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WH-1070

A McGraw-Hill publication Two dollars January 1973

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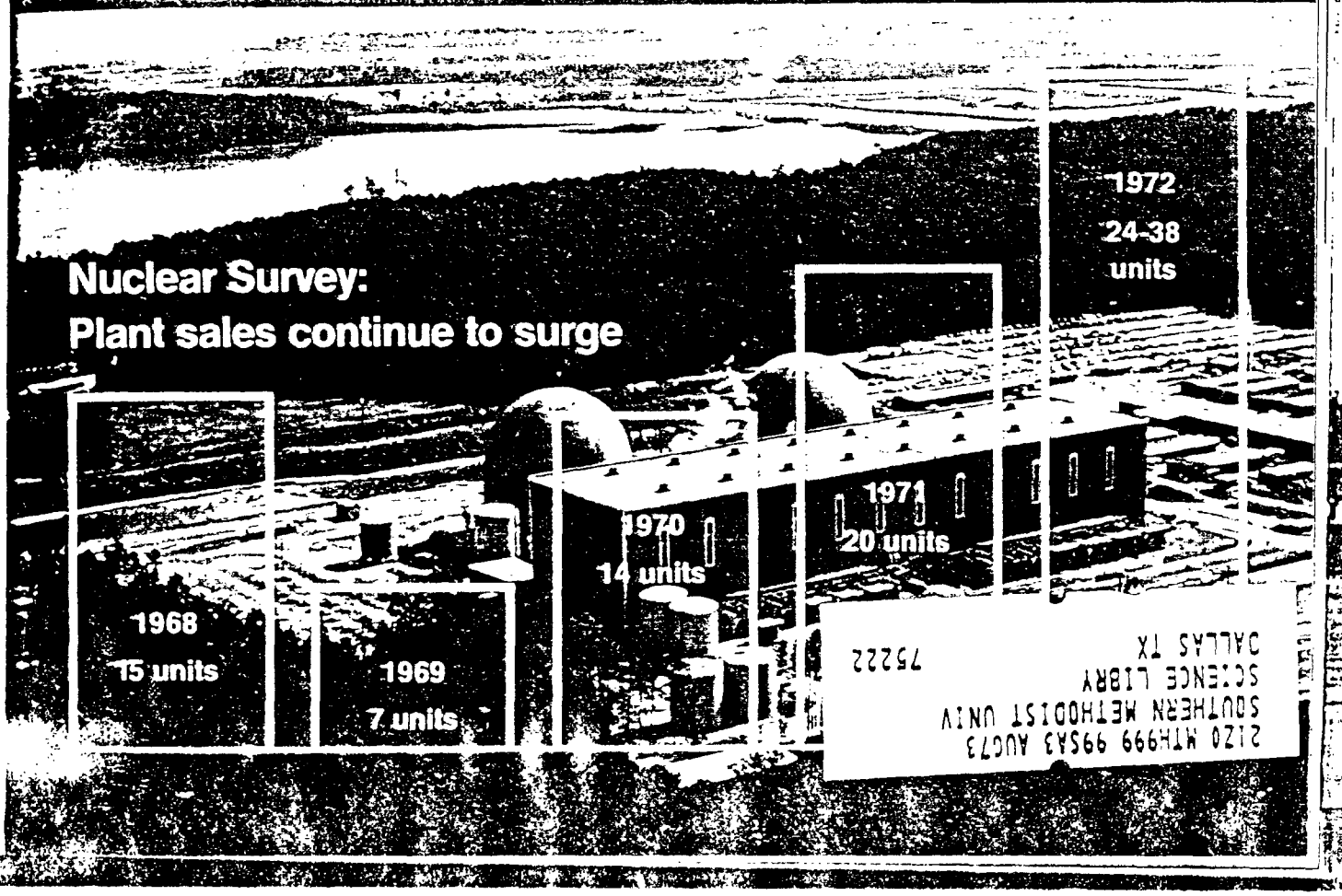

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Nuclear Survey: 1972 looms as biggest year

By Sheldon D Strauss, Managing Editor

At the time that our last survey was being organized (POWER, January 1971, p 49), the nuclear industry was bogged down in issues concerning radiological releases and thermal pollution, as embodied in the famous Calvert Cliffs and Monticello cases. These issues have long since been resolved, but others have taken their places. Most prominent has been the matter of emergency core cooling systems (ECCS). Under study by AEC since small-scale tests were held in 1970, the subject assumed proportions of a real technological controversy in May of the following year, precipitating a full-scale investigation on the highest level.

Although interim criteria have been issued, it is still under intensive discussion—and a strong bone of contention for the so-called 'environmental' groups. Only last November, at the annual joint meeting of American Nuclear Society and Atomic Industrial Forum, a leading spokesman for the opposition called on AEC to halt issuance of licenses for all nuclear plants pending agreement on the capability of ECC systems in safeguarding reactors.

Nevertheless, the industry has been enjoying a very busy year, with good prospects for continuation of this outlook through 1973. Into November, U S utilities had placed 'firm' orders for 24 units representing 25,350 MW combined capacity. Then Baltimore Gas & Electric Co canceled plans for two nuclear units at Perryman, but Florida Power & Light Corp reactivated its plans for Hutchinson Island 2, and Washington Public Power Supply System ordered a replacement for the reactor at Hanford. Thus, at this writing, nuclear orders account for 24 units which will be placing some 25,000 new megawatts on-line between 1978 and 1982.

As the cover chart indicates, orders for another dozen of so units were anticipated before the end of the year. If these materialize, they would raise the totals to something like 40 units and 40,000 MW—far and away the biggest year ever. (Compare it to the previous high, 30 units for 27,000 MW in 1967.)

Tabulated on the following four pages, you will find the salient design data for nuclear plants larger than 100 MW, under construction or on order in this country as of December 1, 1972. Tables at left summarize those units for which significant engineering information is unavailable (generally those newly ordered) and the 22 units already in operation. Taken together, the three listings give a complete view of the nuclear picture in the U S at this time.

Too early for design data on these 1972 orders

Company	Plant	Gross MW[1]	Reactor type	Reactor mfr	First operation
Detroit Edison Co	Greenwood 1, 2	1230	PWR	BW	1979,81
Washington Pub Power Sup Syst	Hanford 3	1200	PWR	BW	1980
Boston Edison Co	Pilgrim 2	1150	PWR	CE	1978
Public Service Electric & Gas Co	Atlantic 1, 2	1150	PWR	WE	1980,81
[illegible]e Power Co	Catawba 1, 2	1150	PWR	WE	1979,80
[illegible]s Utilities Co[2]	Comanche Peak 1, 2	1150	PWR	WE	1980,82
[illegible]ic Service of New Hampshire	Seabrook 1, 2	1100	PWR	WE	1979,80
[illegible]mac Electric Co	Douglas Pt 1, 2	1100	BWR	GE	1980
[illegible]mmonwealth Edison Co	Two units[3]	1100	PWR	WE	1980,81
Gulf States Utilities Co	Riverbend 1	940	BWR	GE	1979
Virginia Electric and Power Co	Two units[3]	900	PWR	BW	1980,81
Florida Power & Light Co	St Lucie 2[4]	890	PWR	CE	1979
Southern California Edison Co	Two units[3]	770	HTGR	GGA	1981

