	1.9	14.23	3.1	15.73	2.8	15.76	2.5	13.18	2.0
ITALY	2.11	NA	6.46	3.8												
JAPAN	79.11	NA	145.37	22.7	187.19	27.1	274.71	33.4	305.67	33.8	280.50	29.3	267.34	27.5	241.25	24.9
KAZAKHSTAN							0.08	0.1								
KOREA REP.	3.26	NA	12.14	23.2	50.26	49.1	60.21	36.1	103.54	40.7	137.59	44.7	136.60	35.3	144.25	35.6
LITHUANIA			8.75	NA	15.70	NA	10.64	86.1	7.42	73.9	9.54	70.3	9.07	64.4	9.14	72.9
MEXICO					2.78	2.6	7.53	6.0	7.92	3.9	10.32	5.0	9.95	4.6	9.36	4.0
NETHERLANDS	3.97	NA	3.69	6.1	3.29	4.9	3.78	4.9	3.70	4.3	3.77	3.9	3.99	4.1	3.93	3.8
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	2.31	1.74	1.74	1.9
ROMANIA									5.05	10.9	5.11	8.6	7.08	13.0	10.33	17.5
RUSSIA	43.78	NA	88.26	NA	109.62	NA	91.59	11.8	120.10	15.0	137.64	15.8	147.99	16.0	152.06	16.9
SLOVAKIA	4.52	NA	8.70	NA	11.16	NA	11.35	44.1	15.17	53.4	16.34	56.1	14.16	54.3	15.45	56.4
SLOVENIA			3.85	NA	4.39	NA	4.57	39.5	4.55	37.4	5.61	42.4	5.43	41.6	5.97	41.7
SOUTH AFRICA			5.39	4.2	8.47	5.6	11.29	6.5	13.00	6.6	12.24	5.5	12.60	5.5	12.75	5.3
SPAIN	4.98	NA	26.83	24.0	51.98	35.9	53.49	34.1	59.49	27.6	54.99	19.6	52.71	17.4	56.45	18.0
SWEDEN	25.42	NA	55.89	42.3	65.27	45.9	67.19	46.6	51.88	39.0	69.64	44.9	64.31	46.1	61.34	42.3
SWITZERLAND	13.63	NA	21.28	39.8	22.40	42.6	23.58	39.9	25.05	38.2	22.11	38.0	26.49	40.0	26.27	39.2

TABLE 6. NUCLEAR ELECTRICITY PRODUCTION AND SHARE FROM 1980 TO 2008 — continued

Country	Nuclear production (TW(e).h) of reactors connected to the Grid at 31st Dec. of the year															
	1980		1985		1990		1995		2000		2005		2007		2008	
	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	19.9	57.52	15.1	48.21	13.5
UKRAINE	6.38	NA	35.81	NA	71.26	NA	65.78	37.8	72.56	47.3	83.40	48.5	87.22	48.1	84.47	47.4
USA	249.84	NA	378.68	15.5	578.08	20.6	673.52	22.5	755.55	19.8	783.35	19.3	806.55	19.4	806.68	19.7
WORLD	635.36		1327.19		1890.35		2190.13		2440.37		2626.40		2608.14		2597.81	

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 23.64% of the total electricity generated there
- 2005: 38.4 TW(e).h of nuclear electricity generation, representing 20.25% of the total electricity generated there
- 2007: 38.96 TW(e).h of nuclear electricity generation, representing 19.3% of the total electricity generated there
- 2008: 39.3 TW(e).h of nuclear electricity generation, representing 19.62% of the total electricity generated there

TABLE 7. ANNUAL CONSTRUCTION STARTS AND CONNECTIONS TO THE GRID, 1954 TO 2008

Year	Construction Starts		Connections to the Grid		Reactors in operation	
	Units	MW(e)	Units	MW(e)	Units	MW(e)
1954	1	60	1	5	1	5
1955	8	352			1	5
1956	5	581	1	50	2	55
1957	13	1746	3	134	5	189
1958	6	434	1	50	6	239
1959	7	906	5	238	11	477
1960	11	918	4	452	15	929
1961	7	1391	1	15	16	946
1962	7	1237	9	893	25	1839
1963	5	2100	9	456	33	2271
1964	9	2747	8	1036	40	3232
1965	9	3032	8	1681	48	4913
1966	15	7116	8	1375	55	6279
1967	25	15395	11	2107	64	8310
1968	32	21802	6	1063	68	9334
1969	16	11485	10	3670	78	13004
1970	36	23849	6	3539	84	18986
1971	14	8713	16	7748	99	26611
1972	30	23160	16	8538	113	35268
1973	27	22981	20	11696	132	45953
1974	27	23634	26	16878	154	63290
1975	32	30017	15	9760	169	72709
1976	33	30536	19	13533	186	86162
1977	19	16478	18	12889	200	98696
1978	14	13079	20	15496	219	114213
1979	25	21763	8	6889	225	120102
1980	20	18925	21	15170	245	135285
1981	15	14123	23	20391	267	156098
1982	14	15627	19	14997	284	170790
1983	9	7628	23	18921	306	190067
1984	7	7045	33	30878	336	220865
1985	14	11568	33	30631	363	248070
1986	5	4046	27	26876	389	274438
1987	7	6820	22	22002	407	298233
1988	5	5836	14	13618	416	307457
1989	6	4014	12	10397	420	314333
1990	5	3263	10	10531	416	320482
1991	2	2246	4	3668	415	323865
1992	3	3092	6	4799	418	327202
1993	4	3535	9	9026	427	335856
1994	2	1300	5	4164	429	338860
1995			5	3529	434	342225
1996	1	610	6	6974	438	348140
1997	5	4386	3	3555	434	348836
1998	3	2111	4	2978	430	345756
1999	4	4560	4	2704	432	348194
2000	6	5265	6	3213	435	350590
2001	1	1304	3	2696	438	353321
2002	5	2440	6	5016	439	357708
2003	1	202	2	1625	437	359961
2004	2	1336	5	4785	438	364704
2005	3	2900	4	3821	441	368136
2006	4	3320	2	1490	435	369682
2007	8	6519	3	1785	439	371758
2008	10	10470			438	371562

TABLE 8. NUMBER OF NEW REACTORS CONNECTED TO THE GRID AND MEDIAN 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 2008	
	No. Reactors	Median Months	No. Reactors	Median Months	No. Reactors	Median Months	No. Reactors	Median Months	No. Reactors	Median Months	No. Reactors	Median Months	No. Reactors	Median Months
UKRAINE	3	89	7	64	6	57	1	113	1	278	2	227		
USA	18	95	25	115	22	144	1	221	1	278				
TOTAL	86	74	131	99	85	95	29	103	23	146	20	64	5	80

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

No grid connection in 2008

TABLE 9. CONSTRUCTION STARTS DURING 2008

Country	Reactor		Type	Model	Capacity [MW]		Operator	NSSS Supplier	Construction start	Grid Connection	Commercial Operation
	Code	Name			Thermal	Gross					
CHINA	CN -28	FANGJASHAN 1	PWR	CPR-1000	2905	1087	QNPC	DFEC	2008-12	—	—
	CN -30	FUQING 1	PWR	CPR-1000	2905	1087	Fuqing	DFEC	2008-11	—	—
	CN -21	HONGYANHE 2	PWR	CPR-1000	2905	1080	LHNPC	DFEC	2008-3	—	—
	CN -36	NINGDE 1	PWR	M310	2905	1087	NDNPC	DFEC	2008-2	—	—
	CN -37	NINGDE 2	PWR	M310	2905	1080	NDNPC	DFEC	2008-11	—	—
	CN -18	YANGJIANG 1	PWR	CPR-1000	2905	1087	YJNPC	DFEC	2008-12	—	—
KOREA REP.	KR -25	SHIN-KORI-3	PWR	APR-1400	3983	1400	KHNP	DHICKOPC	2008-10	—	2013-9
	KR -24	SHIN-WOLSONG-2	PWR	OPR-1000	2825	1000	KHNP	DHICKOPC	2008-9	2012-5	2012-10
RUSSIA	RU -163	LENINGRAD 2-1	PWR	VVER-AES-	3200	1170	EA	ROSATOM	2008-10	—	—
	RU -161	NOVOVORONEZH 2-1	PWR	VVER-1100	3200	1170	EA	ROSATOM	2008-6	—	2012-12

During 2008, 10 reactors (10470 MW) started construction.

TABLE 10. CONNECTIONS TO THE GRID DURING 2008

Country	Reactor		Type	Model	Capacity [MW]			Operator	NSSS Supplier	Construction Start	First Criticality	Grid Connection
	Code	Name			Thermal	Gross	Net					

There were no grid connections in 2008.

TABLE 11. SCHEDULED CONNECTIONS TO THE GRID DURING 2009

Country	Reactor		Type	Model	Capacity [MW]			Operator	NSSS Supplier	Construction Start	First Criticality	Grid Date
	Code	Name			Thermal	Gross	Net					
INDIA	IN -16	KAIGA-4	PHWR	Horizontal Pre	800	220	202	NPCIL	NPCL	2002-5	—	2009-11
	IN -25	KUDANKULAM-1	PWR	VVER V-412	0	1000	917	NPCIL	MAEP	2002-3	—	2009-7
	IN -20	RAJASTHAN-6	PHWR	Horizontal Pre	0	220	202	NPCIL	NPCL	2003-1	—	2009-6
IRAN,I.SL.REP	IR -1	BUSHEHR 1	PWR	VVER1000 V-44	3000	1000	915	NPPDCO	ASE	1975-5	—	2009-9
JAPAN	JP -64	TOMARI-3	PWR	M (3-loop)	2652	912	866	HEPCO	MHI	2004-11	—	2009-12

During 2009, 5 reactors (3102 MW(e)) are expected to achieve grid connection.

TABLE 12. REACTORS PLANNED FOR CONSTRUCTION AS KNOWN AT 31 DEC. 2008

Country	Reactor		Type	Model	Capacity [MW]			Operator	NSSS Supplier	Expected Construction Start
	Code	Name			Thermal	Gross	Net			
BRAZIL	BR -3	ANGRA-3	PWR		3765	1350	1275	ELETRONU	KWU	—
CHINA	CN -42	BAMAOSHAN	PWR	CRP-1000	0	1080	900			—
	CN -29	FANGJIAOSHAN 2	PWR	CPR-1000	0		0			—
	CN -31	FUQING 2	PWR	CPR-1000	2905	1087	1000	Fujing	DFEC	—
	CN -24	HAIYANG 1	PWR	AP1000	0		1000	SNPC	WH	—
	CN -25	HAIYANG 2	PWR	AP1000	0	1000	0		WH	—
	CN -26	HONGSHIDING 1	PWR		0		0			—
	CN -27	HONGSHIDING 2	PWR		0		0	HONGYANH	DFEC	—
	CN -22	HONGYANHE 3	PWR	CPR-1000	2905	1080	1000	LHNPC	DFEC	—
	CN -23	HONGYANHE 4	PWR	CPR-1000	2905	1080	1000			—
	CN -38	NINGDE 3	PWR	M310	2905	1080	1000			—
	CN -39	NINGDE 4	PWR	M310	2905	1080	1000			—
	CN -16	SANMEN 1	PWR	AP-1000	3415	1115	1000	SMNPC	WH/MHI	2009-4
	CN -17	SANMEN 2	PWR	AP-1000	0	0	1000	SMNPC	WH/MHI	—
	CN -34	TAISHAN 1	PWR	EPR	0		1000			—
	CN -35	TAISHAN 2	PWR	EPR	0		1700			—
	CN -32	TAOHUJJIANG 1	PWR		0		0			—
CN -33	TAOHUJJIANG 2	PWR		0		0			—	
CN -40	XIANNING 1	PWR		0		0			—	
CN -41	XIANNING 2	PWR		0		0			—	
CN -19	YANGJIANG 2	PWR	CPR-1000	2905	1087	900	YJNPC	DFEC	—	
CN -43	YANGJIANG 3	PWR	CPR1000	2905	1087	1000	YJNPC	DFEC	—	
CN -44	YANGJIANG 4	PWR	CPR1000	2905	1087	1000	YJNPC	DFEC	—	
CN -45	YANGJIANG 5	PWR	CPR1000	2905	1087	1000	YJNPC	DFEC	—	
CN -46	YANGJIANG 6	PWR	CPR1000	2905	1087	1000	YJNPC	DFEC	—	
IRAN/ISL.REP.	IR -2	BUSHEHR 2	PWR	VVER	3000	1000	915	NPPDCO	ASE	2011-1
	IR -5	BUSHEHR 3	PWR	TBD	3000	1000	915	NPPDCO	ASE	2012-1

TABLE 12. REACTORS PLANNED FOR CONSTRUCTION AS KNOWN AT 31 DEC. 2008 — continued

Country	Reactor		Type	Model	Capacity [MW]			Operator	NSSS Supplier	Expected Construction Start
	Code	Name			Thermal	Gross	Net			
JAPAN	IR-9	DARKHOVAIN	PWR	IR-360	1113	360	330	NPPDCO		2010-1
	JP-70	FUKUSHIMA-DAICHI-7	BWR	ABWR	3926	1380	1325	TEPCO		—
	JP-71	FUKUSHIMA-DAICHI-8	BWR	ABWR	3926	1380	1325	TEPCO		—
	JP-69	HIGASHI DORI 1 (TEPCO)	BWR	ABWR	3926	1385	1325	TEPCO		—
	JP-74	HIGASHI DORI 2 (TEPCO)	BWR	ABWR	0	0	1067	TEPCO		—
	JP-72	HIGASHI DORI 2 (TOHOKU)	BWR	ABWR	0	0	1067	TOHOKU		—
	JP-62	KAMINOSEKI 1	BWR	ABWR	0	1373	0	CHUGOKU		—
	JP-63	KAMINOSEKI 2	BWR	ABWR	0	1373	0	CHUGOKU		—
	JP-73	NAMIE-ODAKA	BWR	BWR	0	0	825	TOHOKU		—
	JP-66	OHMA	BWR	ABWR	3926	1383	1325	J-POWER		—
	JP-67	TSURUGA-3	PWR	APWR	4466	1538	0	JAPCO		—
	JP-68	TSURUGA-4	PWR	APWR	4466	1538	0	JAPCO		—
	KOREA REP.	KR-26	SHIN-KORI-4	PWR	APR-1400	3938	1400	1340	KHNP	DHICKOPC
KR-27		SHIN-ULCHIN-1	PWR	APR-1400	3938	1400	1340	KHNP	DHICKOPC	2011-5
KR-28		SHIN-ULCHIN-2	PWR	APR-1400	3983	1400	1340	KHNP	DHICKOPC	2012-5
RUSSIA	RU-166	KURSK 2-1	PWR	VVER-1100	3200	1170	1000	EA	ROSATOM	—
	RU-164	LENINGRAD 2-2	PWR	VVER-1100	3200	1170	1085	EA	ROSATOM	—
	RU-165	LENINGRAD 2-3	PWR	VVER-1100	3200	1170	1085	EA	ROSATOM	—
	RU-162	NOVOVORONEZH 2-2	PWR	VVER-1100	3200	1170	1085	EA	ROSATOM	—
	TR-1	AKKUYU	PWR		0	0	0	TEAS		—

Status as of 31 December 2008, 47 reactors (36469 MW(e)) are planned.

TABLE 13. REACTORS UNDER CONSTRUCTION, 31 DEC. 2008

Country	Reactor		Type	Model	Capacity [MW]		Operator	NSSS Supplier	Construction Start	First Criticality	Grid Connection	Commercial Operation
	Code	Name			Thermal	Gross						
ARGENTINA	AR-3	ATUCHA-2	PWR		2160	745	NASA	SIEMENS	1987-7	—	2010-10	—
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	—	—	—
CHINA	CN-28	FANGJIAZHAN 1	PWR	CPR-1000	2905	1087	GNPC	DFEC	2008-12	—	—	—
	CN-30	FUJING 1	PWR	CPR-1000	2905	1087	Fuding	DFEC	2008-11	—	—	—
	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-12	LINGAO 3	PWR	M310	2905	1087	LDNPC	DFEC	2005-12	2010-7	2010-8	2010-12
	CN-13	LINGAO 4	PWR	M310	2905	1086	LDNPC	DFEC	2006-6	—	—	—
	CN-36	NINGDE 1	PWR	M310	2905	1087	LDNPC	DFEC	2008-2	—	—	—
	CN-37	NINGDE 2	PWR	M310	2905	1080	LDNPC	DFEC	2008-11	—	—	—
	CN-14	QINSHAN 2-3	PWR	CNP600	1930	650	NPQJVC	CNNC	2006-3	2010-11	2010-12	2011-3
	CN-15	QINSHAN 2-4	PWR	CNP 600	1930	650	NPQJVC	CNNC	2007-1	2009-12	2011-9	2012-1
	CN-18	YANGJIANG 1	PWR	CPR-1000	2905	1087	YJNPC	DFEC	2008-12	—	—	—
	FINLAND	FI-5	OLKILUOTO-3	PWR	EPR	4300	1720	TVO	AREVA	2005-8	—	—
FRANCE	FR-74	FLAMANVILLE-3	PWR	EPR	4300	1650	EDF	AREVA	2007-12	2011-12	2012-5	—
	IN-16	KAIGA-4	PHWR	Horizontal Pre	800	220	NPCL	NPCL	2002-5	—	—	—
INDIA	IN-25	KUDANKULAM-1	PWR	VVER V-412	1000	917	NPCL	MAEP	2002-3	—	—	—
	IN-26	KUDANKULAM-2	PWR	VVER V-412	1000	917	NPCL	MAEP	2002-7	2010-3	2010-4	2010-5
	IN-29	PFBR	FBR		1253	500	BHAVINI		2004-10	—	—	—
	IN-19	RAJASTHAN-5	PHWR	Horizontal Pre	220	202	NPCL	NPCL	2002-9	—	—	—
	IN-20	RAJASTHAN-6	PHWR	Horizontal Pre	220	202	NPCL	NPCL	2003-1	—	—	—
	IRAN,ISL.REP	IR-1	BUSHEHR 1	PWR	VVER1000 V-44	3000	1000	NPPDCO	ASE	1975-5	—	—

TABLE 13. REACTORS UNDER CONSTRUCTION, 31 DEC. 2008 — continued

Country	Reactor		Type	Model	Capacity [MW]		Operator	NSSS Supplier	Construction Start	First Criticality Connection	Grid Connection	Commercial Operation
	Code	Name			Thermal	Gross						
JAPAN	JP -65	SHIMANE-3	BWR	ABWR	3926	1373	CHUGOKU	HITACHI	2007-10	—	—	2011-12
	JP -64	TOMARI-3	PWR	M (3-loop)	2852	912	HEPCO	MHI	2004-11	—	—	2009-12
KOREA REP.	KR -21	SHIN-KORI-1	PWR	OPR-1000	2825	1000	KHNP	DHICKOPC	2006-6	2010-7	2010-8	2010-12
	KR -22	SHIN-KORI-2	PWR	OPR-1000	2825	1000	KHNP	DHICKOPC	2007-6	2011-7	2011-8	2010-12
	KR -25	SHIN-KORI-3	PWR	APR-1400	3983	1400	KHNP	DHICKOPC	2008-10	—	—	2013-9
	KR -23	SHIN-WOLSONG-1	PWR	OPR-1000	2825	1000	KHNP	DHICKOPC	2007-11	2011-5	2011-5	2011-10
	KR -24	SHIN-WOLSONG-2	PWR	OPR-1000	2825	1000	KHNP	DHICKOPC	2008-9	2012-5	2012-5	2012-10
PAKISTAN	PK -3	CHASNUPP 2	PWR	PWR	999	325	PAEC	CNNC	2005-12	2011-4	2011-5	2011-8
RUSSIA	RU -116	BELOYARSKY-4 (BN-800)	FBR	BN-800	2100	800	EA	ROSATOM	2006-7	—	—	—
	RU -37	KALININ-4	PWR	VVER V-320	3200	1000	EA	ROSATOM	1986-8	—	—	—
	RU -120	KURSK-5	LWGR	RBMK-1000	1000	925	EA	ROSATOM	1985-12	—	—	—
	RU -163	LENINGRAD 2-1	PWR	VVER-AES-2006	3200	1170	EA	ROSATOM	2008-10	—	—	—
	RU -161	NOVOVORONEZH 2-1	PWR	VVER-1100	3200	1170	EA	ROSATOM	2008-6	—	—	2012-12
	RU -151	SEVERODVINSK 1	PWR	KLT-40S 'Float	150	35	EA	ROSATOM	2007-4	—	—	2010-12
	RU -152	SEVERODVINSK 2	PWR	KLT-40S 'Float	150	35	EA	ROSATOM	2007-4	—	—	2010-12
	RU -62	VOLGODONSK-2	PWR	VVER V-320I	3200	1000	EA	ROSATOM	1983-5	—	—	—
UKRAINE	UA -51	KHMELNITSKI-3	PWR	VVER V-392B	3200	1000	NNEGC	ASE	1986-3	—	2015-1	—
	UA -52	KHMELNITSKI-4	PWR	VVER	3200	1000	NNEGC	ASE	1987-2	—	2016-1	—
USA	US -391	WATTS BAR-2	PWR	W (4-loop) I/C	3425	1218	TVA	WH	1972-12	—	2012-8	—

Status as of 31 December 2008, 44 reactors (38988 MW(e)) are planned, including 2 units (2600 MW(e)) from Taiwan, China.