[1] Capacity of each unit [2] Plant to serve Dallas Power & Light Co and Texas Power & Light Co [3] Station not yet identified
[4] Reactivation of plant formerly known as Hutchinson Island 2

The list of operating nuclear plants is growing

Plant	Company	Gross MW	Reactor type	Reactor mfr	First operation
Hanford 1	Washington Pub Power Supply Syst*	862	PWR	AEC	1966
Dresden 3	Commonwealth Edison Co	850	BWR	GE	1971
Quad Cities 1	Commonwealth Edison Co	850	BWR	GE	1972
Quad Cities 2	Commonwealth Edison Co	850	BWR	GE	1972
Dresden 2	Commonwealth Edison Co	809	BWR	GE	1971
H B Robinson 2	Carolina Power & Light Co	760	PWR	WE	197[illegible]
Palisades	Consumers Power Co	722	PWR	CE	1971
Millstone 1	Millstone Point Co	650	BWR	GE	1970
Conn Yankee	Connecticut Yankee Atomic Power Co	590	PWR	WE	1967
Haddam Neck 1	Connecticut Yankee Atomic Power Co	590	PWR	WE	1968
Monticello	Northern States Power Co	569	BWR	GE	1971
Oyster Creek	Jersey Central Power & Light Co	540	BWR	GE	1969
Vermont Yankee	Vermont Yankee Nuclear Power Corp	540	PWR	GE	1970
Nine Mile Pt	Niagara Mohawk Power Corp	525	BWR	GE	1969
Pt Beach 1	Wisconsin Electric Power Co**	524	PWR	WE	1970
Pt Beach 2	Wisconsin Electric Power Co**	524	PWR	WE	1972
Surry 1	Virginia Electric and Power Co	524	PWR	WE	1971
Robert E Ginna	Rochester Gas & Electric Corp	470	PWR	WE	1970
San Onofre 1	Southern California Edison Co	450	PWR	WE	1968
[illegible]ian Pt 1	Consolidated Edison Co	285	PWR	BW	1962
[illegible]esden 1	Commonwealth Edison Co	200	BWR	GE	1959
Yankee (Rowe)	Yankee Atomic Electric Co	185	PWR	WE	1961

* Reactor owned by U S AEC ** Co-owner Wisconsin-Michigan Power Co

Ref.	PLANT OWNER	PLANT NAME	LOCATION	CONSULTING ENGINEER	Unit number	Date of commercial operation	Initial net capacity, MW	Initial gross capacity, MW	Ultimate gross capacity, MW
	Mississippi Power & Light Co	Grand Gulf	Port Gibson, MI	Bechtel Corp	1	12/78	1290	1324	
2	Duke Power Co	McGuire	Mount Holly, NC	Self	1,2	76,77	1181	1220	1291
3	Tennessee Valley Auth	X-14, X-15		Self		7/77,4/78	1175	1224	1332
4	Tennessee Valley Auth	Watts Bar	Rhea County, TN	Self	1,2	5/77,2/78	1169	1218	1270
5	Tennessee Valley Auth	Sequoyah	Vic of Chattanooga, TN	Self	1,2	11/74,7/75	1140	1183	1221
6	Southern California Edison Co	San Onofre	San Onofre, CA	Bechtel Corp	2,3	4/78,4/79	1140	1175	1175
7	Portland General Electric Co	Trojan	Prescott, OR	Bechtel Corp	1	9/74	1130	1178	1178
8	Pacific Gas and Electric Co	Mendocino	Mendocino County, CA	Bechtel Corp	1,2	5/78,6/79	1130	1168	1168
9	Louisiana Power & Light Co	Waterford	Taft, LA	Ebasco Services Inc	3	1/77	1113	1153	1200
10	Detroit Edison Co	Enrico Fermi	Monroe, MI		2,3[3]	4/76,..	1113	1205	
11	Georgia Power Co	Vogtle	Hancock Landing, GA	Bechtel Corp	1,2	79,80	1100	1167	
12	Niagara Mohawk Power Corp	Nine Mile Point	Oswego County, NY	Stone & Webster Engrg Corp	2	7/78	1100	1160	1160
13	Washington Public Power Supply System	Hanford	Richland, WA	Burns and Roe, Inc	2	9/77	1100	1150	1150
14	Public Service Electric & Gas Co[27]	Salem	Lower Allowavs Creek Twp, NJ	Self	1,2	10/74,5/75	1090	1132	1176
15	Pacific Gas and Electric Co	Diablo Canyon	San Luis Obispo, CA	Self	1,2	3/75,3/76	1083	1136	1136
16	Commonwealth Edison Co	LaSalle	LaSalle, IL	Sargent & Lundy	1,2	12/77,9/78	1078	1122	1122
17	Jersey Central Power & Light Co	Forked River	Lacey Twp, NJ	Burns and Roe Inc	1	5/78	1070	1123	1174
18	Public Service Electric & Gas Co	Newbold Island	Bordentown Twp, NJ	Self	1,2	5/78,5/79	1067	1118	
19	Public Service Electric & Gas Co[27]	Peach Bottom	York County, PA	Bechtel Corp	2,3	5/72,3/73	1065	1098	1152
20	Tennessee Valley Auth	Browns Ferry	Limestone County, AL	Self	1,2,3	4/73,1/74,8/74	1065	1096	1152
21	Philadelphia Electric Co	Limerick	Montgomery County, PA	Bechtel Corp	1,2	3/75,3/77	1055	1090	1151
22	Indiana & Michigan Electric Co	Donald C Cook	Bridgman, MI	American Electric Power Service Corp	1,2	73?	1054	1089	1130
23	Commonwealth Edison Co	Zion	Zion, IL	Sargent & Lundy	1,2		1050	1085	
24	Pennsylvania Power & Light Co	Susquehanna	Salem Twp, PA	Bechtel Corp	1,2	5/79,5/81	1040	1085	1152
25	Arkansas Power & Light Co	Arkansas Nuclear One	Russellville, AR	Bechtel Corp	2	10/75	920	950	976
26	Jersey Central Power & Light Co	Three Mile Island	Dauphin County, PA	Burns & Roe Inc	2	5/75	905	959	959
27	South Carolina Electric & Gas Co	Summer	Jenkinsville, SC	Gilbert Associates, Inc	1	1/77	900	950	950
28	Carolina Power & Light Co	Harris	Bonsal, NC	Ebasco Services Inc	1-4	3/77-3/80	900	950	950
29	Sacramento Municipal Utility District	Rancho Seco	Sacramento City, CA	Bechtel Corp	1	10/73	883	928	366
30	Consolidated Edison Co of NY, Inc	Indian Point	Buchanan, NY		2,3		873		1062
31	Toledo Edison Co[43]	Davis Besse	Oak Harbor, OH	Bechtel Corp	1	12/74	872	906	906
32	Florida Power Corp	Crystal River	Crystal River, FL	Gilbert Associates, Inc	3	9/77	855	885	
33	Virginia Electric & Power	North Anna	Louisa County, VA	Stone & Webster Engrg Corp	1,2	74,75	952	892	927
34	Duquesne Light Co[44]	Beaver Valley	Shippingport, PA	Stone & Webster Engrg Corp	1,2	10/74	852	891	924
35	Duke Power Co	Oconee	Seneca, SC	Self and Bechtel Corp	1,2,3	73,73,74	847	883	923
36	Virginia Electric & Power Co	North Anna	Louisa County, VA	Stone & Webster Engrg Corp	3,4	6/78,	845		
37	Millstone Point Co	Millstone	Waterford, CT	Bechtel Corp	2	4/74	330	860	
38	Alabama Power Co	Farley	Vic of Dothan, AL	Southern Services, Inc and Bechtel Corp	1,2	4/75,4/77	829	861	898
39	Power Auth of the State of NY	FitzPatrick	Scriba, NY	Stone & Webster Engrg Corp	1	10/73	821	850	883
40	Carolina Power & Light Co	Brunswick	Southport, NC	United Engineers & Constructors, Inc	1,2	3/75,3/74	821	847	847
41	Arkansas Power & Light Co	Arkansas Nuclear One	Russellville, AR	Bechtel Corp	1	8/73	820	880	880
42	Metropolitan Edison Co	Three Mile Island	Dauphin County, PA	Gilbert Associates, Inc	1	11/73	819	876	876
43	Consumers Power Co	Midland	Midland, MI	Bechtel Corp	2	5/78	816	855	887
44	Long Island Lighting Co	Shoreham	Brookhaven, NY	Stone & Webster Engrg Corp	1	5/77	813	844	878
45	The Cincinnati Gas & Electric Co[45]	Zimmer	Moscow, OH	Sargent & Lundy	1	10/76	810	840	840
46	Florida Power & Light Co	St Lucie	Hutchinson Island, FL	Ebasco Services, Inc	1,2	74,79	810	353	853
47	Baltimore Gas & Electric Co	Calvert Cliffs	Lusby, MD	Bechtel Corp	1,2	73,74	800	837	930
48	Maine Yankee Atomic Power Co	Main Yankee	Wiscasset, ME	Stone & Webster Engrg Corp	1	6/72	793	830	863
49	Georgia Power Co	Hatch	Baxley, GA	Southern Services, Inc, Bechtel Corp	1,2	74,75	786	813	849
50	Nebraska Public Power District	Cooper	Brownville, NE	Burns & Roe, Inc	1	7/73	778	801	836
51	Delmarva Power & Light Co				1,2	79,80		770	770
52	Florida Power & Light Co	Turkey Point	Biscayne Bay, FL	Bechtel Corp	3,4		688	760	760
53	Northern Indiana Public Service Co	Bailly	Dune Acres, IN	Sargent & Lundy	1	2/77	657	685	685
54	Boston Edison Co	Pilgrim	Plymouth, MA	Bechtel Corp	1	11/72	655	687	687
55	Puerto Rico Water Resources Auth	Aguirre	Central Aguirre, PR	Gibbs & Hill, Inc	1	1/76	583		
56	Northern States Power Co	Prairie Island	Red Wing, MN	Pioneer Service & Engrg Co	1,2	8/73,5/74	545	560	583
57	Wisconsin Public Service Corp[2]	Kewaunee	Kewaunee, WI	Pioneer Service & Engrg Co	1	4/73	540	582	582
58	Iowa Electric Light & Power Co	Duane Arnold	Palo, IA	Bechtel Corp	1	12/73	529	565	569
59	Consumers Power Co	Midland	Midland, MI	Bechtel Corp	1	5/77	491	526	552
60	Omaha Public Power District	Fort Calhoun	Fort Calhoun, NE	Gibbs, Hill, Durham & Richardson, Inc	1	6/73	455	481	508
61	Public Service Co of Colorado	Fort St Vrain	Platteville, CO	Gulf General Atomic Inc	1	72	330	342	

MANUFACTURERS

AC	Allis-Chalmers Mfg Co
ACL	Atomic Energy of Canada Ltd
AEC	Atomic Energy Commission
AEI	Associated Electrical Industries Ltd
AQC	Aqua-Chem, Inc
BB	Brown Boveri Corp
BG	I-T-E Bell and Gossett Hydronics
BJ	Byron Jackson Pumps, div of Borg Warner Corp
BLH	Baldwin-Hamilton
BM	Bailey Meter Co
BPC	Bingham Pump Co
BW	Babcock & Wilcox Co
BWL	Bingham-Willamette Co
BMN	Beckman Instruments, Inc
CAL	Calgon Corp
CDC	Control Data Corp
CE	Combustion Engineering, Inc
CEP	Controls of Environmental Pollution, Inc
CFC	California Filter Company
CGE	Canadian General Electric Co Ltd
CHU	Conu Corp
COC	Cochrane Div Crane Co
CPI	Computer Products, Inc
DGC	Degremont Cottrell, Inc
DL	De Laval Turbine Inc
DP	Diamond Power Specialty Corp
EE	English Electric Co Ltd
EIC	Enerline Instrument Corp
EC	Elliott Co (Carrier Corp)
EM	Electric Machinery Mfg Co
F	Foxboro Co
FIS	Fischer & Porter Co
FW	Foster Wheeler Corp
GE	General Electric Co
GEC	General Electric Co Ltd
GEL	German Instrument Co, Inc
GGA	Gulf General Atomic, Inc
GW	Graver Water Conditioning Co
H	Honeywell Inc
HOP	Howden Parsons, licensed by Air Preheater Co, Inc
HT	Hungerford & Terry, Inc
IBM	International Business Machines Corp
IN	Infilco Products Co
IR	Ingersoll-Rand Co
IW	Illinois Water Treatment Co
KSB	Klein, Schanzlin & Becker
LA	The Louis Allis Co, Inc
LAW	LA Water Treatment Div, Chromalloy American Co
LPE	Lapp Process Equipment, Interface Corp
MLW	MLW Worthington Ltd
MR	Milton Roy Co
MS	Maryland Shipbuilding & Drydock Co
NMC	Nuclear Measurements Corp
NMI	Neptune Microfloc, Inc
PM	The Permutit Co
PP	Pacific Pumps Div, Dresser Industries Inc
RI	Royal Industries, Inc
SEC	Sentry Equipment Corp