TWN, CHINA

TW -7

LUNGMEN 1

TW -8

LUNGMEN 2

BWR

ABWR

3926

1350

1300

TPC

TPC

1999-3

1999-8

—

2009-12

—

2010-1

—

2010-7

TABLE 14. REACTORS IN OPERATION, 31 DEC. 2008

Country	Reactor		Type	Model	Capacity [MW]		Operator	NSSS Supplier	Construction Start	Grid Connection	Commercial Operation	EAF % 1998 to 2008	UCF % 1998 to 2008	Non-electrical Applies
	Code	Name			Thermal	Gross								
ARGENTINA	AR-1	ATUCHA-1	PHWR	KWU	1179	357	NASA	SIEMENS	1988-6	1974-3	1974-6	71.7	73.0	-
	AR-2	EMBASE	PHWR	CANDU 6	2015	648	NASA	AECL	1974-4	1983-4	1984-1	86.8	87.2	-
ARMENIA	AM-19	ARMENIA-2	PWR	VVER V-270	1375	408	ANPPJSC	FAEA	1975-7	1980-1	1980-5	64.4	66.4	-
BELGIUM	BE-2	DOEL-1	PWR		1192	412	ELECTRAB	ACECOWEN	1969-7	1974-8	1975-2	85.2	86.1	-
	BE-4	DOEL-2	PWR		1311	454	ELECTRAB	ACECOWEN	1971-9	1975-8	1975-12	81.4	82.3	-
	BE-5	DOEL-3	PWR		2775	1056	ELECTRAB	FRAMACEC	1975-1	1982-6	1982-10	85.9	87.3	-
	BE-7	DOEL-4	PWR		2988	1041	ELECTRAB	ACECOWEN	1978-12	1985-4	1985-7	84.1	84.9	-
	BE-3	TIHANGE-1	PWR	Framatome 3 lo	2873	1009	ELECTRAB	ACLF	1970-6	1975-3	1975-10	83.5	86.0	-
	BE-6	TIHANGE-2	PWR	WE 3-loops	3064	1055	ELECTRAB	FRAMACEC	1976-4	1982-10	1983-6	87.4	88.6	-
	BE-8	TIHANGE-3	PWR	WE 3-loops	3000	1065	ELECTRAB	ACECOWEN	1978-11	1985-6	1985-9	87.8	89.5	-
	BE-1	ANGRA-1	PWR	2-loop PWR	1484	520	ELETRONU	WH	1971-5	1982-4	1985-1	53.2	60.5	-
BRAZIL	BR-2	ANGRA-2	PWR	PRE KONVOI	3764	1350	ELETRONU	KWU	1976-1	2000-7	2001-2	82.5	84.6	-
	BG-5	KOZLODUY-5	PWR	VVER V-320	3000	1000	KOZNPP	AEE	1980-7	1987-11	1988-12	63.6	66.8	DH
BULGARIA	BG-6	KOZLODUY-6	PWR	VVER V-320	3000	1000	KOZNPP	AEE	1982-4	1991-8	1993-12	71.4	74.1	DH
	CA-10	BRUCE-3	PHWR	CANDU 750A	2832	805	BRUCEPOW	NEI/P	1972-7	1977-12	1978-2	72.9	73.7	-
CANADA	CA-11	BRUCE-4	PHWR	CANDU 750A	2832	805	BRUCEPOW	NEI/P	1972-9	1978-12	1979-1	71.0	71.9	-
	CA-18	BRUCE-5	PHWR	CANDU 750B	2832	872	BRUCEPOW	OHA/ECL	1978-6	1984-12	1985-3	83.4	84.1	-
	CA-19	BRUCE-6	PHWR	CANDU 750B	2690	891	BRUCEPOW	OHA/ECL	1978-1	1984-6	1984-9	80.5	81.3	-
	CA-20	BRUCE-7	PHWR	CANDU 750B	2832	872	BRUCEPOW	OHA/ECL	1979-5	1986-2	1986-4	83.8	84.7	-
	CA-21	BRUCE-8	PHWR	CANDU 750B	2690	845	BRUCEPOW	OHA/ECL	1979-8	1987-3	1987-5	82.3	83.6	-
	CA-22	DARLINGTON-1	PHWR	CANDU 850	2776	934	OPG	OHA/ECL	1982-4	1990-12	1992-11	83.5	84.5	-
	CA-23	DARLINGTON-2	PHWR	CANDU 850	2776	934	OPG	OHA/ECL	1981-9	1990-1	1990-10	76.6	77.6	-
	CA-24	DARLINGTON-3	PHWR	CANDU 850	2776	934	OPG	OHA/ECL	1984-9	1992-12	1993-2	85.7	86.6	-
	CA-25	DARLINGTON-4	PHWR	CANDU 850	2776	934	OPG	OHA/ECL	1985-7	1993-4	1993-6	85.6	86.3	-

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

TABLE 14. REACTORS IN OPERATION, 31 DEC. 2008 — continued

Country	Reactor		Type	Model	Capacity [MW]		Operator	NSSS Supplier	Construction Start	Grid Connection	Commercial Operation	EAF % 1998 to 2008	UCF % 1998 to 2008	Non-electrical Applics	
	Code	Name			Thermal	Gross									Net
	CA-12	GENTILLY-2	PWR	CANDU 6	2156	675	635	HQ	BBC	1974-4	1982-12	1983-10	81.5	83.4	-
	CA-4	PICKERING-1	PWR	CANDU 500A	1744	542	515	OPG	OIAECL	1966-6	1971-4	1971-7	65.4	65.6	-
	CA-7	PICKERING-4	PWR	CANDU 500A	1744	542	515	OPG	OIAECL	1968-5	1973-5	1973-6	66.5	66.8	-
	CA-13	PICKERING-5	PWR	CANDU 500B	1744	540	516	OPG	OIAECL	1974-11	1982-12	1983-5	73.4	74.0	-
	CA-14	PICKERING-6	PWR	CANDU 500B	1744	540	516	OPG	OIAECL	1975-10	1983-11	1984-2	77.2	77.8	-
	CA-15	PICKERING-7	PWR	CANDU 500B	1744	540	516	OPG	OIAECL	1976-3	1984-11	1985-1	76.9	77.6	-
	CA-16	PICKERING-8	PWR	CANDU 500B	1744	540	516	OPG	OIAECL	1976-9	1986-1	1986-2	75.6	76.3	-
	CA-17	POINT LEPREAU	PWR	CANDU 6	2180	680	635	NBEPIC	AECL	1975-5	1982-9	1983-2	80.4	81.5	-
CHINA	CN-2	GUANGDONG-1	PWR	M310	2905	984	944	GNPJVC	GEC	1987-8	1993-8	1994-2	82.5	86.7	-
	CN-3	GUANGDONG-2	PWR	M310	2905	984	944	GNPJVC	GEC	1988-4	1994-2	1994-5	81.8	83.8	-
	CN-6	LINGAO 1	PWR	M310	2895	990	938	LANPC	FRAM	1997-5	2002-2	2002-5	87.1	87.6	-
	CN-7	LINGAO 2	PWR	M310	2895	990	938	LANPC	FRAM	1997-11	2002-12	2003-1	87.5	87.7	-
	CN-1	QINSHAN 1	PWR	CNP-300	966	310	288	GNPC	CNNC	1985-3	1991-12	1994-4	77.1	78.9	-
	CN-4	QINSHAN 2-1	PWR	CNP600	1930	650	610	NPQJVC	CNNC	1996-6	2002-2	2002-4	76.5	76.5	-
	CN-5	QINSHAN 2-2	PWR	CNP600	1930	650	610	NPQJVC	CNNC	1997-4	2004-3	2004-5	87.4	87.5	-
	CN-8	QINSHAN 3-1	PWR	CANDU 6	2064	700	650	TQNPC	AECL	1988-6	2002-11	2002-12	86.4	86.9	-
	CN-9	QINSHAN 3-2	PWR	CANDU 6	2064	700	650	TQNPC	AECL	1998-9	2003-6	2003-7	88.8	88.9	-
	CN-10	TIANWAN 1	PWR	WER V-428	3000	1000	933	JNPC	IZ	1999-10	2006-5	2007-5	75.2	75.2	-
	CN-11	TIANWAN 2	PWR	WER V-428	3000	1000	933	JNPC	IZ	2000-10	2007-5	2007-8	85.9	85.9	-
CZECH REP.	CZ-4	DUKOVANY-1	PWR	WER V-213	1375	456	427	CEZ	SKODA	1979-1	1985-2	1985-5	82.7	83.6	-
	CZ-5	DUKOVANY-2	PWR	WER V-213	1375	456	427	CEZ	SKODA	1979-1	1986-1	1986-3	83.1	84.0	-
	CZ-8	DUKOVANY-3	PWR	WER V-213	1375	456	427	CEZ	SKODA	1979-3	1986-11	1986-12	82.9	84.6	-
	CZ-9	DUKOVANY-4	PWR	WER V-213	1375	456	427	CEZ	SKODA	1979-3	1987-6	1987-7	83.7	84.7	-
	CZ-23	TEMLIN-1	PWR	WER V-320	3000	1013	963	CEZ	SKODA	1987-2	2000-12	2002-6	65.4	65.5	DH
	CZ-24	TEMLIN-2	PWR	WER V-320	3000	1013	963	CEZ	SKODA	1987-2	2002-12	2003-4	75.1	75.3	DH
FINLAND	FI-1	LOVIISA-1	PWR	WER V-213	1500	510	488	FORTUMPH AEE	AEE	1971-5	1977-2	1977-5	86.7	87.1	-
	FI-2	LOVIISA-2	PWR	WER V-213	1500	510	488	FORTUMPH AEE	AEE	1972-8	1980-11	1981-1	88.7	89.4	-

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

TABLE 14. REACTORS IN OPERATION, 31 DEC. 2008 — continued

Country	Reactor		Type	Model	Capacity [MW]			Operator	NSSS Supplier	Construction Start	Grid Connection	Commercial Operation	EAF % 1998 to 2008	UCF % 1998 to 2008	Non-electrical Applies
	Code	Name			Thermal	Gross	Net								
FRANCE	FI -3	OLKILUOTO-1	BWR	BWR 2500	2500	890	860	TVO	ASEASTAL	1974-2	1978-9	1979-10	92.4	92.7	-
	FI -4	OLKILUOTO-2	BWR	BWR 2500	2500	890	860	TVO	ASEASTAL	1975-8	1980-2	1982-7	93.8	94.3	-
	FR -54	BELLEVILLE-1	PWR	P4 REP 1300	3817	1363	1310	EDF	FRAM	1980-5	1987-10	1988-6	75.2	76.5	-
	FR -55	BELLEVILLE-2	PWR	P4 REP 1300	3817	1363	1310	EDF	FRAM	1980-8	1988-7	1989-1	78.3	79.9	-
	FR -32	BLAYAIS-1	PWR	CP1	2785	951	910	EDF	FRAM	1977-1	1981-6	1981-12	77.1	79.5	-
	FR -33	BLAYAIS-2	PWR	CP1	2785	951	910	EDF	FRAM	1977-1	1982-7	1983-2	80.5	82.5	-
	FR -34	BLAYAIS-3	PWR	CP1	2785	951	910	EDF	FRAM	1978-4	1983-8	1983-11	80.6	82.6	-
	FR -35	BLAYAIS-4	PWR	CP1	2785	951	910	EDF	FRAM	1978-4	1983-5	1983-10	80.1	82.3	-
	FR -13	BUGEY-2	PWR	CP0	2785	945	910	EDF	FRAM	1972-11	1978-5	1979-3	72.3	74.2	-
	FR -14	BUGEY-3	PWR	CP0	2785	945	910	EDF	FRAM	1973-9	1978-9	1979-3	73.4	75.4	-
	FR -15	BUGEY-4	PWR	CP0	2785	917	880	EDF	FRAM	1974-6	1979-3	1979-7	72.9	75.1	-
	FR -16	BUGEY-5	PWR	CP0	2785	917	880	EDF	FRAM	1974-7	1979-7	1980-1	75.6	77.9	-
	FR -50	CATTENOM-1	PWR	P4 REP 1300	3817	1362	1300	EDF	FRAM	1979-10	1986-11	1987-4	72.9	74.2	-
	FR -53	CATTENOM-2	PWR	P4 REP 1300	3817	1362	1300	EDF	FRAM	1980-7	1987-9	1988-2	77.8	79.8	-
	FR -60	CATTENOM-3	PWR	P4 REP 1300	3817	1362	1300	EDF	FRAM	1982-6	1990-7	1991-2	80.6	82.7	-
	FR -65	CATTENOM-4	PWR	P4 REP 1300	3817	1362	1300	EDF	FRAM	1983-9	1991-5	1992-1	83.8	85.5	-
	FR -40	CHINON-B-1	PWR	CP2	2785	954	905	EDF	FRAM	1977-3	1982-11	1984-2	78.6	79.8	-
	FR -41	CHINON-B-2	PWR	CP2	2785	954	905	EDF	FRAM	1977-3	1983-11	1984-8	78.2	79.4	-
	FR -56	CHINON-B-3	PWR	CP2	2785	954	905	EDF	FRAM	1980-10	1986-10	1987-3	79.3	81.1	-
	FR -57	CHINON-B-4	PWR	CP2	2785	954	905	EDF	FRAM	1981-2	1987-11	1988-4	80.4	82.0	-
FR -62	CHOOZ-B-1	PWR	N4 REP 1450	4270	1560	1500	EDF	FRAM	1984-1	1996-8	2000-5	81.7	83.8	-	
FR -70	CHOOZ-B-2	PWR	N4 REP 1450	4270	1560	1500	EDF	FRAM	1985-12	1997-4	2000-9	82.3	85.2	-	
FR -72	CVAUX-1	PWR	N4 REP 1450	4270	1561	1495	EDF	FRAM	1988-10	1997-12	2002-1	78.6	79.9	-	
FR -73	CVAUX-2	PWR	N4 REP 1450	4270	1561	1495	EDF	FRAM	1991-4	1999-12	2002-4	83.0	84.6	-	
FR -42	CRUAS-1	PWR	CP2	2785	956	915	EDF	FRAM	1978-8	1983-4	1984-4	79.3	81.0	-	
FR -43	CRUAS-2	PWR	CP2	2785	956	915	EDF	FRAM	1978-8	1984-9	1985-4	78.5	80.7	-	
FR -44	CRUAS-3	PWR	CP2	2785	956	915	EDF	FRAM	1979-4	1984-9	1984-5	79.5	82.0	-	
FR -45	CRUAS-4	PWR	CP2	2785	956	915	EDF	FRAM	1979-10	1984-10	1985-2	78.0	80.1	-	
FR -22	DAMPIERRE-1	PWR	CP1	2785	937	890	EDF	FRAM	1975-2	1980-3	1980-9	76.4	77.4	-	

TABLE 14. REACTORS IN OPERATION, 31 DEC. 2008 — continued

Country	Reactor		Type	Model	Capacity [MW]			Operator	NSSS Supplier	Construction Start	Grid Connection	Commercial Operation	EAF % 1998 to 2008	UCF % 1998 to 2008	Non-electrical Applies
	Code	Name			Thermal	Gross	Net								
	FR -29	DAMPIERRE-2	PWR	CP1	2785	937	890	EDF	FRAM	1975-4	1980-12	1981-2	77.0	78.7	-
	FR -30	DAMPIERRE-3	PWR	CP1	2785	937	890	EDF	FRAM	1975-9	1981-1	1981-5	77.7	79.3	-
	FR -31	DAMPIERRE-4	PWR	CP1	2785	937	890	EDF	FRAM	1975-12	1981-8	1981-11	76.3	78.1	-
	FR -11	FESSENHEIM-1	PWR	CP0	2660	920	880	EDF	FRAM	1971-9	1977-4	1978-1	70.7	72.0	-
	FR -12	FESSENHEIM-2	PWR	CP0	2660	920	880	EDF	FRAM	1972-2	1977-10	1978-4	74.5	75.4	-
	FR -46	FLAMANVILLE-1	PWR	P4 REP 1300	3817	1382	1330	EDF	FRAM	1979-12	1985-12	1986-12	73.5	76.0	-
	FR -47	FLAMANVILLE-2	PWR	P4 REP 1300	3817	1382	1330	EDF	FRAM	1980-5	1986-7	1987-3	76.2	77.4	-
	FR -61	GOLFEGH-1	PWR	P4 REP 1300	3817	1363	1310	EDF	FRAM	1982-11	1990-6	1991-2	82.4	85.2	-
	FR -68	GOLFEGH-2	PWR	P4 REP 1300	3817	1363	1310	EDF	FRAM	1984-10	1993-6	1994-3	83.4	85.2	-
	FR -20	GRAVELINES-1	PWR	CP1	2785	951	910	EDF	FRAM	1975-2	1980-3	1980-11	76.4	78.1	-
	FR -21	GRAVELINES-2	PWR	CP1	2785	951	910	EDF	FRAM	1975-3	1980-8	1980-12	79.3	80.7	-
	FR -27	GRAVELINES-3	PWR	CP1	2785	951	910	EDF	FRAM	1975-12	1980-12	1981-6	79.4	80.8	-
	FR -28	GRAVELINES-4	PWR	CP1	2785	951	910	EDF	FRAM	1976-4	1981-6	1981-10	79.0	80.5	-
	FR -51	GRAVELINES-5	PWR	CP1	2785	951	910	EDF	FRAM	1979-10	1984-8	1985-1	80.5	82.2	-
	FR -52	GRAVELINES-6	PWR	CP1	2785	951	910	EDF	FRAM	1979-10	1985-8	1985-10	79.9	81.3	-
	FR -58	NOGENT-1	PWR	P4 REP 1300	3817	1363	1310	EDF	FRAM	1981-5	1987-10	1988-2	76.8	78.4	-
	FR -59	NOGENT-2	PWR	P4 REP 1300	3817	1363	1310	EDF	FRAM	1982-1	1988-12	1989-5	80.8	82.9	-
	FR -36	PAJUEL-1	PWR	P4 REP 1300	3817	1382	1330	EDF	FRAM	1977-8	1984-6	1985-12	76.4	78.1	-
	FR -37	PAJUEL-2	PWR	P4 REP 1300	3817	1382	1330	EDF	FRAM	1978-1	1984-9	1985-12	73.7	75.8	-
	FR -38	PAJUEL-3	PWR	P4 REP 1300	3817	1382	1330	EDF	FRAM	1979-2	1985-9	1986-2	74.2	75.8	-
	FR -39	PAJUEL-4	PWR	P4 REP 1300	3817	1382	1330	EDF	FRAM	1980-2	1986-4	1986-6	75.9	77.7	-
	FR -63	PENLY-1	PWR	P4 REP 1300	3817	1382	1330	EDF	FRAM	1982-9	1990-5	1990-12	81.9	83.4	-
	FR -64	PENLY-2	PWR	P4 REP 1300	3817	1382	1330	EDF	FRAM	1984-8	1992-2	1992-2	82.8	84.0	-
	FR -10	PHENIX	FBR	PH-250	350	140	130	CEA/EDF	CNCLINEY	1968-11	1973-12	1974-7	47.6	47.9	-
	FR -48	ST. ALBAN-1	PWR	P4 REP 1300	3817	1381	1335	EDF	FRAM	1979-1	1985-8	1986-5	73.8	75.4	-
	FR -49	ST. ALBAN-2	PWR	P4 REP 1300	3817	1381	1335	EDF	FRAM	1979-7	1986-7	1987-3	73.7	76.2	-
	FR -17	ST. LAURENT-B-1	PWR	CP2	2785	956	915	EDF	FRAM	1976-5	1981-1	1983-8	76.3	77.9	-
	FR -23	ST. LAURENT-B-2	PWR	CP2	2785	956	915	EDF	FRAM	1976-7	1981-6	1983-8	76.7	78.5	-
	FR -18	TRICASTIN-1	PWR	CP1	2785	955	915	EDF	FRAM	1974-11	1980-5	1980-12	77.3	80.1	-
	FR -19	TRICASTIN-2	PWR	CP1	2785	955	915	EDF	FRAM	1974-12	1980-8	1980-12	76.5	79.0	-

TABLE 14. REACTORS IN OPERATION, 31 DEC. 2008 — continued

Country	Reactor		Type	Model	Capacity [MW]		Operator	NSSS Supplier	Construction Start	Grid Connection	Commercial Operation	EAF % 1998 to 2008	UCF % 1998 to 2008	Non-electrical Applies
	Code	Name			Thermal	Gross								
GERMANY	FR -25	TRICASTIN-3	PWR	CP1	2785	955	915	EDF	1975-4	1981-2	1981-5	79.0	81.3	-
	FR -26	TRICASTIN-4	PWR	CP1	2785	955	915	EDF	1975-5	1981-6	1981-11	79.2	81.9	-
	DE -12	BIBLIS-A (KWB A)	PWR	PWR	3517	1225	1167	RWE	1970-1	1974-8	1975-2	69.5	70.0	-
	DE -18	BIBLIS-B (KWB B)	PWR	PWR	3733	1300	1240	RWE	1972-2	1976-4	1977-1	74.0	74.4	-
	DE -32	BROKDORF (KBR)	PWR	PWR	3900	1480	1410	E.ON	1976-1	1986-10	1986-12	90.3	90.6	-
	DE -13	BRUNSBUETTEL (KKB)	BWR	BWR '69	2292	806	771	KKB	1970-4	1976-7	1977-2	59.0	60.0	-
	DE -33	EMSLAND (KKE)	PWR	Konvoi	3850	1400	1329	KLE	1982-8	1988-4	1988-6	93.4	93.4	-
	DE -23	GRAFENRHEINFELD (KKG)	PWR	PWR	3785	1345	1275	E.ON	1975-1	1981-12	1982-6	88.1	88.1	-
	DE -27	GROHNDE (KWG)	PWR	PWR	3900	1430	1360	KWG	1976-6	1984-9	1985-2	92.4	92.5	-
	DE -26	GUNDREMMINGEN-B (GUN-B)	BWR	BWR 72	3840	1344	1284	KGK	1976-7	1984-3	1984-7	88.3	88.6	-
	DE -28	GUNDREMMINGEN-C (GUN-C)	BWR	BWR 72	3840	1344	1288	KGK	1976-7	1984-11	1985-1	86.8	87.1	-
	DE -16	ISAR-1 (KKI 1)	BWR	BWR '69	2575	912	878	E.ON	1972-5	1977-12	1979-3	82.8	83.2	-
	DE -31	ISAR-2 (KKI 2)	PWR	Konvoi	3950	1475	1400	E.ON	1982-9	1988-1	1988-4	91.8	92.1	-
	DE -20	KRUEMMEL (KKK)	BWR	BWR 69	3690	1402	1346	KKK	1974-4	1983-9	1984-3	75.3	75.7	-
	DE -15	NECKARWESTHEIM-1 (GKN 1)	PWR	PWR	2497	840	785	EnKK	1972-2	1976-6	1976-12	82.9	83.0	-
	DE -44	NECKARWESTHEIM-2 (GKN 2)	PWR	Konvoi	3850	1400	1310	EnKK	1982-11	1989-1	1989-4	93.4	93.5	-
	DE -14	PHILIPPSBURG-1 (KKP 1)	BWR	BWR '69	2575	926	890	EnKK	1970-10	1979-5	1980-3	79.5	79.7	-
	DE -24	PHILIPPSBURG-2 (KKP 2)	PWR	PWR	3950	1458	1392	EnKK	1977-7	1984-12	1985-4	89.2	90.4	-
	DE -17	UNTERMESER (KKU)	PWR	PWR	3900	1410	1345	E.ON	1972-7	1978-9	1979-9	82.0	82.6	-
	HUNGARY	HU -1	PAKS-1	PWR	VVER V-213	1485	500	470	PAKS Zrt	1974-8	1982-12	1983-8	85.6	85.6
HU -2		PAKS-2	PWR	VVER V-213	1485	500	473	PAKS Zrt	1974-8	1984-9	1984-11	78.9	78.9	DH
HU -3		PAKS-3	PWR	VVER V-213	1375	470	443	PAKS Zrt	1979-10	1986-9	1986-12	86.5	86.9	DH
HU -4		PAKS-4	PWR	VVER V-213	1485	500	473	PAKS Zrt	1979-10	1987-8	1987-11	87.6	87.8	DH
INDIA	IN -13	KAIGA-1	PHWR	Horizontal Pre	801	220	202	NPCIL	1989-9	2000-10	2000-11	72.2	90.5	-
	IN -14	KAIGA-2	PHWR	Horizontal Pre	801	220	202	NPCIL	1989-12	1999-12	2000-3	72.6	89.3	-
	IN -15	KAIGA-3	PHWR	Horizontal Pre	800	220	202	NPCIL	2002-3	2007-4	2007-5	23.1	51.1	-
	IN -9	KAKRAPAR-1	PHWR	Horizontal Pre	801	220	202	NPCIL	1984-12	1992-11	1993-5	67.4	76.4	-

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

TABLE 14. REACTORS IN OPERATION, 31 DEC. 2008 — continued

Country	Reactor		Type	Model	Capacity [MW]		Operator	NSSS Supplier	Construction Start	Grid Connection	Commercial Operation	EAF % 1998 to 2008	UCF % 1998 to 2008	Non-electrical Applies
	Code	Name			Thermal	Gross								
	IN-10	KAKRAPAR-2	PHWR	Horizontal Pre	801	220	202	NPCIL	1985-4	1995-3	1995-9	78.0	88.4	-
	IN-5	MADRAS-1	PHWR	Horizontal Pre	801	220	205	NPCIL	1971-1	1983-7	1984-1	53.7	59.2	DS
	IN-6	MADRAS-2	PHWR	Horizontal Pre	801	220	202	NPCIL	1972-10	1985-9	1986-3	59.2	66.3	DS
	IN-7	NARORA-1	PHWR	Horizontal Pre	801	220	202	NPCIL	1976-12	1989-7	1991-1	55.0	61.8	-
	IN-8	NARORA-2	PHWR	Horizontal Pre	801	220	202	NPCIL	1977-11	1992-1	1992-7	63.0	71.2	-
	IN-3	RAJASTHAN-1	PHWR	Horizontal Pre	693	100	90	AEC/DAE	1965-8	1972-11	1973-12	24.2	25.2	PH
	IN-4	RAJASTHAN-2	PHWR	Horizontal Pre	693	200	187	AEC/DAE	1968-4	1980-11	1981-4	54.4	57.8	PH
	IN-11	RAJASTHAN-3	PHWR	Horizontal Pre	801	220	202	NPCIL	1990-2	2000-3	2000-6	73.0	88.4	PH
	IN-12	RAJASTHAN-4	PHWR	Horizontal Pre	801	220	202	NPCIL	1990-10	2000-11	2000-12	73.7	91.2	PH
	IN-1	TARAPUR-1	BWR	BWR-1, Mark 2	530	160	150	NPCIL	1964-10	1969-4	1969-10	68.7	69.4	-
	IN-2	TARAPUR-2	BWR	BWR-1, Mark 2	530	160	150	NPCIL	1964-10	1969-5	1969-10	67.8	68.5	-
	IN-23	TARAPUR-3	PHWR	Horizontal Pre	1730	540	490	NPCIL	2000-5	2006-6	2006-8	55.7	87.4	-
	IN-24	TARAPUR-4	PHWR	Horizontal Pre	1730	540	490	NPCIL	2000-3	2005-6	2005-9	49.7	79.1	-
JAPAN	JP-5	FUKUSHIMA-DAIICHI-1	BWR	BWR-3	1380	460	439	TEPCO	1967-7	1970-11	1971-3	53.6	53.6	-
	JP-9	FUKUSHIMA-DAIICHI-2	BWR	BWR-4	2381	784	760	TEPCO	1969-6	1973-12	1974-7	61.0	61.0	-
	JP-10	FUKUSHIMA-DAIICHI-3	BWR	BWR-4	2381	784	760	TEPCO	1970-12	1974-10	1976-3	65.7	65.8	-
	JP-16	FUKUSHIMA-DAIICHI-4	BWR	BWR-4	2381	784	760	TEPCO	1973-2	1978-2	1978-10	70.0	70.1	-
	JP-17	FUKUSHIMA-DAIICHI-5	BWR	BWR-4	2381	784	760	TEPCO	1972-5	1977-9	1978-4	70.9	70.9	-
	JP-18	FUKUSHIMA-DAIICHI-6	BWR	BWR-5	3293	1100	1067	TEPCO	1973-10	1979-5	1979-10	70.8	70.9	-
	JP-25	FUKUSHIMA-DAINI-1	BWR	BWR-5	3293	1100	1067	TEPCO	1976-3	1981-7	1982-4	76.1	76.2	-
	JP-26	FUKUSHIMA-DAINI-2	BWR	BWR-5	3293	1100	1067	TEPCO	1979-5	1983-6	1984-2	73.7	73.7	-
	JP-35	FUKUSHIMA-DAINI-3	BWR	BWR-5	3293	1100	1067	TEPCO	1981-3	1984-12	1985-6	65.6	65.6	-
	JP-38	FUKUSHIMA-DAINI-4	BWR	BWR-5	3293	1100	1067	TEPCO	1981-5	1986-12	1987-8	72.4	72.4	-
	JP-12	GENKAI-1	PWR	M (2-loop)	1650	559	529	KYUSHU	1971-9	1975-2	1975-10	73.1	73.1	-
	JP-27	GENKAI-2	PWR	M (2-loop)	1650	559	529	KYUSHU	1977-2	1980-6	1981-3	80.6	80.6	-
	JP-45	GENKAI-3	PWR	M (4-loop)	3423	1180	1127	KYUSHU	1988-6	1993-6	1994-3	84.8	84.8	DS
	JP-46	GENKAI-4	PWR	M (4-loop)	3423	1180	1127	KYUSHU	1992-7	1996-11	1997-7	85.8	85.8	DS
	JP-11	HAMAOKA-1	BWR	BWR4	1593	540	515	CHUBU	1971-6	1974-8	1976-3	48.3	48.4	-
	JP-24	HAMAOKA-2	BWR	BWR4	2436	840	806	CHUBU	1974-6	1978-5	1978-11	59.7	59.7	-

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. 2008 — continued

Country	Reactor		Type	Model	Capacity [MW]		Operator	NSSS Supplier	Construction Start	Grid Connection	Commercial Operation	EAF % 1998 to 2008	UCF % 1998 to 2008	Non-electrical Applies	
	Code	Name			Thermal	Gross									Net
	JP-36	HAMAOKA-3	BWR	BWR-5	3293	1100	1056	CHUBU	TOSHIBA	1983-4	1987-1	1987-8	78.0	78.1	-
	JP-49	HAMAOKA-4	BWR	BWR-5	3293	1137	1092	CHUBU	TOSHIBA	1989-10	1993-1	1993-9	81.9	82.0	-
	JP-60	HAMAOKA-5	BWR	ABWR	3926	1267	1212	CHUBU	TOSHIBA	2000-7	2004-4	2005-1	64.9	65.0	-
	JP-58	HIGASHI DORI 1 (TOHOKU)	BWR	BWR-5	3293	1100	1067	TOHOKU	TOSHIBA	2000-11	2005-3	2005-12	77.7	77.8	-
	JP-23	IKATA-1	PWR	M (2-loop)	1650	566	538	SHIKOKU	MHI	1973-9	1977-2	1977-9	78.2	78.3	DS
	JP-32	IKATA-2	PWR	M (2-loop)	1650	568	538	SHIKOKU	MHI	1978-8	1981-8	1982-3	82.4	82.5	DS
	JP-47	IKATA-3	PWR	M (3-loop)	2660	890	846	SHIKOKU	MHI	1990-10	1994-3	1994-12	85.3	85.3	DS
	JP-33	KASHIWAZAKI KARIWA-1	BWR	BWR-5	3293	1100	1067	TEPCO	TOSHIBA	1980-6	1985-2	1985-9	68.2	69.5	-
	JP-39	KASHIWAZAKI KARIWA-2	BWR	BWR-5	3293	1100	1067	TEPCO	TOSHIBA	1985-11	1990-2	1990-9	69.0	69.0	-
	JP-52	KASHIWAZAKI KARIWA-3	BWR	BWR-5	3293	1100	1067	TEPCO	TOSHIBA	1989-3	1992-12	1993-8	68.1	69.2	-
	JP-53	KASHIWAZAKI KARIWA-4	BWR	BWR-5	3293	1100	1067	TEPCO	HITACHI	1990-3	1993-12	1994-8	66.8	70.1	-
	JP-40	KASHIWAZAKI KARIWA-5	BWR	BWR-5	3293	1100	1067	TEPCO	HITACHI	1985-6	1989-9	1990-4	71.3	74.1	-
	JP-55	KASHIWAZAKI KARIWA-6	BWR	ABWR	3926	1356	1315	TEPCO	TOSHIBA	1992-11	1996-11	1996-11	72.7	76.1	-
	JP-56	KASHIWAZAKI KARIWA-7	BWR	ABWR	3926	1356	1315	TEPCO	HITACHI	1993-7	1996-12	1997-7	68.9	72.1	-
	JP-4	MIHAMA-1	PWR	W (2-loop)	1031	340	320	KEPCO	WH	1967-2	1970-8	1970-11	51.1	51.3	-
	JP-6	MIHAMA-2	PWR	M (2-loop)	1456	500	470	KEPCO	MHI	1968-5	1972-4	1972-7	61.4	61.4	-
	JP-14	MIHAMA-3	PWR	M (3-loop)	2440	826	780	KEPCO	MHI	1972-8	1976-2	1976-12	69.6	69.6	-
	JP-15	OHI-1	PWR	W (4-loop)	3423	1175	1120	KEPCO	WH	1972-10	1977-12	1979-3	66.6	66.7	DS
	JP-19	OHI-2	PWR	W (4-loop)	3423	1175	1120	KEPCO	WH	1972-12	1978-10	1979-12	72.9	73.1	DS
	JP-50	OHI-3	PWR	M (4-loop)	3423	1180	1127	KEPCO	MHI	1987-10	1991-6	1991-12	80.8	80.8	-
	JP-51	OHI-4	PWR	M (4-loop)	3423	1180	1127	KEPCO	MHI	1988-6	1992-2	1992-6	84.5	84.6	-
	JP-22	ONAGAWA-1	BWR	BWR-5	1593	524	498	TOHOKU	TOSHIBA	1980-7	1983-11	1984-6	66.9	68.8	-
	JP-54	ONAGAWA-2	BWR	BWR-5	2436	825	796	TOHOKU	TOSHIBA	1981-4	1984-12	1985-7	74.9	78.0	-
	JP-57	ONAGAWA-3	BWR	BWR-5	2436	825	796	TOHOKU	TOSHIBA	1988-1	2001-5	2002-1	68.2	70.0	-
	JP-28	SENDAI-1	PWR	M (3-loop)	2660	890	846	KYUSHU	MHI	1979-12	1983-9	1984-7	81.8	81.8	-
	JP-37	SENDAI-2	PWR	M (3-loop)	2660	890	846	KYUSHU	MHI	1981-10	1985-4	1985-11	83.6	83.6	-
	JP-48	SHIKA-1	BWR	BWR 5	1593	540	505	HOKURIKU	HITACHI	1989-7	1993-1	1993-7	70.9	70.9	-
	JP-59	SHIKA-2	BWR	ABWR	3926	1206	1108	HOKURIKU	HITACHI	2001-8	2005-7	2006-3	29.8	29.8	-
	JP-7	SHIMANE-1	BWR	BWR-3	1380	460	439	CHUGOKU	HITACHI	1970-7	1973-12	1974-3	73.0	73.2	-
	JP-41	SHIMANE-2	BWR	BWR-5	2436	820	789	CHUGOKU	HITACHI	1985-2	1988-7	1989-2	82.0	82.0	-

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

TABLE 14. REACTORS IN OPERATION, 31 DEC. 2008 — continued

Country	Reactor		Type	Model	Capacity [MW]			NSSS Supplier	Construction Start	Grid Connection	Commercial Operation	EAF % 1998 to 2008	UCF % 1998 to 2008	Non-electrical Applies
	Code	Name			Thermal	Gross	Net							
KOREA REP.	JP-8	TAKAHAMA-1	PWR	M (3-loop)	2440	826	780	KEPCO	1970-4	1974-3	1974-11	68.1	68.2	-
	JP-13	TAKAHAMA-2	PWR	M (3-loop)	2440	826	780	KEPCO	1971-3	1975-1	1975-11	67.5	67.6	-
	JP-29	TAKAHAMA-3	PWR	M (3-loop)	2660	870	830	KEPCO	1980-12	1984-5	1985-1	81.9	82.0	DS
	JP-30	TAKAHAMA-4	PWR	M (3-loop)	2660	870	830	KEPCO	1981-3	1984-11	1985-6	83.4	83.4	DS
	JP-21	TOKAI-2	BWR	BWR-5	3293	1100	1060	JAPCO	1973-10	1978-3	1978-11	73.7	73.8	-
	JP-43	TOMARI-1	PWR	M (2-loop)	1650	579	550	HEPCO	1985-4	1988-12	1989-6	84.1	84.1	-
	JP-44	TOMARI-2	PWR	M (2-loop)	1650	579	550	HEPCO	1985-6	1990-8	1991-4	83.2	83.2	-
	JP-3	TSURUGA-1	BWR	BWR-2	1070	357	340	JAPCO	1966-11	1969-11	1970-3	68.2	68.4	-
	JP-34	TSURUGA-2	PWR	M (4-loop)	3411	1160	1110	JAPCO	1982-11	1986-6	1987-2	77.6	77.7	-
	KR-1	KORI-1	PWR	WH & #9651;60	1729	603	576	KHNP	1972-8	1977-6	1978-4	78.2	79.1	-
	KR-2	KORI-2	PWR	WH F	1882	675	637	KHNP	1977-12	1983-4	1983-7	86.0	86.1	-
	KR-5	KORI-3	PWR	WH F	2785	1004	979	KHNP	1979-10	1985-1	1985-9	85.6	85.7	-
	KR-6	KORI-4	PWR	WH F	2785	1006	977	KHNP	1980-4	1985-11	1986-4	87.4	87.5	-
	KR-9	ULCHIN-1	PWR	France CPI	2785	985	945	KHNP	1983-1	1988-4	1988-9	86.2	86.5	-
	KR-10	ULCHIN-2	PWR	France CPI	2775	984	942	KHNP	1983-7	1989-4	1989-9	86.8	87.0	-
	KR-13	ULCHIN-3	PWR	OPR-1000	2825	1047	994	KHNP	1983-7	1988-1	1988-8	90.6	90.8	-
	KR-14	ULCHIN-4	PWR	OPR-1000	2825	1045	998	KHNP	1983-11	1988-12	1999-12	90.8	90.9	-
	KR-19	ULCHIN-5	PWR	OPR-1000	2815	1048	1001	KHNP	1999-10	2003-12	2004-7	92.2	92.2	-
	KR-20	ULCHIN-6	PWR	OPR-1000	2825	1048	1001	KHNP	2000-9	2005-1	2005-4	91.6	91.8	-
	KR-3	WOLSONG-1	PHWR	CANDU 6	2081	622	597	KHNP	1977-10	1982-12	1983-4	84.2	84.6	-
	KR-4	WOLSONG-2	PHWR	CANDU 6	2061	730	710	KHNP	1982-9	1987-4	1997-7	91.0	91.0	-
	KR-15	WOLSONG-3	PHWR	CANDU 6	2061	729	707	KHNP	1994-3	1998-3	1998-7	92.4	92.4	-
	KR-16	WOLSONG-4	PHWR	CANDU 6	2061	730	708	KHNP	1999-5	1999-5	1999-10	93.7	93.7	-
	KR-7	YONGGWWANG-1	PWR	WH F	2787	985	953	KHNP	1981-6	1986-3	1986-8	87.4	87.4	-
	KR-8	YONGGWWANG-2	PWR	WH F	2787	978	947	KHNP	1981-12	1986-11	1987-6	85.4	85.5	-
	KR-11	YONGGWWANG-3	PWR	OPR-1000	2825	1039	997	KHNP	1989-12	1994-10	1995-3	89.3	89.3	-
	KR-12	YONGGWWANG-4	PWR	OPR-1000	2825	1039	994	KHNP	1990-5	1995-7	1996-1	89.4	89.4	-
	KR-17	YONGGWWANG-5	PWR	OPR-1000	2825	1046	988	KHNP	1997-6	2001-12	2002-5	85.9	86.0	-
	KR-18	YONGGWWANG-6	PWR	OPR-1000	2825	1050	996	KHNP	1997-11	2002-9	2002-12	87.1	87.3	-