PROJECT	FUEL							TURBINES							CONDENSERS					FEEDWATER				COOLING WA	
	Chemical form	Physical form	Max burnup (equilibrium cycle), MW days/metric ton	Enrichment by zones, percent	Avg power density, kW/kg fuel	Avg heat flux (equilibrium cycle), 1000 Btu/hr/sq ft	Avg clad surf temp, F	Number per unit	Ultimate capacity each, MW	Type	Number of exhausts	Number of bleed points	Exhaust pressure, in Hg abs	Manufacturer	Surface area, 1000 sq ft	Number of water passes	Tube material	Air removal	Manufacturer	Makeup treatment	Manufacturer	Condensate treatment	Manufacturer	Source	Flow to cond/evap in winter, 1000 gpm
1	UO2	Pel			25.9	159.7		1		TC,1dr						1	SSt	J		De		De		Riv	
2	UO2	Pel	33,000	2.84,2.58,3.20	38.1[3]	217.2		1	1220	TC,1dr	6	7	1.7	WE	733	1	SSt	J	BLH	De	IW	N		Pon	640
3	UO2	Pel						1	1330	TC,1dr	6	8	1.8,2.9	BB	900	1		Ro		De		De		Riv	452[20]
4	UO2	Pel		2.25,2.80,3.30	39	217.2	557	1	1098	TC,1dr	6	7	2.0	WE	824	1			IR	De				Riv	
5	UO2	Pel		2.2,2.7,3.2	39.6	217	580	1	1183	TC,1dr	6	7	2	WE	672	1	Adl	Ro	IR	De	LAW	De	COC	Riv	522
6	UO2	Pel	33,000	1.9,2.3,2.9	35.7	205.1	617	1	1175	TC	6	6	1.5	GEC	681	1	CuN	J		FIE				Ocn	820
7	UO2	Pel	32,000	2.3,2.9,3.3	39.1	217.2	557	1	1220	TC,1dr	6	7	[14]	GE	966	[15]	Adl,CuN	J	WE	De	NMI,CFL	De		Riv	405
8	UO2	Pel	18,512	[13]	22.1	163.2	560	4	1168	TC	6	5	1.75	GE	534	1	CuN	J		FIE		De		Ocn	847
9	UO2	Pel	50,000	1.9,2.3,2.9	36	205		1	1207	TC	6	6	2.5	WE	775	1	SSt	Ro		De				Riv	355
10	UO2	Pel	29,900	1.10,2.50	22.5		560	1	1203	TC	6	4	1.5	EE	771	1	Adl	Ro,J	IR	De		Ion		Riv	
11	UO2	Pel	50,000	2.25,2.80,3.30	34.5	217.2	560	1	1167	TC,1dr	6	6	3.5	GE						De		De		Riv	
12	UO2	Pel	27,500		22.1	164.4	560	1	1156	TC	6	6	2.0	GE		1	SSt,Adl	J		De		De		Pon	503
13	UO2	Pel	30,000	1.10,2.50	22.1	163.2		1	1150	TC,1dr	6	7	2.5	WE	792	1	Ad,CuN	Ro,J	WE	De	CFL	Ion	GW	Riv	550
14	UO2	Pel	24,400	2.25,2.80,3.30	37.3[2]	213	557	1	1181	TC	6	6	1.5	WE	800	1	CuN	Ro	FW	De	COC			Bay	1100
15	UO2	Pel	50,000	2.2,2.7,3.2	34	207	720	1	1136	TC	6	6	1.5	WE	618	1	CuN	J	IR	FIE,De	AOC,CAL		LPE	Ocn	863
16	UO2	Pel	16,600	1.30	22	163	558	1	1122	TC	6	6	3.5	GE	950	1	SSt	J	WE	De		De		Pon	500
17	UO2	Pel	23,450	1.9,2.3,2.9	35.7	205	627	1	1250	TC,1dr	6	6	2.5	BB	350[9]	1	CuN	Ro	WE	De	LAW	De	LAW	Bay	700
18	UO2	Pel	20,000	2.00	22.1[2]	163	560	1	1166	TC,1dr	6	6	2.5	GE	830	2		J		De		De		Riv	552
19	UO2	Pel	19,000	2.19[31]	22.3	163		1	1152	TC,1dr	6	5	1.5	GE	790	1	Adl	J	IR	De	IW	Ion	GW	Riv	533
20	UO2	Pel		2.19	23	163.2	558	1	1152	TC,1dr	6	5	2	GE	666	1	Adl	Ro,J	FW	De	COC	Ion	GW	Riv	600
21	UO2	Pel	19,000	2.19[31]	22.3	163		1		TC,1dr	6	6	3.5	GE		3	Adl	J		De		Ion		Riv	
22	UO2	Pel	33,000	2.2,2.7,3.2	33	207		1	1130	TC,1dr	6	8	1.5	GE,BB	480[35]	1		J	WE,IR	De	PM			Pon	1510
23	UO2	Pel	33,000	2.2,2.7,3.2		207		1	1085	TC	6	8	1.5	WE	594	1	SSt	Ro,J	WE	De	N	N		Pon	
24	UO2	Pel	27,000	2.25	22.5	163	560	1	1172	TC,1dr	6	6	3.5	GE	880	1	SSt	Ro,J	IR	De		De,SF		Riv	
25	UO2	Pel	33,000	2.0,2.36,2.97	35.9	205	657	1	977	TC	4	7	1.6	GE	743	1	Ad	Ro	SWE	De	HT	N		Riv,Pon	405
26	UO2	Pel	31,700	2.29,2.64,2.90	33.8	168	654	1	959	TC	6		2.5	WE	610	1	SSt	Ro	IR	De	LAW	De	LAW	Riv	400
27	UO2	Pel		2.0,2.7,3.35	34.5	217	657	1	954	TC,1dr	4	7	2.2,3.1	GE	262	1	SSt	Ro	SWE	De				Pon	500
28	UO2	Pel	33,000	1.9,2.5,3.1		217		1	960	TC,1dr			2.5		690	1				De		De		Pon	
29	UO2	Pel	28,750	2.0,2.7,3.0	33.4	190	650	1	966	TC	4	6	2.5	WE	732	2	SSt	J	WE	De	COC	De	COC	Riv	446
30	UO2	Pel	33,000	3.2[31]	5.69[41]	176	716	1	1021	TC,1dr	6	6	1.5	WE	306	1	Ad	J	WE	FIE,De	WE	De		Riv	504
31	UO2	Pel	27,300	2.32,2.32,2.68	31.8	176		1	915	TC,1dr	4	6	1.5	GE				J				Ion		Pon	
32	UO2	Pel	27,000					1	885	TC	4	6	2	WE	596	1	CuN	Ro	FW	De,So	COC	De	GW	Ocn	680
33	UO2	Pel	31,500		11.2	208		1	927	TC,1dr	4	6		WE	596	1	SSt	J	IR	FIE,De	WE	SF		Riv,Pon	928
34	UO2	Pel	31,000	1.95,2.55,3.1	20	207	720	1	924	TC,1dr	4	6	1.6	WE	720	1	SSt	J	FW			De	PM	Riv	480
35	UO2	Pel	28,791	2.0,2.1,2.15	31	171	610	1	927	TC,1dr	6	6	1.0	GE	510	1	SSt	J	BLH	De	IW	Ion	GW	Pon	453
36	UO2	Pel	55,000			214		1	994	TC,1dr	6	7	0.5	WE	770	1	SSt	J	IR	De		De		Riv,Pon	383
37	UO2	Pel	30,000	2.35[31]	29.4	177	500	1	880	TC	6	6	1.5	GE	430	1	CuN	J	WE	De		De		Bay	548
38	UO2	Pel	33,000	2.0,2.7,3.4	30.4	208	557	1	998	TC,1dr	4	5	3.5	WE	640	1	Adl	J	WE	De	GW			Riv	535
39	UO2	Pel		1.1,2.5	23	164	560	1	883	TC,1dr	4	6	1.5	GE	370	1	SSt,Adl	J	WE	De	COC	De	COC	Pon	360
40	UO2	Pel	19,000	1.3		164		1	849	TC,1dr	4		1.6	GE	581	1	CuN	J	IR	De		De,Ion		Riv	624
41	UO2	Pel	30,000	2.06,2.72,3.05	31.3	171	654	1	938	TC,1dr	4	6	1.5	WE	1016	1	Ad	Ro	WE	De	HT	De	LAW	Riv,Pon	764
42	UO2	Pel	31,700	2.06,2.72,3.05	31.3	172	654	1	976	TC	6	6	2.5	GE	578	1	SSt	J	IR	De	IW	De	IW	Riv	396
43	UO2	Pel	31,790	2.3,2.6		164	611	1	887	TC,1dr	4	5	2.5	GE	566	1	Adl	J	FW	De		De	PM	Riv	388
44	UO2	Pel	27,500	2.7[31]	22.7	165	558	1	880	TC,1dr	4	6	1.6	GE	420	1	CuN	J	IR			De	IN	Bay	573
45	UO2	Pel	26,000	1.8[31]	22.3	165		1	840	TC,1dr	4	7	1.5	WE	550	1	AsCu	J	WE	De	PM	De	COC	Riv	448
46	UO2	Pel	21,060[31]	1.80,2.48,2.93	26	170	658[45]	1	853	TC,0dr	4	5	2.5	WE	546	1	AlB,CuN	J	WE	De				Ocn	484
47	UO2	Pel	22,950	2.05,2.15,2.99	30.9	176	650	1	910	TC,1dr	6	6	2	GE	453	1	CuN	Ro	MS	De	GW	De,SF	GW,DL	Bay	1200
48	UO2	Pel	30,000	2.01,2.1,2.95	29.5	170		1	963	TC	4	6	1.5	WE	400	1	AlB,CuN	J	IR					Bay	440
49	UO2	Pel	25,000	2.6,2.0,1.7,1.3	22.3	165	564	1	849[49]	TC,1dr	4	5	0.4	GE	560	2	SSt,Adl	J	FW	De	GW	De	GW	Riv	556
50	UO2	Pel	19,000[31]	2.15[31]	51.1[51]	164		1	801	TC	4	5	2	WE	465	1	SSt	J	MS	De	OGC	Ion	GW	Riv	650
51	U ThO2	Pel	84,000	33	1620	68	1575	1	749	TC	4	12	3.5	AC											
52	UO2	Pel	27,000	1.85,2.55,3.1		172	657	1	760	TC,0dr	2	7	2.5	WE	564	1	AlB,CuN	J	FW	De	COC	pH	COC	Bay	624
53	UO2	Pel	19,000[57]		22.5[2]	165	558	1	686	TC	2	6	1.5	GE	500	1	SSt,Ad	J	WE	De		De		Pon	376
54	UO2	Pel		2.18	17.3[27]	121		1		TC	4	5	1.5	GE	384	1	AlB	J		De		De		Bay	320
55	UO2	Pel			35.6[2]	202		1	589	TC,0dr	2	6	2.5	WE	480	1	AlB	J	WE	De		pH		Bay	
56	UO2	Pel	33,000[31]	2.27,3.03,3.40	30.6	191	612	1	560	TC	4	5	1.5	WE	425	2	SSt	J	IR	De	IW	pH		Riv	584
57	UO2	Pel	30,000	2.0,3.0,3.4	28.4	191	614	1	582	TC	2	5	1.5	WE	500	1	Adl	J	FW	De	LAW	pH	MR	Pon	400
58	UO2	Pel	18,350	1.1,2.12	22.5	164	550	1	589	TC,1dr	2	6	2.0,2.75	GE	410	1	SSt	J	FW	De	CFL	Ion	DL	Riv	283
59	UO2	Pel	31,790	2.0,2.6		164	611	1	562[44]	TC,1dr	2	5	2.5	GE	190	3	Ad	J	IR	De		De	PM	Riv	245
60	UO2	Pel	27,000	1.4,2.4,3.2	29	167	586	1	508	TC,1dr	4	6	1.5	GE	350	2	SSt	Ro	FW	De,So	HT	pH		Riv	240
61	U ThO2		130,000	93		15		1	312	TC	2	6	2.5	GE	174	2	Adl	J	IR	De	COC	De,pH	COC	Riv	156

PF - Precoat filtration
pH - pH control
Pon - Lake or pond, retaining pond
PoO - Postoperational
PrO - Preoperational
PWR - Pressurized-water reactor
Reg - Regulator control
Rnt - Reheat
Riv - River or stream
Ro - Rotary pump or blower
S - Speed control
SA - Semiannually
SB - Seaburial
SC - Single cylinder
Scr - Scrubbing
SF - Separate filters

So - Softeners
SSt - Stainless steel
T - Turbine
TC - Tandem compound
Th - Thorium
U - Uranium
UO2 - Uranium dioxide
Var - Various
VU - Vertical U tube
Wk - Weekly
Zry - Zircaloy

FOOTNOTES

1 - Units are ft of head
2 - Units are kW/kg U
3 - Summer
4 - Also charcoal filtration, dilution
5 - Also dilution, drumming
6 - Yearly average
7 - Closed cycle
8 - Countertlow type
9 - Approximate figure
10 - Also evaporation, dilution, drumming
11 - Before dilution
12 - Also charcoal filtration
13 - Also degasification
14 - Three pressure zones: 1.35, 1.22, 1.62
15 - Three-shell, single pass unit
16 - Cooling-tower blowdown
17 - Diffusion pipe
18 - Also hyperbolic, natural circulation
19 - Enrichment zones: 1.00, 1.28, 1.65, 1.97, 2.32
20 - Also, precoat filtration, ion exchange
21 - Also dilution
22 - Also ion exchange
23 - Most data common to both units, manufacturers for other than reactor and plant controls not yet selected for Unit 3
24 - Also precoat filtration
25 - Also ion exchange, evaporation, drumming
26 - Refrigerated charcoal system
27 - Joint ownership with Delmarva Power & Light Co, Philadelphia Electric Co and Atlantic City Electric Co
28 - Submerged high velocity jet