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

TABLE 14. REACTORS IN OPERATION, 31 DEC. 2008 — continued

Country	Reactor		Type	Model	Capacity [MW]		Operator	NSSS Supplier	Construction Start	Grid Connection	Commercial Operation	EAF % 1998 to 2008	UCF % 1998 to 2008	Non-electrical Applics
	Code	Name			Thermal	Gross								
LITHUANIA	LT-47	IGNALINA-2	LWGR	RBMK-1500	4800	1300	1185	INPP	1978-1	1987-8	1987-8	64.6	74.2	-
MEXICO	MX-1	LAGUNA VERDE-1	BWR	BWR-5	2027	682	650	CFE	1976-10	1989-4	1990-7	81.2	81.9	-
	MX-2	LAGUNA VERDE-2	BWR	BWR-5	2027	682	650	CFE	1977-6	1994-11	1995-4	84.6	85.3	-
NETHERLANDS	NL-2	BORSSELE	PWR	2 loops PWR	1366	515	482	EPZ	1969-7	1973-7	1973-10	84.5	84.9	-
PAKISTAN	PK-2	CHASNUPP 1	PWR	CNP-300	999	325	300	PAEC	1993-8	2000-6	2000-9	69.3	70.1	-
	PK-1	KANUPP	PHWR	CANDU-137 MW	433	137	125	PAEC	1966-8	1971-10	1972-12	29.1	30.2	DS
ROMANIA	RO-1	CERNAVODA-1	PHWR	CANDU 6	2180	706	650	SNN	1982-7	1986-7	1996-12	87.2	88.4	DH
	RO-2	CERNAVODA-2	PHWR	CANDU 6	2180	706	650	SNN	1983-7	2007-8	2007-10	96.3	97.8	DH
RUSSIA	RU-96	BALAKOVO-1	PWR	VVER V-320	3000	1000	950	EA	1980-12	1985-12	1986-5	66.8	69.5	DH, PH
	RU-97	BALAKOVO-2	PWR	VVER V-320	3000	1000	950	EA	1981-8	1987-10	1988-1	65.3	68.9	DH, PH
	RU-98	BALAKOVO-3	PWR	VVER V-320	3000	1000	950	EA	1982-11	1988-12	1989-4	70.5	75.1	DH, PH
	RU-99	BALAKOVO-4	PWR	VVER V-320	3200	1000	950	EA	1984-4	1993-4	1993-12	74.9	80.6	DH, PH
	RU-21	BELOARSKY-3 (BN-600)	FBR	BN-600	1470	600	560	EA	1969-1	1980-4	1981-11	73.8	74.5	DH, PH
	RU-141	BILIBINO-1	LWGR	EGP-6	62	12	11	EA	1970-1	1974-1	1974-4	68.9	80.2	DH
	RU-142	BILIBINO-2	LWGR	EGP-6	62	12	11	EA	1970-1	1974-12	1975-2	69.3	81.4	DH
	RU-143	BILIBINO-3	LWGR	EGP-6	62	12	11	EA	1970-1	1975-12	1976-2	68.7	81.0	DH
	RU-144	BILIBINO-4	LWGR	EGP-6	62	12	11	EA	1970-1	1976-12	1977-1	66.9	78.8	DH
	RU-30	KALININ-1	PWR	VVER V-338	3000	1000	950	EA	1977-2	1984-5	1985-6	71.8	72.8	DH, PH
	RU-31	KALININ-2	PWR	VVER V-338	3000	1000	950	EA	1982-2	1986-12	1987-3	71.8	74.9	DH, PH
	RU-36	KALININ-3	PWR	VVER V-338	3200	1000	950	EA	1985-10	2004-12	2005-11	83.0	83.3	PH
	RU-12	KOLA-1	PWR	VVER V-230	1375	440	411	EA	1970-5	1973-6	1973-12	69.8	76.7	DH, PH
	RU-13	KOLA-2	PWR	VVER V-230	1375	440	411	EA	1970-5	1974-12	1975-2	70.6	76.7	DH, PH
	RU-32	KOLA-3	PWR	VVER V-213	1375	440	411	EA	1977-4	1981-3	1982-12	74.1	82.8	DH, PH
	RU-33	KOLA-4	PWR	VVER V-213	1375	440	411	EA	1976-8	1984-10	1984-12	73.2	82.0	DH, PH
	RU-17	KURSK-1	LWGR	RBMK-1000	3200	1000	925	EA	1972-6	1976-12	1977-10	59.6	61.7	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. 2008 — continued

Country	Reactor		Type	Model	Capacity [MW]		Operator	NSSS Supplier	Construction Start	Grid Connection	Commercial Operation	EAF % 1998 to 2008	UCF % 1998 to 2008	Non-electrical Applies
	Code	Name			Thermal	Gross								
	RU-22	KURSK-2	LWGR	RBMK-1000	3200	1000	925	EA	1973-1	1979-1	1979-8	62.1	64.7	DH, PH
	RU-38	KURSK-3	LWGR	RBMK-1000	3200	1000	925	EA	1978-4	1983-10	1984-3	70.3	71.5	DH, PH
	RU-39	KURSK-4	LWGR	RBMK-1000	3200	1000	925	EA	1981-5	1985-12	1986-2	76.7	77.0	DH, PH
	RU-15	LENINGRAD-1	LWGR	RBMK-1000	3200	1000	925	EA	1970-3	1973-12	1974-11	69.5	70.2	DH, PH
	RU-16	LENINGRAD-2	LWGR	RBMK-1000	3200	1000	925	EA	1970-6	1975-7	1976-2	69.7	70.6	DH, PH
	RU-34	LENINGRAD-3	LWGR	RBMK-1000	3200	1000	925	EA	1973-12	1979-12	1980-6	69.3	70.5	DH, PH
	RU-35	LENINGRAD-4	LWGR	RBMK-1000	3200	1000	925	EA	1975-2	1981-2	1981-8	72.5	73.8	DH, PH
	RU-9	NOVOVORONEZH-3	PWR	VVER V-179	1375	417	385	EA	1967-7	1971-12	1972-6	70.9	71.7	DH, PH
	RU-11	NOVOVORONEZH-4	PWR	VVER V-179	1375	417	385	EA	1967-7	1971-12	1973-3	77.5	78.9	DH, PH
	RU-20	NOVOVORONEZH-5	PWR	VVER V-187	3000	1000	950	EA	1974-3	1980-5	1981-2	62.9	63.8	DH, PH
RU-23	SMOLENSK-1	LWGR	RBMK-1000	3200	1000	925	EA	1975-10	1982-12	1983-9	72.0	74.5	DH, PH	
RU-24	SMOLENSK-2	LWGR	RBMK-1000	3200	1000	925	EA	1976-6	1985-5	1985-7	73.2	75.9	DH, PH	
RU-67	SMOLENSK-3	LWGR	RBMK-1000	3200	1000	925	EA	1984-5	1990-1	1990-10	76.2	80.8	DH, PH	
RU-59	VOLGODONSK-1	PWR	VVER V-320I	3200	1000	950	EA	1981-9	2001-3	2001-12	85.2	85.9	-	
SLOVAKIA	SK-13	BOHUNICE-3	PWR	VVER V-213	1430	462	429	SE,plc	1976-12	1984-8	1985-2	77.5	80.8	DH, PH
	SK-14	BOHUNICE-4	PWR	VVER V-213	1375	442	410	SE,plc	1976-12	1985-8	1985-12	79.0	82.2	DH, PH
	SK-6	MOCHOVCE-1	PWR	VVER V-213	1471	470	436	SE,plc	1983-10	1998-7	1998-10	82.0	84.8	-
	SK-7	MOCHOVCE-2	PWR	VVER V-213	1471	470	436	SE,plc	1983-10	1999-12	2000-4	82.9	84.8	-
SLOVENIA	SI-1	KRSKO	PWR	Westinghouse 2	1994	730	666	NEK	1975-3	1981-10	1983-1	83.5	84.9	-
SOUTH AFRICA	ZA-1	KOEBERG-1	PWR	CP1	2785	944	900	ESKOM	1976-7	1984-4	1984-7	71.3	76.1	-
	ZA-2	KOEBERG-2	PWR	CP1	2785	944	900	ESKOM	1976-7	1985-7	1985-11	69.7	76.9	-
SPAIN	ES-6	ALMARAZ-1	PWR	WE 3-loops	2729	977	944	CNAT	1973-7	1981-5	1983-9	85.4	86.4	-
	ES-7	ALMARAZ-2	PWR	WE 3-loops	2729	980	956	CNAT	1973-7	1983-10	1983-7	87.2	88.3	-
	ES-8	ASCO-1	PWR	WE 3-loops	2931	1033	995	ANAV	1974-5	1983-8	1984-12	85.4	85.9	-
	ES-9	ASCO-2	PWR	WE 3-loops	2910	1027	997	ANAV	1975-3	1985-10	1986-3	87.3	88.1	-
	ES-10	COFENTRES	BWR	BWR-6	3237	1092	1064	ID	1975-9	1984-10	1985-3	86.1	86.9	-

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. 2008 — continued

Country	Reactor		Type	Model	Capacity [MW]		Operator	NSSS Supplier	Construction Start	Grid Connection	Commercial Operation	EAF % 1998 to 2008	UCF % 1998 to 2008	Non-electrical Applies
	Code	Name			Thermal	Gross								
	ES-2	SANTA MARIA DE GARONA	BWR	BWR-3	1381	486	NUCLEONOR	GE	1986-5	1971-3	1971-5	77.6	78.3	-
	ES-11	TRILLO-1	PWR	PWR 3 loops	3010	1066	CNAT	KWU	1979-8	1988-5	1988-8	86.6	86.8	-
	ES-16	VANDELLOS-2	PWR	WE 3-loops	2941	1087	ANAV	WH	1980-12	1987-12	1988-3	82.3	83.1	-
SWEDEN	SE-9	FORSMARK-1	BWR	BWR 75	2928	1016	FKA	ABBATOM	1973-6	1980-6	1980-12	83.6	85.7	-
	SE-11	FORSMARK-2	BWR	BWR 75	2928	1028	FKA	ABBATOM	1975-1	1981-1	1981-7	84.2	86.1	-
	SE-14	FORSMARK-3	BWR	BWR 3000	3300	1212	FKA	ABBATOM	1979-1	1985-3	1985-8	86.9	89.2	-
	SE-2	OSKARSHAMN-1	BWR	ABB BWR	1375	487	OKG	ABBATOM	1966-8	1971-8	1972-2	63.0	63.3	-
	SE-3	OSKARSHAMN-2	BWR	ABB BWR	1800	623	OKG	ABBATOM	1969-9	1974-10	1975-1	79.2	79.9	-
	SE-12	OSKARSHAMN-3	BWR	BWR 75	3300	1197	OKG	ABBATOM	1980-5	1985-3	1985-8	86.8	87.5	-
	SE-4	RINGHALS-1	BWR		2540	887	RAB	ABBATOM	1969-2	1974-10	1976-1	72.5	73.4	-
	SE-5	RINGHALS-2	PWR		2660	917	RAB	WH	1970-10	1974-8	1975-5	72.1	73.5	-
	SE-7	RINGHALS-3	PWR		3160	1037	RAB	WH	1972-9	1980-9	1981-9	77.4	79.0	-
	SE-10	RINGHALS-4	PWR		2775	979	RAB	WH	1973-11	1982-6	1983-11	85.3	87.2	-
SWITZERLAND	CH-1	BEZNAU-1	PWR	WH - 2 loops	1130	380	NOK	WH	1965-9	1969-7	1969-9	84.2	84.5	DH
	CH-3	BEZNAU-2	PWR	WH - 2 loops	1130	380	NOK	WH	1968-1	1971-10	1971-12	87.2	87.3	DH
	CH-4	GOESGEN	PWR	PWR 3 Loop	2900	1020	KKG	KWU	1973-12	1979-2	1979-11	88.4	89.3	PH
	CH-5	LEIBSTADT	BWR	BWR 6	3600	1220	KKL	GETSCO	1974-1	1984-5	1984-12	85.2	87.0	-
	CH-2	MUEHLEBERG	BWR	BWR 4	1097	390	BKW	GETSCO	1967-3	1971-7	1972-11	86.4	87.6	-
	UK	GB-18A	DUNGENESS-B1	GCR	AGR	1500	615	BE	APC	1965-10	1983-4	1985-4	44.2	46.0
	GB-18B	DUNGENESS-B2	GCR	AGR	1500	615	BE	APC	1965-10	1985-12	1989-4	50.5	50.8	-
	GB-19A	HARTLEPOOL-A1	GCR	AGR	1500	655	BE	NPC	1968-10	1983-8	1989-4	68.0	68.1	-
	GB-19B	HARTLEPOOL-A2	GCR	AGR	1500	655	BE	NPC	1968-10	1984-10	1989-4	71.5	71.7	-
	GB-20A	HEYSHAM-A1	GCR	AGR	1500	625	BE	NPC	1970-12	1983-7	1989-4	70.5	70.8	-
	GB-20B	HEYSHAM-A2	GCR	AGR	1500	625	BE	NPC	1970-12	1984-10	1989-4	68.7	69.3	-
	GB-22A	HEYSHAM-B1	GCR	AGR	1550	680	BE	NPC	1980-8	1988-7	1989-4	76.1	76.8	-
	GB-22B	HEYSHAM-B2	GCR	AGR	1550	680	BE	NPC	1980-8	1988-11	1989-4	76.1	77.2	-
	GB-16A	HINKLEY POINT-B1	GCR	AGR	1494	655	BE	TNPG	1967-9	1976-10	1978-10	75.3	75.9	-

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. 2008 — continued

Country	Reactor		Type	Model	Capacity [MW]		Operator	NSSS Supplier	Construction Start	Grid Connection	Commercial Operation	EAF % 1998 to 2008	UCF % 1998 to 2008	Non-electrical Applies	
	Code	Name			Thermal	Gross									Net
	GB-16B	HINKLEY POINT-B2	GCR	AGR	1494	655	410	TNPG	1967-9	1976-2	1976-9	72.7	73.9	-	
	GB-17A	HUNTERSTON-B1	GCR	AGR	1496	644	410	BE	1967-11	1976-2	1976-2	70.1	70.5	-	
	GB-17B	HUNTERSTON-B2	GCR	AGR	1496	644	410	BE	1967-11	1977-3	1977-3	70.7	70.8	-	
	GB-11A	OLDBURY-A1	GCR	MAGNOX	730	230	217	MEL	1962-5	1967-11	1967-12	79.8	80.2	-	
	GB-11B	OLDBURY-A2	GCR	MAGNOX	660	230	217	MEL	1962-5	1968-4	1968-9	78.1	78.1	-	
	GB-24	SIZEWELL-B	PWR		3425	1250	1188	BE	1988-7	1995-2	1995-9	86.3	86.4	-	
	GB-23A	TORNES 1	GCR	AGR	1623	682	615	BE	1980-8	1988-5	1988-5	73.2	75.2	-	
	GB-23B	TORNES 2	GCR	AGR	1623	682	615	BE	1980-8	1989-2	1989-2	73.3	74.4	-	
	GB-13A	WYLFA 1	GCR	MAGNOX	1920	540	490	MEL	1963-9	1971-1	1971-11	71.2	71.7	-	
	GB-13B	WYLFA 2	GCR	MAGNOX	1920	540	490	MEL	1963-9	1971-7	1972-1	69.2	69.4	-	
UKRAINE	UA-40	KHMELNITSKI-1	PWR	VVER V-320	3000	1000	950	NNEG	1981-11	1987-12	1988-8	72.8	73.7	DH	
	UA-41	KHMELNITSKI-2	PWR	VVER V-320	3000	1000	950	NNEG	1985-2	2004-8	2005-12	78.3	79.4	DH	
	UA-27	ROVNO-1	PWR	VVER V-213	1375	420	381	NNEG	1973-8	1980-12	1981-9	79.8	80.5	DH	
	UA-28	ROVNO-2	PWR	VVER V-213	1375	415	376	NNEG	1973-10	1981-12	1982-7	80.0	81.1	DH	
	UA-29	ROVNO-3	PWR	VVER V-320	3000	1000	950	NNEG	1980-2	1986-12	1987-5	70.8	72.6	DH	
	UA-69	ROVNO-4	PWR	VVER V-320	3000	1000	950	NNEG	1986-8	2004-10	2006-4	66.7	67.4	DH	
	UA-44	SOUTH UKRAINE-1	PWR	VVER V-302	3000	1000	950	NNEG	1977-3	1982-12	1983-10	66.7	67.4	DH	
	UA-45	SOUTH UKRAINE-2	PWR	VVER V-338	3000	1000	950	NNEG	1979-10	1985-1	1985-4	63.1	64.3	DH	
	UA-48	SOUTH UKRAINE-3	PWR	VVER V-320	3000	1000	950	NNEG	1985-2	1989-9	1989-12	70.3	71.5	DH	
	UA-54	ZAPOROZHE-1	PWR	VVER V-320	3000	1000	950	NNEG	1980-4	1984-12	1985-12	63.4	65.7	DH	
	UA-56	ZAPOROZHE-2	PWR	VVER V-320	3000	1000	950	NNEG	1981-1	1985-7	1986-2	67.9	69.5	DH	
	UA-78	ZAPOROZHE-3	PWR	VVER V-320	3000	1000	950	NNEG	1982-4	1986-12	1987-3	68.8	72.6	DH	
	UA-79	ZAPOROZHE-4	PWR	VVER V-320	3000	1000	950	NNEG	1983-4	1987-12	1988-4	73.5	76.1	DH	
	UA-126	ZAPOROZHE-5	PWR	VVER V-320	3000	1000	950	NNEG	1985-11	1989-8	1989-10	73.9	75.5	DH	
	UA-127	ZAPOROZHE-6	PWR	VVER V-320	3000	1000	950	NNEG	1986-6	1995-10	1996-9	79.1	81.2	DH	
	USA	US-313	ARKANSAS ONE-1	PWR	B&W (L-loop) D	2568	880	843	ENTGARKS	1968-12	1974-8	1974-12	78.8	79.1	-
		US-368	ARKANSAS ONE-2	PWR	CE (2-loop) DR	3026	1040	995	ENERGY	1968-12	1978-12	1980-3	83.0	83.2	-
		US-334	BEAVER VALLEY-1	PWR	W (3-loop)	2689	923	892	FENOC	1970-6	1976-6	1976-10	72.3	72.3	-

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

TABLE 14. REACTORS IN OPERATION, 31 DEC. 2008 — continued

Country	Reactor		Type	Model	Capacity [MW]		Operator	NSSS Supplier	Construction Start	Grid Connection	Commercial Operation	EAF % 1998 to 2008	UCF % 1998 to 2008	Non-electrical Applies
	Code	Name			Thermal	Gross								
	US-412	BEAVER VALLEY-2	PWR	W (3-loop)	2689	923	890	FENOC	1974-5	1987-8	1987-11	86.0	86.0	-
	US-456	BRADWOOD-1	PWR	W (4-loop)	3587	1240	1178	EXELON	1975-12	1987-7	1987-7	87.5	87.5	-
	US-457	BRADWOOD-2	PWR	W (4-loop) DRY	3587	1213	1152	EXELON	1975-12	1988-5	1988-10	90.5	90.6	-
	US-259	BROWNS FERRY-1	BWR	BWR-4	3458	1152	1065	TVA	1967-5	1973-10	1974-8	61.0	61.0	-
	US-260	BROWNS FERRY-2	BWR	BWR-4 (Mark 1)	3458	1155	1104	TVA	1967-5	1974-8	1975-3	78.9	78.9	-
	US-296	BROWNS FERRY-3	BWR	BWR-4 (Mark 1)	3458	1400	1230	TVA	1976-9	1976-9	1977-3	80.8	80.8	-
	US-325	BRUNSWICK-1	BWR	BWR-4 (Mark 1)	2923	990	938	PROGENGC	1970-2	1976-12	1977-3	73.5	73.8	-
	US-324	BRUNSWICK-2	BWR	BWR-4 (Mark 1)	2923	989	937	PROGENGC	1970-2	1975-4	1975-11	72.4	72.8	-
	US-454	BYRON-1	PWR	W (4-loop) (DR)	3587	1225	1164	EXELON	1975-12	1985-3	1985-9	87.3	87.3	-
	US-455	BYRON-2	PWR	W (4-loop) (DR)	3587	1196	1136	EXELON	1975-12	1987-2	1987-8	91.6	91.6	-
	US-483	CALLAWAY-1	PWR	W (4-loop) DRY	3565	1236	1190	AMERGENE	1976-4	1984-10	1984-12	88.1	88.1	-
	US-317	CALVERT CLIFFS-1	PWR	CE (2-loop) (D)	2700	918	873	CCNPP	1969-7	1975-1	1975-5	77.2	77.5	-
	US-318	CALVERT CLIFFS-2	PWR	CE (2-loop) (D)	2700	911	862	CCNPP	1969-7	1976-12	1977-4	80.9	81.0	-
	US-413	CATAWBA-1	PWR	W (4-loop) (IC)	3411	1188	1129	DUKE	1975-8	1985-1	1985-6	83.9	83.9	-
	US-414	CATAWBA-2	PWR	W (4-loop) (IC)	3411	1188	1129	DUKE	1975-8	1986-5	1986-8	85.0	85.0	-
	US-461	CLINTON-1	BWR	BWR-6 (Mark 3)	3473	1098	1043	AMERGENE	1976-2	1987-4	1987-11	74.5	74.6	-
	US-397	COLUMBIA	BWR	BWR-5 (Mark 2)	3486	1200	1131	ENERGYNW	1972-2	1984-5	1984-12	77.8	78.6	-
	US-445	COMANCHE PEAK-1	PWR	W (4-loop) DRY	3458	1189	1150	TXU	1974-12	1990-4	1990-8	88.5	88.5	-
	US-446	COMANCHE PEAK-2	PWR	W (4-loop) DRY	3458	1189	1150	TXU	1974-12	1993-4	1993-8	90.5	90.6	-
	US-298	COOPER	BWR	BWR-4 (Mark 1)	2381	801	770	NPPD	1968-6	1974-5	1974-7	75.3	75.3	-
	US-302	CRYSTAL RIVER-3	PWR	B&W (L-loop)	2568	890	838	PROGRESS	1968-9	1977-1	1977-3	73.0	73.1	-
	US-346	DAVIS BESSE-1	PWR	B&W (R-loop)	2772	925	894	FENOC	1971-3	1977-8	1978-7	68.1	68.2	-
	US-275	DIABLO CANYON-1	PWR	W (4-loop)	3338	1136	1122	PGE	1968-4	1984-11	1985-3	86.3	86.4	-
	US-323	DIABLO CANYON-2	PWR	W (4-loop)	3411	1164	1118	PGE	1970-12	1985-10	1986-5	88.3	88.4	-
	US-315	DONALD COOK-1	PWR	W (4-loop) ICE	3304	1077	1009	IMPSCO	1969-3	1975-2	1975-8	69.5	69.6	-
	US-313	DONALD COOK-2	PWR	W (4-loop) ICE	3468	1133	1060	IMPSCO	1969-3	1978-3	1978-7	68.3	68.5	-
	US-237	DRESDEN-2	BWR	BWR-3 (Mark 1)	2527	913	867	EXELON	1966-1	1970-4	1970-6	77.2	77.3	-
	US-249	DRESDEN-3	BWR	BWR-3 (Mark 1)	2527	913	867	EXELON	1966-10	1971-7	1971-7	73.5	73.5	-
	US-331	DUANE ARNOLD-1	BWR	BWR-4 (Mark 1)	1912	614	580	FPLDUANE	1970-6	1974-5	1975-2	78.5	78.6	-
	US-341	ENRICO FERMI-2	BWR	BWR-4 (Mark 1)	3430	1154	1122	DETE	1972-9	1986-9	1988-1	77.9	77.9	-