REACTOR							STEAM GENERATION						PRIMARY CIRCULATORS						FEED PUMPS							
Type	Manufacturer	Moderator	Coolant	Coolant inlet temp, F	Coolant outlet temp, F	Coolant pressure, psig	Steam temperature, F	Steam pressure, psig	Steam flow, 1000 lb/hrs	Number of steam generators per unit	Steam generator type	Steam generator mfr	Number per unit	Capacity each, gpm	Head developed, psi	Manufacturer	Flow control	Drive horsepower	Number per unit	Capacity each, gpm	Discharge pressure, psig	Manufacturer	Drive	Drive horsepower	Drive manufacturer	PROJECT
BWR	GE	H2O	H2O	420	540	965	540	950	16 486	N			2	44 900	271		Reg	7290	2		1105		T			1
PWR	WE	H2O	H2O	556	627	2235	545	985	15 144	4	VU	WE	4	95 500	2057	WE	S	7000	2	17 965	1132	WD	T	9145	WE	2
PWR	BW	H2O	H2O	573	653	2250	607	1065	16 556	2	Onc	BW	4	95 650	304			10 000	2	22,800	1250		T	13,000		3
PWR	WE	H2O	H2O	557	618	2235	542	1000	15 140	4	VU	WE	4	93 000	3051	WE		7000	2				T			4
PWR	WE	H2O	H2O	545	610	2235	518	790	15 060	4	VU	WE	4	88 500	2771	WE		6000	2	20 000	975	BJ	T	10,300	WE	5
PWR	CE	H2O	H2O	553	611	2235	532	885	15 090	2	VU	CE	4	99 000	94		N	10 000	2	18 700	1185		T	10,000		6
PWR	WE	H2O	H2O	553	617	2235	545	873	15 073	4	VU	WE	4	88 500	129	WE	N	6000	2	19 800	995	BPC	T	13,000	DL	7
PWR	GE	H2O	H2O	420	544	951	544	951	14 295	N			2	47 200	260		Reg	8900	2	20 255	995		T	7500		8
BWR	GE	H2O	H2O	553	611	2250	545	870	15 090	2	VU	CE	4			BJ		10 000	2	19 000	1043		T	10 000		9
PWR	CE	H2O	H2O	420	543	965	543			N			2	45,200		GE	S	7050	2	17 000	1123	DL	T	11 500	DL	10
BWR	GE	H2O	H2O	420	543	965																				
PWR	WE	H2O	H2O	556	616	2235	543	975	15 040	4	VU	WE	4	94 100	3091	WE	N	7000	2				T	8000		11
BWR	GE	H2O	H2O	420	546	1000	546	1000	14 295	N			2	47 200	264		Reg		3				M			12
BWR	GE	H2O	H2O	420	534	1005	534			N			2	47 200	805?	BWL	Reg	8340	2	18 520	25851	IR	T	12,250	DL	13
BWR	GE	H2O	H2O	539	602	2235	534	805	14 440	4	VU	WE	4	88,500	2701	WE	N	6000	2	18,600	1200	WO	T	10 970	DL	14
PWR	WE	H2O	H2O	539	602	2250	519	790	14,120	4	VU	WE	4	88 500	120	WE		6000	2	18,350	865	BJ	T	9530	WE	15
BWR	GE	H2O	H2O	420	545	1005	545	985	14 295	N			2	47 200	8051	BWL	Reg	8900	2	19 400	31701		T	15,000	GE	16
PWR	GE	H2O	H2O	553	611	2250	532	885	14 800	2	VU	CE	4	99 000	315	KSB	N		2	20 100	1435	DL	T		DL	17
PWR	GE	H2O	H2O	420	543	1005	542	1005	14 156	N			2	45 200	7101	BJ	S	9000	2	19,250	1330		T	13 400		18
BWR	GE	H2O	H2O	375	543	1005	547	1005	13 881	N			2	45 200	230	BJ	HyC	6700	3	12 270	1175	BJ	T	7200	GE	19
BWR	GE	H2O	H2O	375	547	1020	540	965	13,380	N			2	45,200	7101	BJ	S	6130	3	11,200	1275	PP	T	8500	GE	20
BWR	GE	H2O	H2O	420	547	1005	547	1005	14 138	N			2	45 200			HyC	8000	3				T			21
PWR	WE	H2O	H2O	536	599	2235	535	776	14,020	4	VU	WE	4	88,500	120	WE	N	6000	2	16,750	1070	WO	MTS	9800	GE,BB	22
PWR	WE	H2O	H2O	530	594	2235	535		13 989	4	VU	WE	4	87,500	282	WE	N	6000	2		1058	DL	T	9350	WE	23
PWR	WE	H2O	H2O	380	545	1005	540	950	13 432	N			2	45 200	3089	BJ	HyC	6700	3	10 800	920		T	5200	GE	24
BWR	GE	H2O	H2O	380	545	1005	540	950	13,432	N			2	45 200	3089	BJ	HyC	6700	3	10 800	920		T	5200	GE	24
PWR	CE	H2O	H2O	553	613	2235	560	900	12,250	2	VU	CE	4	80 400	250	BJ	N	6000	2	24 000	1135	DL	T	15,000	CE	25
PWR	BW	H2O	H2O	555	600	2500	600	1050	10,600	2	Onc	BW	4	92 400		BPC		7400	2	15 500	22401	BJ	T	9200	DL	26
PWR	WE	H2O	H2O	555	616	2235	540	948	12,210	3	VU	WE	3	96,600	130	WE	N	7000	3	14,350	1380	IR	T	13,000	GE	27
PWR	WE	H2O	H2O	555	616	2235	540	964	12,200	3	VU	WE	3	96,000	3001	WE		7000	2							28
PWR	BW	H2O	H2O	556	608	2185	570	910	12,240	2	Onc	BW	4	92,400	113	BPC		10 000	2	15,600	1500	BJ	T	9380	WE	29
PWR	WE	H2O	H2O	543	596	2235	600	755	13,260	4	VU	WE	4	89,700	2721	WE	N	6000	2	15 600		IR	T	8350	WE	30
PWR	BW	H2O	H2O	557	608	2185	570	910	11,360	2	Onc	BW	4	88 000			N	9000	2							31
PWR	BW	H2O	H2O	555	603	2185	570	910	10,600	2	Onc	BW	4	88 000		BJ	N	10,000								32
PWR	WE	H2O	H2O	544	611	2235	517	775	11,574	3	VU	WE	3	88,500	607	WE	N	6000	3	16,250	1040	BPC	M	8500	AC	33
PWR	WE	H2O	H2O	544	611	2235	511	785	12 090	3	VU	WE	3	88,500	122	WE	N	6000	2	15,200	1020	BPC	M	4000	LA	34
PWR	BW	H2O	H2O	555	603	2185	570	910	10,600	2	Onc	BW	4	88,000	3721	WE,BPC		7000	2	12 700	1055	DL	T	7400	GE	35
PWR	BW	H2O	H2O	566	625	2250	585	913	11,154	2	Onc	BW	4	69,930			N	5814	4	14,000	1350		M			36
PWR	CE	H2O	H2O	550	604	2235	520	800	11 176	2	VU	CE	4	83 000		BJ	N	5500	2	15,000	1090	IR	T	7900	GE	37
PWR	WE	H2O	H2O	544	611	2235	517	775	11 574	3	VU	WE	3	88 500	115	WE	N	6000	2	15 000		DL	T	6727	WE	38
BWR	GE	H2O	H2O	420	535	1010	545	1005	10 470	N			2	45 400	180	BJ	S	5000	2	13,750	1220	WO	T	8300	GE	39
BWR	GE	H2O	H2O	419	545	1005	545	965	10 460	N			2	45,200	5301	GE	S		2	13,100	1250	DL	T	5400	GE	40
PWR	BW	H2O	H2O	554	604	2185	570	910	11,200	2	Onc	BW	4	88 000	157	BJ	N	9000	2	14 750	1697	BPC	T	7306	WE	41
PWR	BW	H2O	H2O	554	604	2155	570	910	11,200	2	Onc	BW	4	88 000		WE			2	16,100	1225	BJ	T	10 160	GE	42
PWR	BW	H2O	H2O	555	603	2200	570	910	10,600	2	Onc	BW	4	88 000	160	BJ	N	9000	2	12 800	1190	IR	T	9000		43
BWR	GE	H2O	H2O	422	543	1060	543	968	10,471	N			2	45,200	230	BJ	S	5697	2	12 400	1195	BJ	T	9250	GE	44
BWR	GE	H2O	H2O	420	543	970	543	970	10,477	N			2	33,000	8451	BWL	Reg	6000	2	13 650	1087	DL	T	8500	WE	45
PWR	CE	H2O	H2O	550	602	2235	520	800	11 176	2	VU	CE	4	81,200	126	BJ	N	7000	2	14,100	900	BJ	M	7000	GE	46
PWR	CE	H2O	H2O	543	643	2235	525	835	11,270	2	VU	CE	4	81 200	3001	BJ		4500	2	15,000	23921	BJ	T	9000	GE	47
PWR	CE	H2O	H2O	540	593	2235	520	800	10,720	3	Onc	CE	3	105 000	126	BJ	N	9000	2	14 000	1031	BPC	M	8000	AC	48
BWR	GE	H2O	H2O			1005	562	1005	10 017	N			2	45 700	229	BJ	HyC	5250	2	17 000	1192	BJ	T	10 420	GE	49
BWR	GE	H2O	H2O	367	543	1005	541	956	9560	N			2	11 400	100	GE	S	5500	2	12,800	1082	BJ	T	8700	DL	50
HTGR	GGA	Gr	He	640	1402	685	955[5]	2500[5]	5360[5]	4		GGA	4	[5]	19.5	GGA	S	13,590					T			51
PWR	WE	H2O	H2O	547	600	2200	510	745	10,000	3	VU	WE	2	86,500	113	WE	N	6000	2	13,000	1007	BJ	M	7000	GE	52
BWR	GE	H2O	H2O	420	540	1005	540	1035	8300	N			2	26,400	7181	GE		4515	2	175 000	1113		M			53
BWR	GE	H2O	H2O	523	545	1000	545	1000	7600	N			2	45 000	1375		S	3500	3				M			54
PWR	WE	H2O	H2O	546	614	2235	521	805	7571	2	VU	WE	2	89 000	262	WE		6000	3							55
PWR	WE	H2O	H2O	536	599	2235	510	736	7090	2	Onc	WE	2	89,000	112	WE	N	6000	2	8600	897	WO	M	5000	EM	56
PWR	WE	H2O	H2O	545	608	2235	511	735	7090	2	Onc	WE	2	89 000	118	WE	N	6000	2	9250	1105	WO	M	5000	AC	57
BWR	GE	H2O	H2O	420	540	985	540	965	6827	N			2	27 100	225	BJ	S	3400	2	8900	1150	BJ	M	6000	GE	58
PWR	BW	H2O	H2O	555	602	2200	570	910	10 600	2	Onc	BW	4	88 000	160	BJ	N	9000	2	12,700	1190	IR	T	9000		59
PWR	CE	H2O	H2O	535	587	2085	506	720	6225	2	VU	CE	4	47,500	113	BJ	N	3650	3	8000	759	BJ	M	3500	AC	60
HTGR	GGA	Gr	He	760	1430	700	1000	2400	2310	2	Onc	GGA	4		14	GGA	S	5500	3	1685	3350	BJ	T,M	4170	GE	61

SEL - Systems Engineering Laboratories, Inc
SIC - Schmidt Instrument Co
SW - Stone & Webster Engineering Corp
SWE - Southwestern Engineering Co
TD - Tamper, Div of Canada Iron Foundries Ltd
TI - Teledyne Isotopes, Div of Teledyne Inc
TIL - Thomas Industries Inc
TL - Tracerlab, Div of Tracerlab
TRW - TRW Inc
TVA - Tennessee Valley Authority
VA - Vickers-Armstrong (Engineers) Ltd
VDM - Varian Data Machines
VIC - Victoreen Instrument Co
WE - Westinghouse Electric Corp
WO - Worthington Corp

SYMBOLS

Ac - Admiralty brass
Ad - Admiralty inhibited
AlB - Aluminum brass
An - Annually
AsCu - Arsenical copper
Bay - Bay or estuary
BWR - Boiling-water reactor
Can - Canal system
Cn - Crossflow
Chr - Charcoal filtration
Cl - Chlorine chlorination
Cmp - Compressor
Ctr - Counterflow
Ctn - Continuous
CuN - Copper/nickel
De - Demineralization
Dil - Dilution
Drm - Drumming
Ev - Evaporation
FlE - Flash evaporation
Fl - Filtration
Gr - Graphite
H2 - Hydrogen
H2O - Water
HTGR - High-temperature gas-cooled reactor
Hup - Holdup
HWR - Heavy-water reactor
HyC - Hydraulic coupling
Hyp - Hyperbolic
Ior - Indoor
Ion - Ion exchange
IOS - Inlet/outlet separation
J - Steam jet
LdB - Land burial
M - Motor
MD - Mechanical draft
MFt - Mechanical filtration
Mo - Monthly
MTS - Main turbine shaft
N - None
NaC - Natural circulation
Ocn - Ocean
Odr - Outdoor
Onc - Once through
OSS - Offsite shipment
Pel - Pellet