TABLE 14. REACTORS IN OPERATION, 31 DEC. 2008 — continued

Country	Reactor		Type	Model	Capacity [MW]		Operator	NSSS Supplier	Construction Start	Grid Connection	Commercial Operation	EAF % 1998 to 2008	UCF % 1998 to 2008	Non-electrical Applies
	Code	Name			Thermal	Gross								
	US-348	FARLEY-1	PWR	W (3-loop)	2775	895	ALP	WH	1972-8	1977-8	1977-12	83.0	83.2	-
	US-364	FARLEY-2	PWR	W (3-loop) DRY	2775	905	ALP	WH	1972-8	1981-5	1981-7	87.2	87.3	-
	US-333	FITZPATRICK	BWR	BWR-4 (Mark 1)	2536	882	ENERGY GE	ENERGY GE	1970-5	1975-2	1975-7	76.6	76.8	-
	US-285	FORT CALHOUN-1	PWR	CE (2-loop)	1500	512	OPP	CE	1968-6	1973-8	1973-9	80.2	80.2	-
	US-416	GRAND GULF-1	BWR	BWR-6 (Mark 3)	3833	1333	ENERGY GE	ENERGY GE	1974-9	1984-10	1984-10	86.5	86.6	-
	US-261	H.B. ROBINSON-2	PWR	W (3-loop) DRY	2339	745	PROGRESS WH	WH	1967-4	1970-9	1971-3	78.4	78.6	-
	US-321	HATCH-1	BWR	BWR-4 (Mark 1)	2804	898	SOUTH GE	GE	1969-9	1974-11	1975-12	79.9	79.9	-
	US-366	HATCH-2	BWR	BWR-4 (Mark 1)	2804	921	SOUTH GE	GE	1972-12	1978-9	1979-9	82.5	82.6	-
	US-354	HOPE CREEK-1	BWR	BWR-4 (Mark 1)	3339	1376	PSEG	GE	1976-3	1986-8	1986-12	85.4	85.4	-
	US-247	INDIAN POINT-2	PWR	W (4-loop) DRY	3216	1062	ENERGY WH	WH	1966-10	1973-6	1974-8	71.8	71.9	-
	US-286	INDIAN POINT-3	PWR	W (4-loop) DRY	3216	1065	ENERGY WH	WH	1969-8	1976-4	1976-8	68.1	68.1	-
	US-305	KEWAUNEE	PWR	W (2-loop) DRY	1772	581	DOMENGY WH	WH	1968-8	1974-4	1974-6	82.9	82.9	-
	US-373	LASALLE-1	BWR	BWR-5 (Mark 2)	3489	1177	EXELON GE	GE	1973-9	1982-9	1984-1	75.2	75.2	-
	US-374	LASALLE-2	BWR	BWR-5 (Mark 2)	3489	1179	EXELON GE	GE	1973-9	1984-4	1984-10	74.3	74.3	-
	US-352	LIMERICK-1	BWR	BWR-4 (Mark 2)	3458	1194	EXELON GE	GE	1974-6	1985-4	1986-2	89.5	89.5	-
	US-353	LIMERICK-2	BWR	BWR-4 (Mark 2)	3458	1194	EXELON GE	GE	1974-6	1985-9	1990-1	92.9	92.9	-
	US-369	MCGUIRE-1	PWR	W (4-loop) ICE	3411	1158	DUKE WH	WH	1973-2	1981-9	1981-12	79.9	80.3	-
	US-370	MCGUIRE-2	PWR	W (4-loop) IC	3411	1158	DUKE WH	WH	1973-2	1983-5	1984-3	84.0	84.0	-
	US-336	MILLSTONE-2	PWR	COMB CE DRY	2700	910	DOMIN CE	CE	1970-2	1975-11	1975-12	65.9	66.7	-
	US-423	MILLSTONE-3	PWR	W (4-loop) DRY	3411	1253	DOMIN WH	WH	1974-8	1986-2	1986-4	74.8	74.8	-
	US-263	MONTICELLO	BWR	BWR-3	1775	600	NORTHERN GE	GE	1967-6	1971-3	1971-6	84.6	84.6	-
	US-220	NINE MILE POINT-1	BWR	BWR-2 (Mark 1)	1850	642	NMPNSLLC GE	GE	1965-4	1969-11	1969-12	74.0	74.0	-
	US-410	NINE MILE POINT-2	BWR	BWR-5 (Mark 2)	3467	1205	NMPNSLLC GE	GE	1974-6	1987-8	1988-3	82.7	82.7	-
	US-338	NORTH ANNA-1	PWR	W (3-loop)	2893	973	VEPCO WH	WH	1971-2	1978-4	1978-6	81.9	81.9	-
	US-339	NORTH ANNA-2	PWR	W (3-loop)	2893	956	VEPCO WH	WH	1971-2	1980-8	1980-12	85.3	85.3	-
	US-269	OCONEE-1	PWR	B&W (L-loop)	2568	891	DUKE B&W	B&W	1967-11	1973-5	1973-7	79.5	79.5	-
	US-270	OCONEE-2	PWR	B&W (L-loop)	2568	891	DUKE B&W	B&W	1967-11	1973-12	1974-9	80.8	81.1	-
	US-287	OCONEE-3	PWR	B&W (L-loop)	2568	891	DUKE B&W	B&W	1967-11	1974-9	1974-12	79.6	79.9	-
	US-219	OYSTER CREEK	BWR	BWR-2 (Mark 1)	1930	652	AMERGEN GE	GE	1964-12	1969-9	1969-12	74.9	74.9	-
	US-255	PALISADES	PWR	CE (2-loop) DR	2565	842	CONSENEC GE	GE	1967-3	1971-12	1971-12	68.6	69.6	-

TABLE 14. REACTORS IN OPERATION, 31 DEC. 2008 — continued

Country	Reactor		Type	Model	Capacity [MW]		Operator	NSSS Supplier	Construction Start	Grid Connection	Commercial Operation	EAF % 1998 to 2008	UCF % 1998 to 2008	Non-electrical Applies	
	Code	Name			Thermal	Gross									Net
	US-528	PALO VERDE-1	PWR	CE (2-loop) DR	3990	1414	1311	AZPSCO	CE	1976-5	1985-6	1986-1	76.7	77.0	-
	US-529	PALO VERDE-2	PWR	COMB CE80 DF	3990	1414	1314	AZPSCO	CE	1976-6	1986-5	1986-9	80.1	80.3	-
	US-530	PALO VERDE-3	PWR	COMB CE80 DF	3990	1346	1317	AZPSCO	CE	1976-6	1987-11	1988-1	82.8	83.1	-
	US-277	PEACH BOTTOM-2	BWR	BWR-4 (Mark 1)	3514	1171	1112	EXELON	GE	1968-1	1974-2	1974-7	73.5	73.5	-
	US-278	PEACH BOTTOM-3	BWR	BWR-4 (Mark 1)	3514	1171	1112	EXELON	GE	1968-1	1974-9	1974-12	74.0	74.1	-
	US-440	PERRY-1	BWR	BWR-6 (Mark 3)	3758	1303	1245	FENOC	GE	1977-5	1986-12	1987-11	80.2	80.2	-
	US-293	PILGRIM-1	BWR	BWR-3 (Mark 1)	2028	711	685	ENTERGY	GE	1967-7	1972-7	1972-12	69.9	70.2	-
	US-266	POINT BEACH-1	PWR	W (2-loop) DRY	1540	543	512	WEP	WH	1968-7	1970-11	1970-12	82.7	83.1	-
	US-301	POINT BEACH-2	PWR	W (2-loop) DRY	1540	545	514	WEP	WH	1968-7	1972-8	1972-10	84.5	84.5	-
	US-282	PRAIRIE ISLAND-1	PWR	W (2-loop) DRY	1650	566	551	NORTHERN	WH	1968-6	1973-12	1973-12	86.1	86.1	-
	US-306	PRAIRIE ISLAND-2	PWR	W (2-loop) DRY	1650	640	545	NUCMAN	WH	1969-6	1974-12	1974-12	87.9	87.9	-
	US-254	QUAD CITIES-1	BWR	BWR-3 (Mark 1)	2957	913	867	EXELON	GE	1967-2	1972-4	1973-2	77.0	77.1	-
	US-265	QUAD CITIES-2	BWR	BWR-3 (Mark 1)	2511	913	867	EXELON	GE	1967-2	1972-5	1973-3	75.3	76.0	-
	US-244	R.E. GINNA	PWR	W (2-loop)	1775	608	498	CONPP	WH	1966-4	1969-12	1970-7	84.4	84.4	-
	US-458	RIVER BEND-1	BWR	BWR-6 (Mark 3)	3091	1036	970	ENTGS	GE	1977-3	1985-12	1986-6	81.4	81.7	-
	US-272	SALEM-1	PWR	W (4-loop) DRY	3459	1228	1174	PSEGPOWER	WH	1968-9	1976-12	1977-6	66.8	67.0	-
	US-311	SALEM-2	PWR	W (4-loop) DRY	3459	1170	1156	PSEGPOWER	WH	1968-9	1981-6	1981-10	69.3	69.3	-
	US-361	SAN ONOFRE-2	PWR	CE (2-loop) DR	3438	1127	1070	SCE	CE	1974-3	1982-9	1983-8	81.4	81.4	-
	US-362	SAN ONOFRE-3	PWR	CE (2-loop) DR	3438	1127	1080	SCE	CE	1974-3	1983-9	1984-4	81.4	81.4	-
	US-443	SEABROOK-1	PWR	W (4-loop) DRY	3587	1296	1245	FPL	WH	1976-7	1990-5	1990-8	86.5	86.6	-
	US-327	SEQUOYAH-1	PWR	W (4-loop) ICE	3411	1221	1148	TVA	WH	1970-5	1980-7	1981-7	71.2	71.2	-
	US-328	SEQUOYAH-2	PWR	W (4-loop) IC	3411	1221	1126	TVA	WH	1970-5	1981-12	1982-6	75.1	75.1	-
	US-400	SEARON HARRIS-1	PWR	W (3-loop) DRY	2900	960	920	PROGENGC	WH	1978-1	1987-1	1987-5	87.9	87.9	-
	US-498	SOUTH TEXAS-1	PWR	W (4-loop)	3853	1354	1280	STP	WH	1975-12	1988-3	1988-8	80.7	80.7	-
	US-499	SOUTH TEXAS-2	PWR	W (4-loop) DRY	3853	1354	1280	STP	WH	1975-12	1989-4	1989-6	81.8	81.8	-
	US-335	ST. LUCIE-1	PWR	COMB CE DRY	2700	883	839	FPL	CE	1970-7	1976-5	1976-12	81.8	82.1	-
	US-389	ST. LUCIE-2	PWR	COMB CE DRY	2700	883	839	FPL	CE	1977-5	1983-6	1983-8	86.1	86.5	-
	US-280	SURRY-1	PWR	W (3-loop) DRY	2546	848	799	VEPCO	WH	1968-6	1972-7	1972-12	74.6	74.6	-
	US-281	SURRY-2	PWR	W (3-loop) DRY	2546	848	799	VEPCO	WH	1968-6	1973-5	1973-5	75.6	75.6	-
	US-387	SUSQUEHANNA-1	BWR	BWR-4 (Mark 2)	3489	1199	1149	PP&L	GE	1973-11	1982-11	1983-6	83.6	83.7	-

TABLE 14. REACTORS IN OPERATION, 31 DEC. 2008 — continued

Country	Reactor		Type	Model	Capacity [MW]		Operator	NSSS Supplier	Construction Start	Grid Connection	Commercial Operation	EAF % 1998 to 2008	UCF % 1998 to 2008	Non-electrical Applies
	Code	Name			Thermal	Gross								
	US-388	SUSQUEHANNA-2	BWR	BWR-4 (Mark 2)	3489	1204	1140	GE	1973-11	1984-7	1985-2	87.5	87.5	-
	US-289	THREE MILE ISLAND-1	PWR	B&W (L-loop)	2568	837	786	AMERGENE B&W	1968-5	1974-6	1974-9	72.1	86.6	-
	US-250	TURKEY POINT-3	PWR	W (3-loop) DRY	2300	729	693	FPL	1967-4	1972-11	1972-12	77.6	77.7	-
	US-251	TURKEY POINT-4	PWR	W (3-loop) DRY	2300	729	693	FPL	1967-4	1973-6	1973-9	76.9	77.0	-
	US-271	VERMONT YANKEE	BWR	BWR-4 (Mark 1)	1912	650	620	ENERGY	1967-12	1972-9	1972-11	84.2	84.2	-
	US-395	VIRGIL C. SUMMER-1	PWR	W (3-loop) DRY	2900	1003	966	WH	1973-3	1982-11	1984-1	84.5	84.5	-
	US-424	VOGTLE-1	PWR	W (4-loop) DRY	3565	1203	1109	SOUTH	1976-8	1987-3	1987-6	89.8	89.9	-
	US-425	VOGTLE-2	PWR	W (4-loop) DRY	3565	1202	1127	SOUTH	1976-8	1989-4	1989-5	89.8	89.8	-
	US-382	WATERFORD-3	PWR	CE (2-loop)	3716	1200	1157	ENERGY	1974-11	1985-3	1985-9	86.7	87.0	-
	US-390	WATTS BAR-1	PWR	W (4-loop) / (C	3459	1202	1123	TVA	1973-1	1986-2	1986-5	89.6	89.6	-
	US-482	WOLF CREEK	PWR	W (4-loop)	3565	1213	1166	KGECO	1977-5	1985-6	1985-9	86.3	86.4	-
TWN, CHINA	TW-1	CHIN SHAN-1	BWR	BWR-4	1775	636	604	TPC	1972-6	1977-11	1978-12	81.8	82.9	-
	TW-2	CHIN SHAN-2	BWR	BWR-4	1775	636	604	TPC	1973-12	1978-12	1979-7	81.5	82.6	-
	TW-3	KUOSHENG-1	BWR	BWR-6	2943	1019	985	TPC	1975-11	1981-5	1981-12	82.4	83.1	-
	TW-4	KUOSHENG-2	BWR	BWR-6	2943	985	948	TPC	1976-3	1982-6	1983-3	81.7	82.8	-
	TW-5	MAANSHAN-1	PWR	BWR	2785	951	900	TPC	1978-8	1984-5	1984-7	83.6	85.1	-
	TW-6	MAANSHAN-2	PWR	BWR	2785	951	908	TPC	1979-2	1985-2	1985-5	84.0	85.8	-

Status as of 31 December 2008, 438 reactors (371562 MW(e)) were connected to the grid, including 6 units (4949 MW(e)) in Taiwan, China.

TABLE 15. LONG-TERM SHUTDOWN REACTORS, 31 DEC. 2008

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

Status as of 31 December 2008, 5 reactors (2972 MW(e)) were in long-term shutdown.

TABLE 16. REACTORS PERMANENTLY SHUT DOWN, 31 DEC. 2008

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	376	ANPPJSC	FAEA	1969-7	1976-12	1977-10	1989-2	
BELGIUM	BE-1	BR-3	PWR	41	12	10	CEN/ISCK	WH	1957-11	1962-10	1962-10	1987-6	
BULGARIA	BG-1	KOZLODUY-1	PWR	1375	440	408	KOZNPP	AEI	1970-4	1974-7	1974-10	2002-12	
	BG-2	KOZLODUY-2	PWR	1375	440	408	KOZNPP	AEI	1970-4	1975-8	1975-11	2002-12	
	BG-3	KOZLODUY-3	PWR	1375	440	408	KOZNPP	AEI	1973-10	1980-12	1981-1	2006-12	
	BG-4	KOZLODUY-4	PWR	1375	440	408	KOZNPP	AEI	1973-10	1982-5	1982-6	2006-12	
CANADA	CA-2	DOUGLAS POINT	PHWR	704	218	206	OH	AECL	1960-2	1967-1	1968-9	1984-5	
	CA-3	GENTILLY-1	HWLWR	792	266	250	HQ	AECL	1966-9	1971-4	1972-5	1977-6	
	CA-1	ROLPHTON NPD	PHWR	92	25	22	OH	CGE	1958-1	1962-6	1962-10	1987-8	
FRANCE	FR-9	BUGEY-1	GCR	1954	555	540	EDF	FRAM	1965-12	1972-4	1972-7	1994-5	
	FR-2	CHINON-A1	GCR	300	80	70	EDF	LEVIVIER	1957-2	1963-6	1964-2	1973-4	
	FR-3	CHINON-A2	GCR	800	230	180	EDF	LEVIVIER	1959-8	1965-2	1965-2	1985-6	
	FR-4	CHINON-A3	GCR	1170	480	360	EDF	GTM	1961-3	1966-8	1966-8	1990-6	
	FR-5	CHOOZ-A (ARDENNES)	PWR	1040	320	305	SENA	AF/W	1962-1	1967-4	1967-4	1991-10	
	FR-6	EL-4 (MONTS D'ARREE)	HWGCR	250	75	70	EDF	GAAA	1962-7	1967-7	1968-6	1985-7	
	FR-1B	G-2 (MARCOULE)	GCR	260	43	38	COGEMA	SACM	1955-3	1959-4	1959-4	1980-2	
	FR-1	G-3 (MARCOULE)	GCR	260	43	40	COGEMA	SACM	1956-3	1960-4	1960-4	1984-6	
	FR-7	ST. LAURENT-A1	GCR	1650	500	480	EDF	FRAM	1963-10	1969-3	1969-6	1990-4	
	FR-8	ST. LAURENT-A2	GCR	1475	530	465	EDF	FRAM	1966-1	1971-8	1971-11	1992-5	
	FR-24	SUPER-PHENIX	FBR	3000	1242	1200	EDF	ASPALDO	1976-12	1986-1	NA	1998-12	
	GERMANY	DE-4	AVR JUELICH (AVR)	HTGR	46	15	13	AVR	BBK	1961-8	1967-12	1969-5	1988-12
		DE-502	GREIFSWALD-1 (KGR 1)	PWR	1375	440	408	EWN	AEI	1970-3	1974-7	1974-7	1990-2
		DE-503	GREIFSWALD-2 (KGR 2)	PWR	1375	440	408	EWN	AEI	1970-3	1974-12	1975-4	1990-2
DE-504		GREIFSWALD-3 (KGR 3)	PWR	1375	440	408	EWN	AEI	1972-4	1977-10	1978-5	1990-2	
DE-505		GREIFSWALD-4 (KGR 4)	PWR	1375	440	408	EWN	AEI	1972-4	1979-9	1979-11	1990-7	

TABLE 16. REACTORS PERMANENTLY SHUT DOWN, 31 DEC. 2008 — continued

Country	Reactor		Type	Capacity [MW]			Operator	NSSS Supplier	Construction Start	Grid Connection	Commercial Operation	Shut Down
	Code	Name		Thermal	Gross	Net						
GERMANY	DE-506	GREIFSWALD-5 (KGR 5)	PWR	1375	440	408	EWN	AIEE	1976-12	1989-4	1989-11	1989-11
	DE-3	GUNDEMMINGEN-A (KRB A)	BWR	801	250	237	KBG	AEG,GE	1962-12	1966-12	1967-4	1977-1
	DE-7	HDR GROSSWELZHEIM	BWR	100	25	25	KBG	AEG,KWU	1965-1	1969-10	1970-8	1971-4
	DE-8	KNK II	FBR	58	21	17	KBG	IA	1974-9	1978-4	1979-3	1991-8
	DE-6	LINGEN (KWL)	BWR	520	268	183	KWL	AEG	1964-10	1968-7	1968-10	1979-1
	DE-22	MUELHEIM-KAERLICH (KMK)	PWR	3760	1302	1219	KBG	BBR	1975-1	1986-3	1987-8	1988-9
	DE-2	MZFR	PHWR	200	57	52	KBG	SIEMENS	1961-12	1966-3	1966-12	1984-5
	DE-11	NIEDERAICHBACH (KKN)	HWGCR	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	RHEINBERG (KKR)	PWR	265	70	62	E.ON	AIEE	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
JAPAN	IT-1	LATINA	GCR	660	160	153	SOGIN	TNPG	1958-11	1963-5	1964-1	1987-12
	JP-20	FUGENA TR	HWLWR	557	165	148	JAEA	HITACHI	1972-5	1978-7	1979-3	2003-3
	JP-1	JPDR	BWR	90	13	12	JAEA	GE	1960-12	1963-10	1965-3	1976-3
KAZAKHSTAN	JP-2	TOKAI-1	GCR	587	166	137	JAPCO	GEC	1961-3	1965-11	1966-7	1998-3
	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
NETHERLANDS	NL-1	DODEWAARD	BWR	183	60	55	BV GKN	RDM	1965-5	1968-10	1969-3	1997-3
RUSSIA	RU-1	APS-1 OBNINSK	LWGR	30	6	5	MSM	MSM	1951-1	1954-6	1954-12	2002-4

TABLE 16. REACTORS PERMANENTLY SHUT DOWN, 31 DEC. 2008 — continued

Country	Reactor		Type	Capacity [MW]		Operator	NSSS Supplier	Construction Start	Grid Connection	Commercial Operation	Shut Down
	Code	Name		Thermal	Gross						
RUSSIA	RU-3	BELOYARSKY-1	LWGR	286	108	102	MSM	1958-6	1964-4	1964-4	1983-1
	RU-6	BELOYARSKY-2	LWGR	530	160	146	MSM	1962-1	1967-12	1969-12	1990-1
	RU-4	NOVORORONEZH-1	PWR	760	210	197	MSM	1957-7	1964-9	1964-12	1988-2
	RU-8	NOVORORONEZH-2	PWR	1320	365	336	MSM	1964-6	1969-12	1970-4	1990-8
SLOVAKIA	SK-1	BOHUNICE A1	HWGCR	560	143	93	JAVYS	1958-8	1972-12	1972-12	1977-2
	SK-2	BOHUNICE-1	PWR	1375	440	408	JAVYS	1972-4	1978-12	1980-4	2006-12
	SK-3	BOHUNICE-2	PWR	1375	440	408	JAVYS	1972-4	1980-3	1981-1	2008-12
SPAIN	ES-1	JOSE CABRERA-1 (ZORITA)	PWR	510	150	141	UFG	1964-6	1968-7	1969-8	2006-4
	ES-3	VANDELLOS-1	GCR	1670	500	480	HIFRENSA	1968-6	1972-5	1972-8	1990-7
SWEDEN	SE-1	AGESTA	PHWR	80	12	10	BKAB	1957-12	1964-5	1964-5	1974-6
	SE-6	BARSEBACK-1	BWR	1800	615	600	BKAB	1971-2	1975-5	1975-7	1999-11
	SE-8	BARSEBACK-2	BWR	1800	615	615	BKAB	1973-1	1977-3	1977-7	2005-5
UK	GB-3A	BERKELEY 1	GCR	620	166	138	MEL	1957-1	1962-6	1962-6	1989-3
	GB-3B	BERKELEY 2	GCR	620	166	138	MEL	1957-1	1962-6	1962-10	1988-10
	GB-4A	BRADWELL 1	GCR	481	146	123	MEL	1957-1	1962-7	1962-7	2002-3
	GB-4B	BRADWELL 2	GCR	481	146	123	MEL	1957-1	1962-7	1962-11	2002-3
	GB-1A	CALDER HALL 1	GCR	268	60	50	MEL	1953-8	1956-8	1956-10	2003-3
	GB-1B	CALDER HALL 2	GCR	268	60	50	MEL	1953-8	1957-2	1957-2	2003-3
	GB-1C	CALDER HALL 3	GCR	268	60	50	MEL	1955-8	1958-3	1958-5	2003-3
	GB-1D	CALDER HALL 4	GCR	268	60	50	MEL	1955-8	1959-4	1959-4	2003-3
	GB-2A	CHAPELCROSS 1	GCR	260	60	50	MEL	1955-10	1959-2	1959-3	2004-6
	GB-2B	CHAPELCROSS 2	GCR	260	60	50	MEL	1955-10	1959-2	1959-8	2004-6
	GB-2C	CHAPELCROSS 3	GCR	260	60	50	MEL	1955-10	1959-11	1959-12	2004-6
	GB-2D	CHAPELCROSS 4	GCR	260	60	50	MEL	1955-10	1960-1	1960-3	2004-6
	GB-14	DOUNREAY DFR	FBR	60	15	11	UKAEA	1955-3	1962-10	1962-10	1977-3
	GB-15	DOUNREAY PFR	FBR	600	250	234	UKAEA	1966-1	1975-1	1976-7	1994-3
	GB-9A	DUNGENESS-A1	GCR	840	230	225	MEL	1960-7	1965-9	1965-10	2006-12

TABLE 16. REACTORS PERMANENTLY SHUT DOWN, 31 DEC. 2008 — continued

Country	Reactor		Type	Capacity [MW]			Operator	NSSS Supplier	Construction Start	Grid Connection	Commercial Operation	Shut Down
	Code	Name		Thermal	Gross	Net						
UK	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	EEB&W/T	1957-11	1965-2	1965-3	2000-5
	GB-7B	HINKLEY POINT-A2	GCR	900	267	235	MEL	EEB&W/T	1957-11	1965-3	1965-5	2000-5
	GB-6A	HUNTERSTON-A1	GCR	595	173	300	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	1988-12
	GB-10A	SIZEWELL-A1	GCR	1010	245	210	MEL	EEB&W/T	1961-4	1966-1	1966-3	2006-12
	GB-10B	SIZEWELL-A2	GCR	1010	245	210	MEL	EEB&W/T	1966-4	1966-4	1966-9	2006-12
	GB-8A	TRAFSFYNYDD 1	GCR	850	235	390	MEL	APC	1959-7	1965-1	1965-3	1991-2
	GB-8B	TRAFSFYNYDD 2	GCR	850	235	195	MEL	APC	1959-7	1965-2	1965-3	1991-2
	GB-5	WINDSCALE AGR	GCR	120	41	32	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
	UKRAINE	UA-25	CHERNOBYL-1	LWGR	3200	800	740	MTE	FAEA	1970-3	1977-9	1978-5
UA-26		CHERNOBYL-2	LWGR	3200	1000	925	MTE	FAEA	1973-2	1978-12	1979-5	1991-10
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
USA	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	1968-6
	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	RCPA	AC	1959-1	1963-8	1964-7	1968-2
	US-16	ENRICO FERMI-1	BWR	200	65	61	DETEC	UEC	1956-8	1966-8	NA	1972-11
	US-287	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	1957-10	1957-10	1963-12	1963-10	1966-12
	US-213	HADDAM NECK	PWR	1825	603	560	CYAPC	WH	1964-5	1967-8	1968-1	1996-12
	US-077	HALLAM	X	256	84	75	AEC/NPPD	GE	1959-1	1963-9	1963-11	1964-9
	US-133	HUMBOLDT BAY	BWR	220	65	63	PGE	GE	1960-11	1963-4	1963-8	1976-7
	US-013	INDIAN POINT-1	PWR	615	277	257	ENTERGY	B&W	1956-5	1962-9	1962-10	1974-10
	US-409	LACROSSE	BWR	165	55	48	DPC	AC	1963-3	1968-4	1969-11	1987-4
	US-309	MAINE YANKEE	PWR	2630	900	860	MYAPC	CE	1968-10	1972-11	1972-12	1997-8

TABLE 16. REACTORS PERMANENTLY SHUT DOWN, 31 DEC. 2008 — continued

Country	Reactor		Type	Capacity [MW]			Operator	NSSS Supplier	Construction Start	Grid Connection	Commercial Operation	Shut Down
	Code	Name		Thermal	Gross	Net						
USA	US-245	MILLSTONE-1	BWR	2011	684	641	DOMIN	GE	1966-5	1970-11	1971-3	1998-7
	US-130	PATHFINDER	BWR	0	63	59	NUCMAN	AC	1959-1	1966-7	NA	1967-10
	US-171	PEACH BOTTOM-1	HTGR	115	42	40	EXELON	GA	1962-2	1967-1	1967-6	1974-11
	US-012	PIQUA	X	46	12	12	CoPiqua	GE	1960-1	1963-7	1963-11	1966-1
	US-312	RANCHO SECO-1	PWR	2772	917	873	SMUD	B&W	1969-4	1974-10	1975-4	1989-6
	US-206	SAN ONOFRE-1	PWR	1347	456	436	SCE	WH	1964-5	1967-7	1968-1	1992-11
	US-146	SAXTON	PWR	24	3	3	SNEC	GE	1960-1	1967-3	1967-3	1972-5
	US-001	SHIPPINGPORT	PWR	236	68	60	DOE DUGU	WH	1954-1	1957-12	1958-5	1982-10
	US-322	SHOREHAM	BWR	2436	849	820	LIPA	GE	1972-11	1986-8	NA	1989-5
	US-320	THREE MILE ISLAND-2	PWR	2772	959	880	GPU	B&W	1969-11	1978-4	1978-12	1979-3
	US-344	TROJAN	PWR	3411	1155	1095	PORTGE	WH	1970-2	1975-12	1976-5	1992-11
	US-29	YANKEE NPS	PWR	600	180	167	YAEC	WH	1957-11	1960-11	1961-7	1991-10
	US-295	ZION-1	PWR	3250	1085	1040	EXELON	WH	1968-12	1973-6	1973-12	1998-1
	US-304	ZION-2	PWR	3250	1085	1040	EXELON	WH	1968-12	1973-12	1974-9	1998-1

Status as of 31 December 2008, 120 reactors (35621 MW(e)) are permanently shut down.

TABLE 17. REACTORS IN DECOMMISSIONING PROCESS OR DECOMMISSIONED, 31 Dec.2008

Country	Reactor		Shut	Shutdown reason	Decom.	Current decom.	Current Fuel	Decom.	License
	Code	Name							
BELGIUM	BE -1	BR-3	1987-6	2,5	Imdte.dism.	4,9	4	CEN/SCK	
	BG -1	KOZLODUY-1	2002-12	Others	Dd+PD+SE	1,5,6	2,3,6	E-00707	2036
	BG -2	KOZLODUY-2	2002-12	Others	Dd+PD+SE	1,5,6	2,3,6	E-00613	2036
	BG -3	KOZLODUY-3	2006-12	Others	Dd+PD+SE	1		E-00174	2036
CANADA	BG -4	KOZLODUY-4	2006-12	Others	Dd+PD+SE	1		E-0008	2036
	CA -1	ROLPHTON NPd	1987-8	2	Dd+PD+SE	8		AECL	
	CA -2	DOUGLAS POINT	1984-5	2	Dd+SE	8	7	AECL	
	CA -3	GENTILLY-1	1977-6	2	Dd+PD+SE	8	7	AECL	
FRANCE	FR -2	CHINON-A1	1973-4	1,2	Imdte.dism.	1		EDF	
	FR -24	SUPER-PHENIX	1998-12	Others	Imdte.dism.	6	3,6	NERSA	
	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
GERMANY	FR -9	BUGEY-1	1994-5	1,2	Imdte.dism.	6,9		EDF	2020
	DE -10	STADE (KKS)	2003-11	2	Imdte.dism.	3,4,6		E.ON	2014
	DE -4	AVR JUELICH (AVR)	1988-12	7	Imdte.dism.	3		xxxx	
	DE -501	RHEINBERG (KKR)	1990-6	1	Imdte.dism.	3,9	4	G 01 KKR	
ITALY	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	
	DE -9	WUERGASSEN (KWW)	1994-8	2	Imdte.dism.	3,4,6		E.ON	2014
JAPAN	IT -1	LATINA	1987-12	7,Others	Imdte.dism.	6		SOGIN	2020
	IT -2	GARIGLIANO	1982-3	3,4,Others	Imdte.dism.	6		SOGIN	2015
	IT -3	ENRICO FERMI (TRINO)	1990-7	7,Others	Imdte.dism.	3,6	3,7	SOGIN	2014
	IT -4	CAORSO	1990-7	7,Others	Imdte.dism.	3,4,6	3,7	SOGIN	2016
LITHUANIA	JP -2	TOKAI-1	1996-3	2	Dd+PD+SE	3,6,7		JAPCO	2018
	JP -20	FUGEN ATR	2003-3	2	Dd+SE	1,5	2,5	JAEA	2029
	KZ -10	BN-350	1999-4	2,5	Dd+PD+SE	1,5,6	3,6	MAEC-KAZ planned	2105
	LT -46	IGNALINA-1	2004-12	Others	Imdte.dism.	2	1	MAEC-KAZ	2050
	NL -1	DODEWAARD	1997-3	2,Others	Dd+SE	7		BY GKN	

TABLE 17. REACTORS IN DECOMMISSIONING PROCESS OR DECOMMISSIONED, 31 Dec.2008 — continued

Country	Reactor		Shut	Shutdown reason	Decom.	Current decom.	Current Fuel	Decom.	License
	Code	Name							
SLOVAKIA	SK-1	BOHUNICE A1	1977-2	4	Dd+PD+SE	3,6		JAVYS	
	SK-2	BOHUNICE-1	2006-12	7	Indte.dism.	2	1,2,3,6	JAVYS	
	SK-3	BOHUNICE-2	2008-12	7	Indte.dism.			JAVYS	
SPAIN	ES-1	JOSE CABRERA-1 (ZORITA)	2006-4	Others	Indte.dism.	2	3,7	UFG	2015
	ES-3	VANDELLOS-1	1990-7	4	Dd+PD+SE	8		ENRESA	2032
	SE-1	AGESTA	1974-6	2,3	Dd+SE	7		BKAB	
UK	SE-6	BARSEBACK-1	1999-11	Others	Other		4	BKAB	2025
	SE-8	BARSEBACK-2	2005-5	Others	Other		4	BKAB	2025
	GB-10A	SIZEWELL-A1	2006-12	2,8	Dd+SE	2	5	Magnox S	2110
	GB-10B	SIZEWELL-A2	2006-12	2,8	Dd+SE	2	5	Magnox S	2110
	GB-12	WINFRITH SGHWR	1990-9	Others	Indte.dism.	3,4,9,10		UKAEA	2019
	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		DSR	2333
	GB-1A	CALDER HALL 1	2003-3	2,8	Dd+PD+SE	2,3,5,6	5	SL	2117
	GB-1B	CALDER HALL 2	2003-3	2,8	Dd+PD+SE	2,3,5,6	5	SL	2117
	GB-1C	CALDER HALL 3	2003-3	2,8	Dd+PD+SE	2,3,5,6	5	SL	2117
GB-1D	CALDER HALL 4	2003-3	2,8	Dd+PD+SE	2,3,5,6	5	SL	2117	
GB-2A	CHAPELCROSS 1	2004-6	2,8	Dd+PD+SE	2		Magnox N	2128	
GB-2B	CHAPELCROSS 2	2004-6	2,8	Dd+PD+SE	2		Magnox N	2128	
GB-2C	CHAPELCROSS 3	2004-6	2,8	Dd+PD+SE	2		Magnox N	2128	
GB-2D	CHAPELCROSS 4	2004-6	2,8	Dd+PD+SE	2		Magnox N	2128	
GB-3A	BERKELEY 1	1989-3	2,8	Dd+SE	3,5,6		Magnox S	2083	
GB-3B	BERKELEY 2	1988-10	2,8	Dd+SE	3,5,6		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	
GB-8A	TRAWSFYNYDD 1	1991-2	2,8	Dd+PD+SE	3,5,6		Magnox N	2098	
GB-8B	TRAWSFYNYDD 2	1991-2	2,8	Dd+PD+SE	3,5,6		Magnox N	2098	

TABLE 17. REACTORS IN DECOMMISSIONING PROCESS OR DECOMMISSIONED, 31 Dec.2008 — continued

Country	Reactor		Shut	Shutdown reason	Decom.	Current decom.	Current Fuel	Decom.	License
	Code	Name							
UK	GB -9A	DUNGENESS-A1	2006-12	2,8	Dd+PD+SE	2	5	Magnox S	2111
	GB -9B	DUNGENESS-A2	2006-12	2,8	Dd+PD+SE	2	5	Magnox S	2111
USA	US -012	PIQUA	1966-1	1	in situ disp.	11		CofPiqua	
	US -10	DRESDEN-1	1978-10	6	Dd+SE	11		EXELON	
	US -133	HUMBOLDT BAY	1976-7	5	Dd+PD+SE	3,4,6	7	PGE	2005
	US -16	ENRICO FERMI-1	1972-11	4	Dd+SE	9,11		DETED	
	US -171	PEACH BOTTOM-1	1974-11	1	Dd+SE	1		EXELON	
	US -206	SAN ONOFRE-1	1992-11	Others	Dd+PD+SE	4,9,11		SCE	
	US -213	HADDAM NECK	1996-12	6	Imdte.dism.	4,6,11		CYAPC	
	US -245	MILLSTONE-1	1998-7	6	Dd+PD+SE		7	DOMIN	
	US -29	YANKEE NPS	1991-10	5,7	Imdte.dism.	4,6		YAEC	1997
	US -295	ZION-1	1998-1	5,6	Dd+PD+SE	1			
	US -304	ZION-2	1998-1	5,6	Dd+PD+SE	1			
	US -309	MAINE YANKEE	1997-8	6	Imdte.dism.	4,11		COMMED	2000
	US -312	RANCHO SECO-1	1989-6	5,6	Dd+PD+SE	9,11		MYAPC	2008
	US -320	THREE MILE ISLAND-2	1979-3	4	Dd+SE	11		SMUD	
	US -344	TROJAN	1992-11	6	Dd+PD+SE	11		PORTGE	2011

TABLE 17. DEFINITIONS FOR REACTORS IN DECOMMISSIONING PROCESS OR DECOMMISSIONED

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

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

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

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

TABLE 18. PERFORMANCE FACTORS BY REACTOR CATEGORY, 2006 to 2008

Reactor Category	Reactors reporting to IAEA PRIS (see note)							
	Number of Units	Availability Factor (EAF) %	Planned Cap.Loss Factor (PCL) %	Capability Factor (UCF) %	Forced Loss Rate (FLR) %	Operating Factor (OF) %	Load Factor (LF) %	
PWR	269	84.14	11.32	85.00	2.60	85.63	83.44	
PWR < 600 MWe	52	83.23	12.92	84.67	1.59	85.05	82.28	
PWR >= 600 MWe	217	84.23	11.16	85.04	2.69	85.76	83.55	
BWR	94	77.37	15.50	78.69	5.39	78.11	77.03	
BWR < 600 MWe	14	65.11	26.75	65.65	4.20	68.57	65.91	
BWR >= 600 MWe	80	78.30	14.65	79.67	5.46	79.77	77.87	
PHWR	44	78.72	10.47	83.06	6.13	78.35	78.15	
PHWR < 600 MWe	24	60.86	13.70	72.75	13.46	69.63	59.50	
PHWR >= 600 MWe	20	87.89	8.80	88.38	2.63	88.85	87.78	
LWGR	16	73.37	22.55	74.71	1.55	77.08	73.86	
LWGR < 600 MWe	4	51.43	17.37	81.77	0.02	78.54	27.68	
LWGR >= 600 MWe	12	73.46	22.57	74.69	1.56	76.60	74.05	
GCR	22	58.22	15.72	58.52	21.63	65.03	58.12	
FBR	2	73.10	22.11	73.47	2.26	67.30	73.04	
TOTAL	447	81.26	12.70	82.43	3.83	82.02	80.70	

Note: 2008 is the latest year for which operating experience data is currently available to the IAEA.

— Reactors permanently shut down during 2006 to 2008 (9 units) are considered.

TABLE 19. FULL OUTAGE STATISTICS DURING 2008

Reactor Type	Number of Units In the World	Full Outage Hours per Operating Experience Year	% Planned Outages	% Unplanned Outages	% External Outages
PWR	264	1306	75.8	23.1	1.1
PWR < 600 MWe	47	1397	91.8	7.0	1.2
PWR >= 600 MWe	217	1286	72.0	26.9	1.1
BWR	94	2152	81.6	17.9	0.5
BWR < 600 MWe	14	2659	92.7	6.2	1.1
BWR >= 600 MWe	80	2063	79.1	20.6	0.3
PHWR	44	2079	65.7	26.6	7.7
PHWR < 600 MWe	24	2790	58.9	30.9	10.2
PHWR >= 600 MWe	20	1227	84.3	15.0	0.7
LWGR	16	1996	88.0	8.3	3.7
LWGR < 600 MWe	4	2005	74.8	12.0	13.2
LWGR >= 600 MWe	12	1993	92.5	7.0	0.5
GCR	18	3905	40.1	59.9	0.0
FBR	2	2732	64.5	33.2	2.3
ALL REACTORS	438	1704	73.2	25.0	1.8

Note: 2008 is the latest year for which outage information is currently available to the IAEA.

— Reactors shut down during 2008 (1 unit) are considered.

TABLE 20. DIRECT CAUSES OF FULL OUTAGES DURING 2008

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	996	0.23	1164	0.22	122166	77.23	145675	72.82
Refuelling without a maintenance	10830	2.47	11151	2.08	1312	0.83	2736	1.37
Inspection, maintenance or repair combined with refuelling	305196	69.73	365855	68.08	4236	2.68	5987	2.99
Inspection, maintenance or repair without refuelling	107949	24.66	124034	23.08	3834	2.42	7656	3.83
Testing of plant systems or components	750	0.17	946	0.18	829	0.52	1649	0.82
Major back-fitting, refurbishment or upgrading activities with refuelling	10284	2.35	24596	4.58	595	0.38	624	0.31
Nuclear regulatory requirements					9304	5.88	11962	5.98
Grid limitation, failure or grid unavailability					1161	0.73	4180	2.09
Load-following (frequency control, reserve shutdown due to reduced energy demand)					1677	1.06	2797	1.40
Human factor related					9625	6.08	9945	4.97
Governmental requirements or court decisions					98	0.06	128	0.06
Environmental conditions (lack of cooling water due to dry weather, cooling water temperature limits, flood, storm, lightning, etc.)					1524	0.96	1734	0.87
Fire					6		13	0.01
External restrictions on supply and services					1206	0.76	4446	2.22
Fuel management limitation (including high flux tilt, stretch out or coast-down operation)	873	0.20	859	0.16	29	0.02	62	0.03
Security and access control and other preventive shutdown due to external threats	790	0.18	8784	1.63	582	0.37	443	0.22
Others								
TOTAL	437668	100.00	537389	100.00	158184	100.00	200037	100.00

Only reactors which have achieved full commercial operation in or before 2008 are counted.

TABLE 21. DIRECT CAUSES OF FULL OUTAGES, 1971 TO 2008

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	18441	0.16	26137	0.17	3355169	70.54	4492736	72.75
Refuelling without a maintenance	59687	0.52	67220	0.44	82430	1.73	108270	1.75
Inspection, maintenance or repair combined with refuelling	9246326	80.00	11512208	75.26	88041	1.85	113231	1.83
Inspection, maintenance or repair without refuelling	1777385	15.38	3000493	19.61	29434	0.62	37930	0.61
Testing of plant systems or components	80402	0.70	104729	0.68	35362	0.74	55392	0.90
Major back-fitting, refurbishment or upgrading activities with refuelling	78255	0.68	157916	1.03	2949	0.06	3112	0.05
Nuclear regulatory requirements	84187	0.73	170184	1.11	335424	7.05	393376	6.37
Grid limitation, failure or grid unavailability	26		122		44280	0.93	102628	1.66
Load-following (frequency control, reserve shutdown due to reduced energy demand)	201625	1.74	207874	1.36	611698	12.86	667686	10.81
Human factor related	181		176		48614	1.02	53744	0.87
Governmental requirements or court decisions	2		6		3490	0.07	6036	0.10
Environmental conditions (lack of cooling water due to dry weather, cooling water temperature limits, flood, storm, lightning, etc.)					38414	0.81	39732	0.64
Fire					3582	0.08	3815	0.06
External restrictions on supply and services	105		168		2489	0.05	6286	0.10
Fuel management limitation (including high flux tilt, stretch out or coast-down operation)	3395	0.03	3364	0.02	1101	0.02	1818	0.03
Security and access control and other preventative shutdown due to external threats					29		62	
Others	7397	0.06	36834	0.24	73871	1.55	89945	1.46
TOTAL	11557414	100.00	15287431	100.00	4756377	100.00	6175799	100.00

Only reactors which have achieved full commercial operation in or before 2008 are counted.

TABLE 22. COUNTRIES - Abbreviations and Summary

Country Code	Full Name	Number of Readers, as of 31 Dec. 2008				
		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				24
CN	CHINA	11	11			
CZ	CZECH REPUBLIC	6				
DE	GERMANY	17			19	
ES	SPAIN	8			2	
FI	FINLAND	4	1			
FR	FRANCE	59	1		11	
GB	UNITED KINGDOM	19			26	
HU	HUNGARY	4				
IN	INDIA	17	6			
IR	IRAN, ISLAMIC REPUBLIC OF	1	1			3
IT	ITALY					
JP	JAPAN	55	2		4	
KR	KOREA, REPUBLIC OF	20	5	1	3	11
KZ	KAZAKHSTAN					3
LT	LITHUANIA, REPUBLIC OF	1			1	
MX	MEXICO	2				
NL	NETHERLANDS	1			1	
PK	PAKISTAN	2	1			
RO	ROMANIA	2				
RU	RUSSIAN FEDERATION	31	8		5	4
SE	SWEDEN	10			3	
SI	SLOVENIA	1				
SK	SLOVAK REPUBLIC	4			3	

TABLE 22. COUNTRIES - Abbreviations and Summary — continued

Country Code	Full Name	Number of Reactors, as of 31 Dec. 2008				
		Operational	Construction	LT Shut Down	Shut Down	Planned
TR	TURKEY					1
UA	UKRAINE	15	2		4	
US	UNITED STATES OF AMERICA	104	1		28	
ZA	SOUTH AFRICA	2				
TOTAL		438	44	5	120	47

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. 2008				
		Operational	Construction	LT Shut Down	Shut Down	Planned
BWR	Boiling Light-Water-Cooled and Moderated Reactor	94	3		21	9
FBR	Fast Breeder Reactor	2	2	1	6	
GCR	Gas-Cooled, Graphite-Moderated Reactor	18			34	
HTGR	High-Temperature Gas-Cooled, Graphite-Moderated Reactor				4	
HWGCR	Heavy-Water-Moderated, Gas-Cooled Reactor				3	
HWLWR	Heavy-Water-Moderated, Boiling Light-Water-Cooled Reactor				2	
LWGR	Light-Water-Cooled, Graphite-Moderated Reactor	16	1		8	
PHWR	Pressurized Heavy-Water-Moderated and Cooled Reactor	44	4	4	5	
PWR	Pressurized Light-Water-Moderated and Cooled Reactor	264	34		34	38
SGHWR	Steam-Generating Heavy-Water Reactor				1	
X	Others				2	
TOTAL		438	44	5	120	47

TABLE 24. OPERATORS - Abbreviations and Summary

Operator Code	Full Name	Number of Reactors, as of 31 Dec. 2008			
		Operational	Construction	LT Shut Down	Shut Down Planned
AEC/NPPD	HALLAM NUCLEAR POWER FACILITY				1
ALP	ALABAMA POWER CO.	2			
AMERGEN	AMERGEN ENERGY CO.	1			
AMERGENE	AMERGEN ENERGY GENERATING CO.	3			
ANAV	ASOCIACION NUCLEAR ASCO-VANDELLOS A.I.E. (ENDESAMD)	3			
ANPP/JSC	JOINT STOCK COMPANY ARMENIAN NPP	1			1
AVR	ARBEITSGEMEINSCHAFT VERSUCHSREAKTOR GMBH	1			1
AZPSCO	ARIZONA PUBLIC SERVICE CO.	3			
BE	BRITISH ENERGY	15			
BHAVINI	BHARATIYA NABHIKIYA VIDYUT NIGAM LIMITED		1		
BKAB	BARSEBÄCK KRAFT AB				3
BKW	BKW ENERIE AG	1			
BRUCEPOW	BRUCE POWER	6		2	
BV GKN	BV GEMEENSCHAPPELIJKE KERNENERGIECENTRALE NEDERLAND (BV GKN)				1
CCNPP	CALVERT CLIFFS NUCLEAR POWER PLANT INC.	3			
CEA/EDF	COMMISSARIAT À L'ENERGIE ATOMIQUE (80%)ELECTRICITÉ DE FRANCE (20%)	1			
CEN/SCK	CENTRE D'ETUDE DE L'ENERGIE NUCLEAIRE /STUDIECENTRUM VOOR KERNENERGIE	6			1
CEZ	CZECH POWER COMPANY , CEZ A.S.	2			
CFE	COMISION FEDERAL DE ELECTRICIDAD	5			
CHUBU	CHUBU ELECTRIC POWER CO.,INC.	2			
CHUGOKU	THE CHUGOKU ELECTRIC POWER CO.,INC.	2			2
CNAT	CENTRALES NUCLEARES ALMARAZ-TRILLO(IDIUGI/ENDES/HC/NUCLENOR)	3	1		
CofPiqua	CITY OF PIQUA GOVERNMENT	2			
COGEMA	COMPAGNIE GENERALE DES MATIERES NUCLEAIRES	1			1
CONSENEC	CONSUMERS ENERGY CO.	1			2
CPC	CONSUMERS POWER CO.				1
CVPA	CAROLINAS-VIRGINIA NUCLEAR POWER ASSOC.				1
CYAPC	CONNECTICUT YANKEE ATOMIC POWER CO.				1
DETED	DETROIT EDISON CO.	1			1
DOE DUQU	DEPARTMENT OF ENERGY AND DUGUESNE LIGHT CO.				1

TABLE 24. OPERATORS - Abbreviations and Summary — continued

Operator Code	Full Name	Number of Reactors, as of 31 Dec. 2008			
		Operational	Construction	LT Shut Down	Shut Down
DOE/PRWR	DOE & PUERTO RICO WATER RESOURCES				1
DOMENGY	DOMINION ENERGY KEWAUNEE	1			
DOMIN	DOMINION VIRGINIA POWER	2			1
DPC	DAIRYLAND POWER COOPERATIVE				1
DUKE	DUKE POWER CO.	7			
E.ON	E.ON KERNKRAFT GMBH	5			1
EA	JSC CONCERN ENERGOATOM	31	8		4
EDF	ELECTRICITE DE FRANCE	58	1		8
ELECTRAB	ELECTRABEL M. V. NUCLEAIRE PRODUKTIE	7			
ELETRONU	ELETRONBRAS TERMONUCLEAR SA - ELETRONUCLEAR	2			1
EnBW	ENBW KRAFTWERKE AG				1
ENERGYNW	ENERGY NORTHWEST	1			
EnKk	ENBW KERNKRAFT GMBH(SITZ IN OBRIGHEIM)	4			
ENERGY	ENERGY NUCLEAR	8			1
ENTGARKS	ENERGY ARKANSAS, INC.	1			
ENTGS	ENERGY GULF STATES INC.	1			
EPZ	N.V. ELEKTRICITEITS-PRODUKTIEMAATSCHAPPIJ ZUID-NEDERLAND	1			
ESKOM	ESKOM	2			
EWN	ENERGIEWERKE NORD GMBH				6
EXELON	EXELON GENERATION	14			4
FENOC	FIRST ENERGY NUCLEAR OPERATING CO.	4			
FKA	FORSMARK KRAFTGRUPP AB	3			
FORTUMPH	FORTUM POWER AND HEAT OY (FORMER IVO)	2			
FPL	FLORIDA POWER & LIGHT CO.	5			
FPLDUJANE	FPL ENERGY DUANE ARNOLD	1			
Fujing	FUJING NUCLEAR POWER LIMITED COMPANY		1		1
GE	GENERAL ELECTRIC				
GNP/JVC	GUANDONG NUCLEAR POWER JOINT VENTURE COMPANY LIMITED(GNPJVC)	2			1
GPU	GENERAL PUBLIC UTILITIES				
HDR	HEISSDAMPREAKTOR-BETRIEBSGESELLSCHAFT MBH.				1
HEPCO	HOKKAIDO ELECTRIC POWER CO.,INC.	2	1		1

TABLE 24. OPERATORS - Abbreviations and Summary — continued

Operator Code	Full Name	Number of Reactors, as of 31 Dec. 2008			
		Operational	Construction	LT Shut Down	Shut Down
HIFRENSA	HISPAÑO-FRANCESA DE ENERGIA NUCLEAR, S.A.				1
HKG	HOCHTEMPERATUR-KERNKRAFTWERK GMBH				1
HOKURIKU	HOKURIKU ELECTRIC POWER CO.	2			
HONGYANH	HONGYANHE NUCLEAR POWER COMPANY				1
HQ	HYDRO QUEBEC	1			1
ID	IBERDROLA, S.A.	1			
IMPCO	INDIANA MICHIGAN POWER CO.	2			
INPP	IGNALINA NUCLEAR POWER PLANT	1			1
J-POWER	ELECTRIC POWER DEVELOPMENT CO.,LTD.				1
JAEA	JAPAN ATOMIC ENERGY AGENCY				1
JAPCO	JAPAN ATOMIC POWER CO.	3	1		2
JAVYS	JADROVA A VYRADOVACIA SPOLOCNOST/NUCLEAR AND DECOMMISSIONING COMPANY, PLC./				3
JNPC	JIANGSU NUCLEAR POWER CORPORATION	2			
KBG	KERNKRAFTWERK-BETRIEBSGESELLSCHAFT MBH				2
KEPCO	KANSAI ELECTRIC POWER CO.	11			
KGB	KERNKRAFTWERKE GUNDREMMINGEN BETRIEBSGESELLSCHAFT MBH				1
KGECO	KANSAS GAS AND ELECTRIC CO.	1			
KGK	KERNKRAFTWERK GUNDREMMINGEN GMBH	2			1
KHNP	KOREA HYDRO AND NUCLEAR POWER CO.	20			
KB	KERNKRAFTWERK BRUNSBÜTTEL GMBH	1	5		3
KKG	KERNKRAFTWERK GOESGEN-DAENIKEN AG	1			
KKK	KERNKRAFTWERK KRÜMMEL GMBH & CO. OHG	1			
KKL	KERNKRAFTWERK LEIBSTADT	1			
KKN	KERNKRAFTWERK NIEDERAICHBACH GMBH	1			1
KLE	KERNKRAFTWERKE LIPPE-EMS GMBH	1			
KOZNPP	KOZLODUIY NPP-PLC	2			4
KWG	GEMEINSCHAFTSKERNKRAFTWERK GROHNDE GMBH & CO. OHG	1	2		
KWL	KERNKRAFTWERK LINGEN GMBH	1			
KYUSHU	KYUSHU ELECTRIC POWER CO.,INC.	6			1
LANPC	LINGAO NUCLEAR POWER COMPANY LTD.				
LDNPC	LINGDONG NUCLEAR POWER COMPANY LTD.	2	2		

TABLE 24. OPERATORS - Abbreviations and Summary — continued

Operator Code	Full Name	Number of Reactors, as of 31 Dec. 2008		
		Operational	Construction	Planned
LHNPC	LIAONING HONGYANHE NUCLEAR POWER CO. LTD. (LHNPC)		2	
LIPA	LONG ISLAND POWER AUTHORITY			1
MAEC-KAZ	MANGISHLAK ATOMIC ENERGY COMPLEX-KAZATOMPROM,LIMITED LIABILITY COMPANY			1
MEL	MAGNOX ELECTRIC LIMITED	4		22
MSM	MINISTRY OF MEDIUM MACHINE BUILDING OF THE USSR (MINSREDMASH)			5
MTE	MINTOPENERGO OF UKRAINE - MINISTRY OF FUEL AND ENERGY OF UKRAINE			4
MYAPC	MAINE YANKEE ATOMIC POWER CO.			1
NASA	NUCLEOELECTRICA ARGENTINA S.A.	2	1	
NBEPIC	NEW BRUNSWICK ELECTRIC POWER COMMISSION	1		
NDNPC	NINGDE NUCLEAR POWER COMPANY L.TD.	2		
NEK	NUKLERANA ELEKTRARNA KRSKO	1		
NMPSLLC	NINE MILE POINT NUCLEAR STATION, LLC	2		
NNEGC	NATIONAL NUCLEAR ENERGY GENERATING COMPANY <ENERGOATOM>	15	2	
NOK	NORDOSTSCHWEIZERISCHE KRAFTWERKE	2		
NORTHERN	NORTHERN STATES POWER CO.	2		
NPCL	NUCLEAR POWER CORPORATION OF INDIA LTD.	17	5	
NPPD	NEBRASKA PUBLIC POWER DISTRICT	1		
NPPDCO	NUCLEAR POWER PRODUCTION & DEVELOPEMENT CO. OF IRAN	2	1	3
NPQJVC	NUCLEAR POWER PLANT QINSHAN JOINT VENTURE COMPANY L.TD.	2	2	
NUCLENOR	NUCLENOR, S.A.	1		
NUCMAN	NUCLEAR MANAGEMENT CO.	1		1
OH	ONTARIO HYDRO			2
OKG	OKG AKTIEBOLAG	3		
OPG	ONTARIO POWER GENERATION	10		
OPPD	OMAHA PUBLIC POWER DISTRICT	1	2	
PAEC	PAKISTAN ATOMIC ENERGY COMMISSION	2	1	
PAKS Zt	PAKS NUCLEAR POWER PLANT LTD	4		
PE	PREUSSELEKTRA KERNKRAFT GMBH&CO KG			1
PGE	PACIFIC GAS & ELECTRIC CO.	2		1
PORTGE	PORTLAND GENERAL ELECTRIC CO.			1
PP&L	PENNSYLVANIA POWER & LIGHT CO.	2		

TABLE 24. OPERATORS - Abbreviations and Summary — continued

Operator Code	Full Name	Number of Reactors, as of 31 Dec. 2008			
		Operational	Construction	LT Shut Down	Shut Down
PROGENGC	PROGRESS ENERGY CAROLINAS, INC.	3			
PROGRESS	PROGRESS ENERGY CORPORATION	2			
PSCC	PUBLIC SERVICE CO. OF COLORADO	1			1
PSEG	PUBLIC SERVICE ELECTRIC & GAS CO.	2			
PSEGPOWER	PSEG POWER, INC.	1			
QNPC	QINSHAN NUCLEAR POWER COMPANY	1	1		
RAB	RINGHALS AB	4			
RCPA	RURAL COOPERATIVE POWER ASSOC.				1
RWE	RWE POWER AG	2			
SCE	SOUTHERN CALIFORNIA EDISON	2			
SCEG	SOUTH CAROLINA ELECTRIC & GAS CO.	1			1
SE, pic	SLOVENSKE ELEKTRARNE, A. S.	4			
SENA	SOCIETE D'ENERGIE NUCLEAIRE FRANCO-BELGE DES ARDENNES				1
SHIKOKU	SHIKOKU ELECTRIC POWER CO., INC	3			
SMUD	SACRAMENTO MUNICIPAL UTILITY DISTRICT				1
SNEC	SAXTON NUCLEAR EXPERIMENTAL REACTOR CORPORATION				1
SNN	SOCIETATEA NATIONALA NUCLEARELECTRICA S. A.	2			
SNPC	SHANDONG NUCLEAR POWER COMPANY LTD				1
SOGIN	SOCIETA GESTIONE IMPANTI NUCLEARI S.P.A.				4
SOUTH	SOUTHERN NUCLEAR OPERATING CO.	4			
STP	STP NUCLEAR OPERATING CO.	2			
TEAS	TEAS	17			1
TEPCO	TOKYO ELECTRIC POWER CO., INC.	4			4
TOHOKU	TOHOKU ELECTRIC POWER CO., INC	4			2
TPC	TAI POWER CO.	6	2		
TQNPC	THE THIRD QINSHAN JOINTED VENTURE COMPANY LTDA.	2			
TVA	TENNESSEE VALLEY AUTHORITY	6	1		
TVO	TEOLLISUUDEN VOIMA OY	2	1		
TXU	TXU ELECTRIC CO.	2			
UFG	UNION FENOSA GENERATION S.A.				1
UKAEA	UNITED KINGDOM ATOMIC ENERGY AUTHORITY				4

TABLE 24. OPERATORS - Abbreviations and Summary — continued

Operator Code	Full Name	Number of Reactors, as of 31 Dec. 2008				
		Operational	Construction	LT Shut Down	Shut Down	Planned
VAK	VERSUCHSATOMKRAFTWERK KAHL GMBH				1	
VEPCO	VIRGINIA ELECTRIC POWER CO.	4				
WEP	WISCONSIN ELECTRIC POWER CO.	2				
YAEC	YANKEE ATOMIC ELECTRIC CO.				1	
YJNPC	YANGJIANG NUCLEAR POWER COMPANY		1			5
not specified						15
TOTAL		438	44	5	120	47

TABLE 25. NSSS SUPPLIERS - Abbreviations and Summary

NSSS Supplier Code	Full Name	Number of Reactors, as of 31 Dec. 2008			
		Operational	Construction	LTShut Down	Shut Down Planned
A1F/W	ASSOCIATION ACEC FRAMATOME ET WESTINGHOUSE.				
ABBATOM	ABBATOM (FORMERLY ASEA-ATOM)	7			1
AC	ALLIS CHALMERS				2
ACECOWEN	ACECOWEN (ACEC-COKERILL-WESTINGHOUSE)	4			3
ACLF	(ACECOWEN - CREUSOT LOIRE - FRAMATOME)	1			
AECL	ATOMIC ENERGY OF CANADA LTD.	8			2
AECU/DAE	ATOMIC ENERGY OF CANADA LTDA 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 09URL: WWW.AREVA.COM		2		
ASE	ATOMSTROYEXPORT		5		
ASEASTAL	ASEA-ATOM / STAL-LAVAL	2			1
ASPALDO	ASPALDO				1
AIEE	ATOMENERGOEXPORT				1
B&W	BABCOCK & WILCOX CO.	7			6
BBC	BROWN BOVERI ET CIE	1			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			1
CNNC	CHINA NATIONAL NUCLEAR CORPORATION	4			3
DFEC	DONGFANG ELECTRIC CORPORATION				9
DHICKAEC	DOOSAN HEAVY INDUSTRIES & CONSTRUCTION CO.LTD./KOREA ATOMIC ENERGY RESEARCH I	2			8

TABLE 25. NSSS SUPPLIERS - Abbreviations and Summary — continued

NSSS Supplier Code	Full Name	Number of Reactors, as of 31 Dec. 2008			
		Operational	Construction	L T Shut Down	Shut Down Planned
DHICKOPC	DOOSAN HEAVY INDUSTRIES & CONSTRUCTION CO.LTD./KOREA POWER ENGINEERING COMPA	6	5		3
EE/B&WT	THE ENGLISH ELECTRIC CO. LTD./BABCOK & WILCOX CO./ TAYLOR WOODROW CONSTRU	2			4
EL/WEST	ELETRONUCLEARE ITALIANA / WESTINGHOUSE ELECTRIC CORP.				1
FAEA	FEDERAL ATOMIC ENERGY AGENCY	32			5
FRAM	FRAMATOMIE	64			3
FRAMACEC	FRAMACECO (FRAMATOMIE-ACEC-COCKERILL)	2			2
GA	GENERAL ATOMIC CORP				1
GA4A	GROUPEMENT ATOMIQUE ALSACIENNE ATLANTIQUE				1
GE	GENERAL ELECTRIC CO.	47	2		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.	2			
GNEPRWRA	GENERAL NUCLEAR ENGINEERING & PUERTO RICO WATER RESOURCES AUTHORITY (US)				1
GTM	GRANDS TRAVAUX DE MARSEILLE				1
HITACHI	HITACHI LTD.	10	1		1
HRB	HOCHTEMPERATUR-REAKTORBAU GMBH				1
IA	INTERNATOM INTERNATIONALE ATOMREAKTORBAU GMBH				1
ICL/FE	INTERNATIONAL COMBUSTION LTD. / FAIREY ENGINEERING LTD.				1
IZ	IZ HORSKIYE ZAVODY	2			
KWU	SIEMENS KRAFTWERK UNION AG	20			1
LEVIVIER	LEVIVIER				2
MAEC-KAZ	MAEC-KAZATOMPROMMANGISHLAK ATOMIC ENERGY COMPLEX-KAZATOMPROM.LIMITED LIABLI				1
MAEP	MINATOMENERGOPROM. MINISTRY OF NUCLEAR POWER AND INDUSTRY	1	2		1
MHI	MIJUBISHI HEAVY INDUSTRIES LTD.	19	1		1
MSM	MINISTRY OF MEDIUM MACHINE BUILDING OF THE USSR (MINSREDMASH)				5
NEI/P	NEI/PARSONS	2			
NCC	NATIONAL NUCLEAR CORPORATION	2			
NPC	NUCLEAR POWER CO. LTD.	6			
NPCIL	NUCLEAR POWER CORPORATION OF INDIA LTD.VIKRAM SARABHAI BHAVAN, ANUSHAKTINAG	13	3		

TABLE 25. NSSS SUPPLIERS - Abbreviations and Summary — continued

NSSS Supplier Code	Full Name	Number of Reactors, as of 31 Dec. 2008				
		Operational	Construction	LTShut Down	Shut Down	Planned
OH/AECL	ONTARIO HYDRO / ATOMIC ENERGY OF CANADA LTD.	14		4		
PAA	PRODUCTION AMALGAMATION 'ATOMMASH', VOLGODONSK	4				
PAIP	PRODUCTION AMALGAMATION IZHORSKY PLANT ATOMMASH, VOLGODONSK, RUSSIA	11				
PPC	PWR POWER PROJECTS	1			1	
RDM	ROTTERDAMSE DROOGDOK MAATSCHAPPIJ (RDM) IN ROTTERDAM (NL)					4
ROSATOM	STATE ATOMIC ENERGY CORPORATION ROSATOM		8			
SKWUJ	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		1	
SKODA	SKODA CONCERN NUCLEAR POWER PLANT WORKS	10			1	
T/H/F/M	TOSHIBA / HITACHI / FUJI ELECTRIC HOLDINGS / MITSUBISHI HEAVY INDUSTRIES			1		
TNPG	THE NUCLEAR POWER GROUP LTD.	6				8
TOSHIBA	TOSHIBA CORPORATION	17				
UEC	UNITED ENGINEERS AND CONTRACTORS					1
UKAEA	UNITED KINGDOM ATOMIC ENERGY AUTHORITY					10
WH	WESTINGHOUSE ELECTRIC CORPORATION AND SIEMENS	71	1		10	2
WH/IMHI	WESTINGHOUSE ELECTRIC CORPORATION / MITSUBISHI HEAVY INDUSTRIES LTD.	1				2
not specified			1			25
TOTAL		438	44	5	120	47

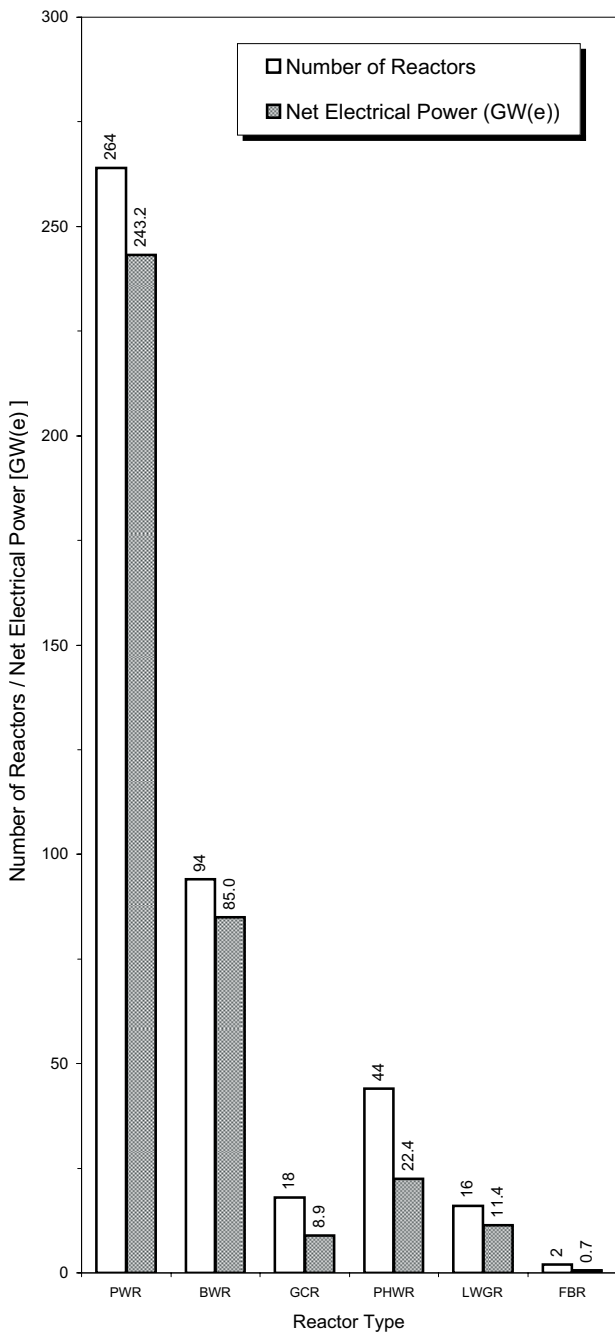


Figure 1. Nuclear reactors by type and net electrical power (as of 31 Dec. 2008)

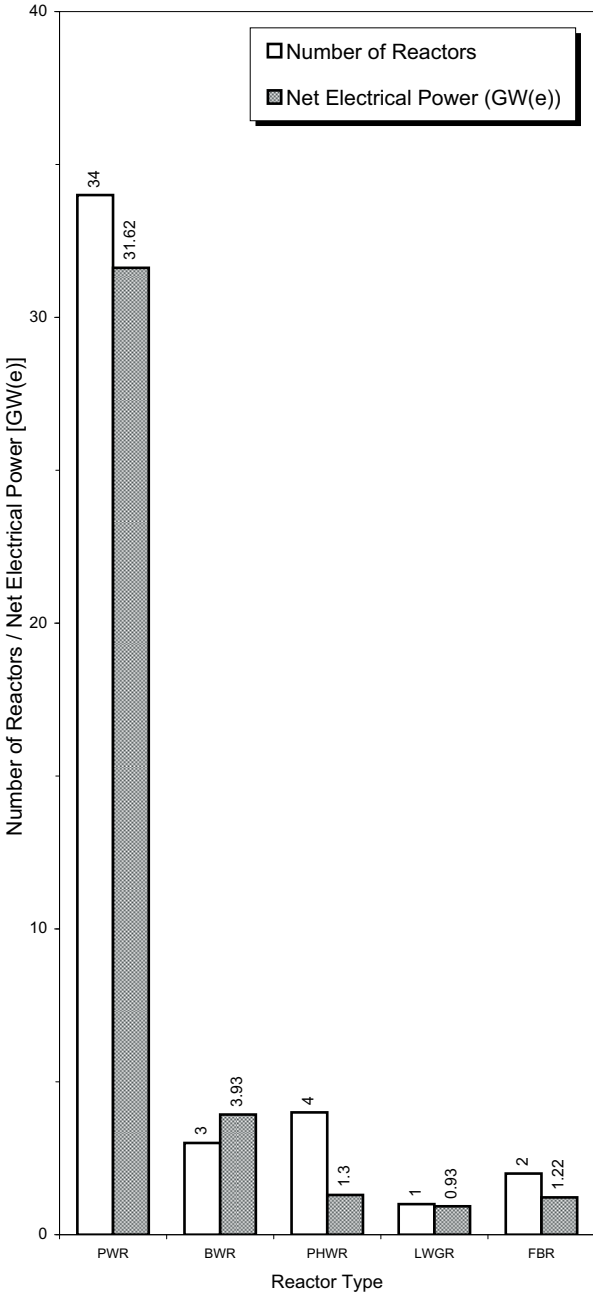


Figure 2. Reactors under construction by type and net electrical power (as of 31 Dec. 2008)

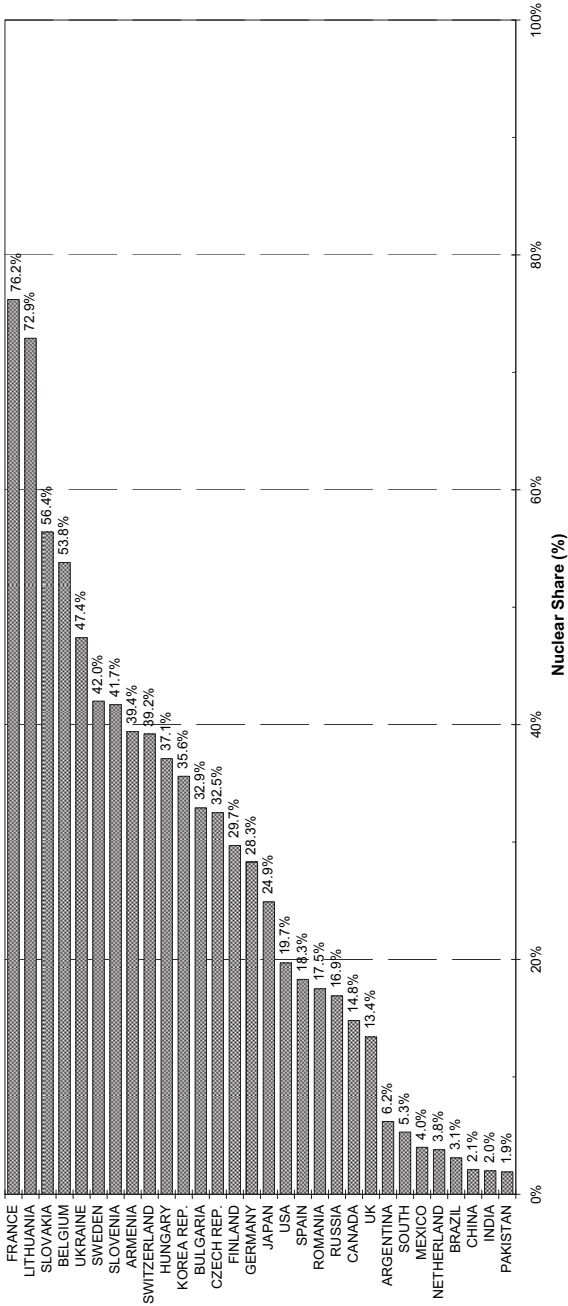


Figure 3. Nuclear share of electricity generation (as of 31 Dec. 2008)

Note: The nuclear share of electricity supplied in Taiwan, China was 19.6% of the total.

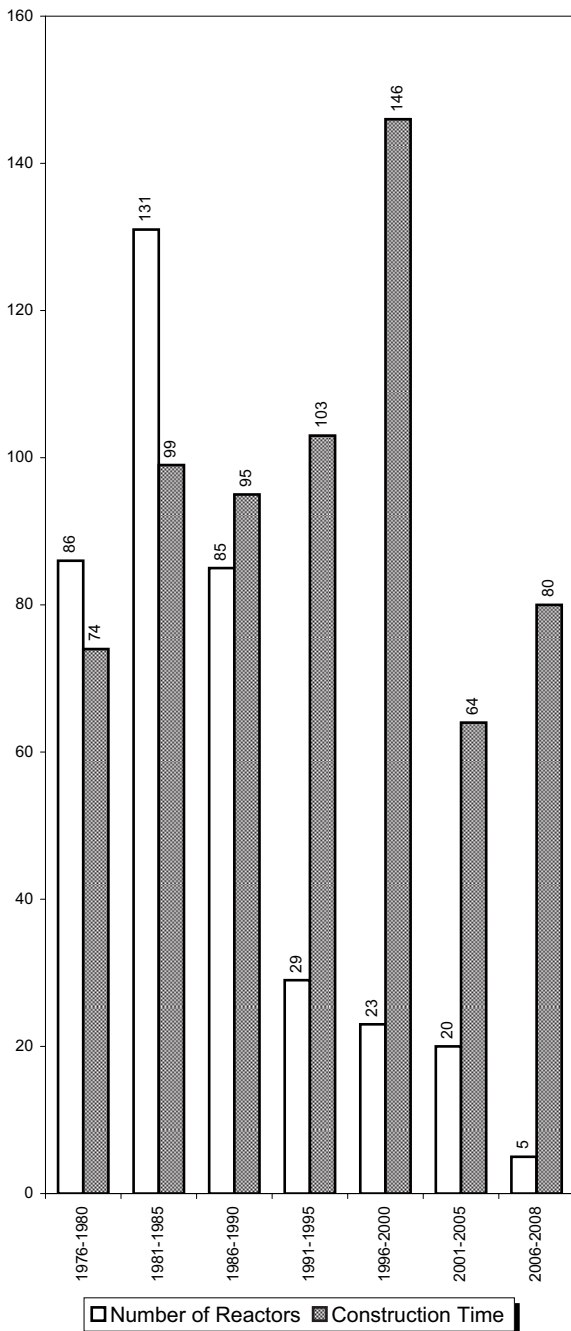


Figure 4. Worldwide median construction time span (as of 31 Dec. 2008)

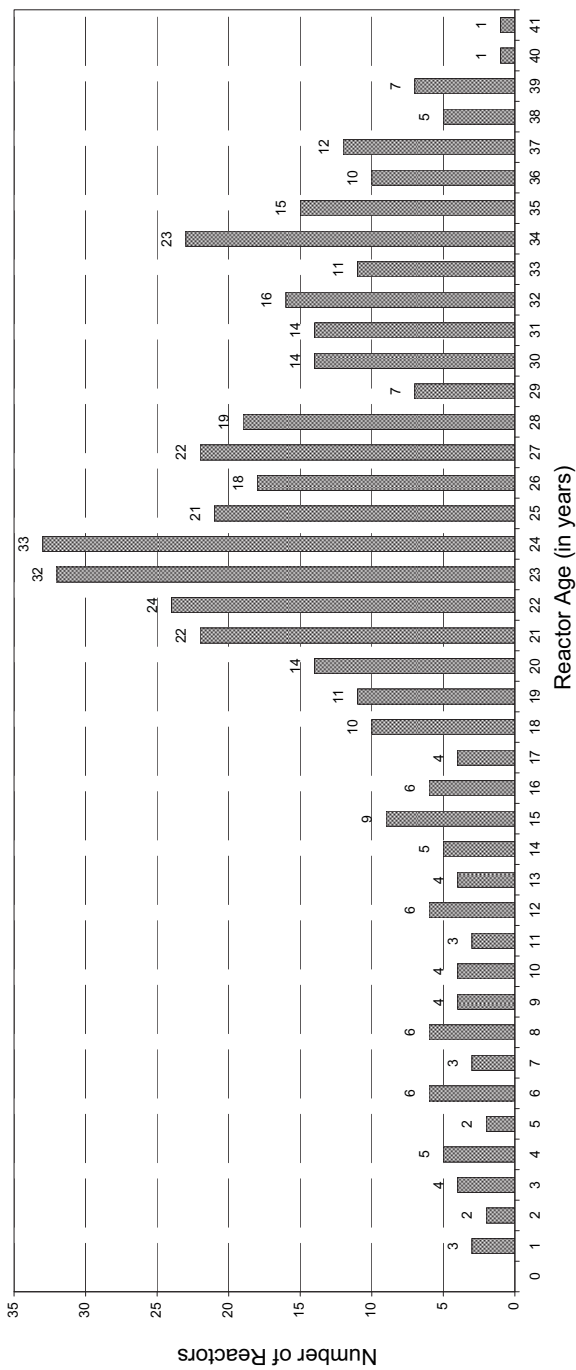


Figure 5. Number of reactors in operation by age (as of 31 Dec. 2008)

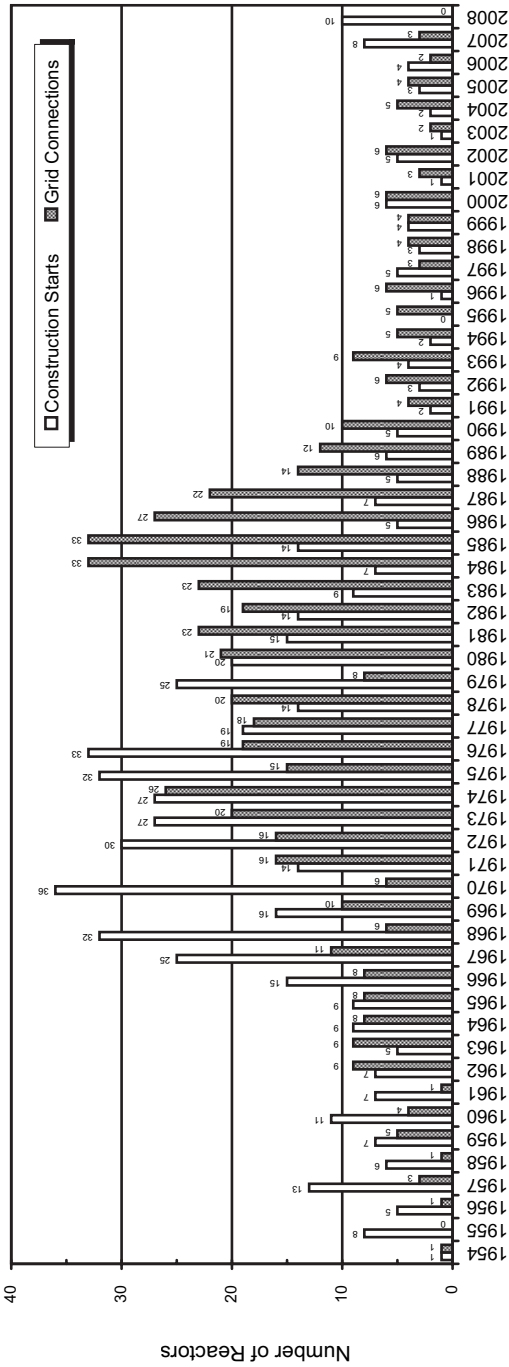


Figure 6. Annual construction starts and connections to the Grid (1954 — 2008)

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