COOLING WATER				CONTROL OF RADIOACTIVITY									GENERATORS				CONTROLS MFRS					PLANT NAME	PROJECT
condenser, p	Treatment	Cooling tower type	Thermal effects study?	Treatment of gases	Locations for monitoring gaseous discharges	Gas monitor system mfr	Treatment of liquids	Liquid monitor system mfr	Low level waste disposal	High level waste disposal	Ecological study	Study frequency	Voltage, kV	Rating each, MVA	Stator cooling	Rotor cooling	Reactor controls	Major plant controls	Computer core performance	Computer, plant performance	Data logger		
			Yes	Hyp					OSS	OSS	PrO				H2	H2	GE					Grand Gulf	1
	Can	N	Yes	Cmp,Hyp	2		Hyp,Ev		OSS	OSS	PrO,PoO	Ctn	24	1450	H2O	H2	WE	WE	GE	GE	GE	McGuire	2
		Wet Hyb	Yes	Hyp			Hyp,Ev		OSS		PrO,PoO	SA	24	1480	H2O	H2	BW					X 14 X 15	3
	Oil	Wet Hyb	Yes	Cmp,Hyp	10		Hyp,MF		OSS		PrO,PoO	SA	24	1411	H2O	H2	WE					Watts Bar	4
	Oil,IOS		Yes	Cmp,Hyp	12		Hyp,MF		OSS		PrO,PoO	SA	24	1356	H2O	H2	WE		WE	WE	WE	Sequoyah	5
	IOS	N	Yes	Cmp,Hyp	12		Ion		OSS	OSS	PrO,PoO	Ctn	22	1313	H2O	H2						San Onofre	6
	Oil	Wet,Cl	Yes	Cmp,Hyp	9	CEP	Hyp,MF		OSS	OSS	PrO,PoO		22	1280	H2O	H2	WE		WE	WE	WE	Trojan	7
	IOS		Yes	Hyp,Ch	6		Hyp,MF		OSS	OSS	PrO,PoO		25	1350	H2O	H2	GE	GE	GE	GE	GE	Mendocino	8
			Yes	Cmp,Hyp			Hyp,MF		OSS	OSS	PrO,PoO		24	1333	H2O	H2	CE					Waterford	9
		Hyp	Yes	Chr	19	GE	Hyp,MF	GE	OSS	OSS	PrO,PoO		22	1350	H2O	H2	GE	GE	GE	GE	GE	Enrico Fermi	10
	Oil	Wet Cl	No	Cmp,Hyp			Hyp,MF		OSS	OSS	PrO	Ctn	22	1350	H2O	H2O						Vogtle	11
	Oil,IOS		Yes	Hyp,Ft	12	GE	Hyp,PF		OSS	OSS	PrO,PoO		25	1348	H2O	H2	GE	GE	GE	GE	GE	Nine Mile Point	12
		Wet MD	Yes	Hyp,Chr	10	GE	Hyp,MF		OSS	OSS	PrO,PoO	Ctn	25	1230	H2,H2O	H2	GE	WE	GE	GE	GE	Hanford	13
		N	Yes	Cmp,Hyp		TL	Hyp,Ev	TL	OSS	OSS	PrO,PoO	Ctn	25	1300	H2O	H2	WE	Var	WE	WE	WE	Salem	14
	IOS		Yes	Cmp,Hyp	18	WE	Hyp,MF	WE	Oil	OSS	PrO,PoO	Ctn	25	1300	H2	H2	WE	WE	WE	WE	WE	Diablo Canyon	15
	Pon	N	Yes	Chr	16		Hyp,PF		LdB,OSS	LdB,OSS	PrO,PoO		22	1300	H2O	H2	GE	GE	GE	GE	GE	LaSalle	16
	ISO	Wet	Yes	Hyp			Ev,Dil		OSS	OSS	PrO,PoO	Ctn	23	1390	H2O	H2	CE					Forked River	17
		Wet,Hyp	Yes				Ev,Drm		OSS	OSS	PrO,PoO	Ctn	25	1300	H2O	H2	GE		GE			Newbold Island	18
	IOS	Oil,Cl	Yes	Hyp,Ft	7		Hyp,PF		OSS	OSS			22	1280	H2O	H2	GE	GE	GE	GE	GE	Peach Bottom	19
	Oil,IOS	Wet,Cl	Yes	Hyp,Ft	12		Hyp,MF	GE	OSS		PrO,PoO	SA	22	1280	H2O	H2	GE	GE	GE	GE	GE	Browns Ferry	20
		Hyp,NaC	Yes	Cmp,Hyp	7		MF,Ion		OSS	OSS			22	1280	H2O	H2	GE	GE	GE	GE	GE	Limerick	21
	IOS	N	Yes	Cmp,Ft	2	WE	Hyp,Dil	WE	OSS	OSS	PrO,PoO	Ctn	26	1280	H2O		F	F	WE	N	WE	Donald C Cook	22
	IOS		Yes	Cmp,Hyp			Hyp,MF		OSS	OSS	PrO,PoO		24	1220	H2O	H2	WE					Zion	23
	Pon	Wet	Yes	Chr	13		Hyp,MF		OSS	OSS	PrO,PoO	Ctn	24	1280	H2O	H2	GE	GE	GE			Susquehanna	24
	Oil	Wet,Cl	Yes	Cmp,Hyp	9		Hyp,MF		OSS	OSS	PrO,PoO	An	22	1045	H2	H2	CE					Arkansas Nuclear One	25
		Wet,Cl	Yes	Cmp,Hyp	25		Hyp,MF		OSS	OSS	PrO,PoO	Ctn	22	1068	H2	H2	BM	BM	BM	CPI		Three Mile Island	26
	Pon,IOS		Yes	Cmp,Hyp	10		Ev,Dil		OSS	OSS	PrO,PoO	Ctn	22	1101	H2O	H2	WE		WE	WE	WE	Summer	27
				Hyp,Ft			Hyp,PF		OSS	OSS			22	1045	H2	H2						Harris	28
		Wet,Cl	No	Cmp,Hyp	5	TH	Hyp,MF	VIC	OSS	OSS	PrO,PoO	Ctn	22	1070	H2	H2	BM	BM	BW	BM	BM	Rancho Seco	29
	Oil,IOS	N	Yes	Hyp	5	TL	Hyp,MF	TL	OSS	OSS	PrO,PoO	Ctn	22	1126	H2	H2	WE,F	WE,F			WE	Indian Point	30
	IOS	N	Yes	Cmp,Ft			Ev,Drm		OSS	OSS	PrO,PoO		25	1056	H2O	H2	BM		BM	BM	BM	Davis-Besse	31
	Can		Yes	Hyp,Dil	26		Hyp	TL	OSS	OSS	PrO,PoO		22	984	H2	H2	DF	BM	BW	BM		Crystal River	32
	Pon		Yes	Cmp,Hyp	10	EIC	Hyp,MF		OSS	OSS	PrO,PoO	Ctn	22	1030	H2	H2	BM					North Anna	33
	IOS	Wet,Cl	Yes	Cmp,Hyp			Ion		OSS	OSS	PrO,PoO	Ctn	22	1026	H2,H2O	H2	WE	WE	WE	WE	WE	Beaver Valley	34
	Can	N	Yes	Cmp,Hyp	2	VIC	Hyp,MF	VIC	OSS	OSS	PrO,PoO	Ctn	19	1038	H2O	H2	BM	BM	GE	GE		Oconee	35
	Pon		Yes	Cmp,Hyp	15		Hyp,MF		OSS	OSS	PrO,PoO	Ctn	22	1105	H2	H2	BW	BW	BW	BW	BW	North Anna	36
	IOS	N	Yes	Cmp,Hyp			Hyp,MF		OSS	OSS	PrO,PoO	An	24	1011	H2	H2	CE	CE	IBM	IBM	IBM	Millstone	37
		Wet Cl	Yes	Hyp			Dil		OSS	OSS	PrO,PoO		22	1045	H2	H2	WE		WE	WE		Farley	38
			Yes	Hyp,Chr	9	GE	Hyp,PF	GE	OSS	OSS	PrO,PoO	Ctn	24	981	H2O	H2	GE	GE	GE	GE	GE	FitzPatrick	39
	Can						Hyp,PF		OSS	OSS	PrO,PoO		24	963	H2O	H2	GE		GE	GE	GE	Brunswick	40
	ISO		Yes	Cmp,Hyp	9	TL	Hyp,MF	TL	OSS	OSS	PrO,PoO	An	22	1003	H2	H2	BM	BM	BM	BM	BM	Arkansas Nuclear One	41
		Wet,Cl	Yes	Hyp	12		Hyp,MF		OSS		PrO,PoO	Ctn	19	968	H2	H2O	BM	BM	BM	BM		Three Mile Island	42
	Pon	Wet,Cl	No	Cmp,Hyp			Hyp,MF		OSS	OSS	PrO,PoO	Mo	24	1006	H2O	H2	BM	BM	BM	BM		Midland	43
	IOS	N	Yes						OSS	OSS	PrO,PoO		24	978	H2O	H2	GE		GE	GE	GE	Shoreham	44
		Wet,Cl	Yes	Hyp,Chr			Hyp,MF		OSS	OSS	PrO,PoO		22	975	H2	H2	GE		GE	GE	GE	Zimmer	45
			Yes	Cmp,Hyp	14	VIC	Hyp,MF	VIC	OSS	OSS	PrO,PoO		22	1000	H2	H2	CE	CE				St Lucie	46
	IOS		Yes	Cmp,Hyp	7	WE	MF	WE	OSS	OSS	PrO,PoC	Ctn	25	1020	H2O	H2	FIS	FIS	WE	WE		Calvert Cliffs	47
	IOS		Yes	Cmp,Hyp	11	VIC	Hyp,MF		OSS	OSS	PrO,PoO	Ctn	22	900	H2	H2		FIS	IBM	IBM		Main Yankee	48
	Cl	Wet,Cl	No	Hyp,Ft	34	BG	Hyp,MF	H	OSS	OSS	PrO,PoO	Ctn	24	1060	H2O	H2	GE	GE	GE	GE	GE	Hatch	49
	Can		Yes	Hyp	10	TI	Hyp,Dil	TI	OSS	OSS	PrO,PoO	Mo	22	983	H2	H2	GE	BM	GE	GE	GE	Cooper	50
													26	870	H2O	H2O							51
	Can		Yes	Cmp,Hyp	34		Hyp,MF		OSS	OSS	PrO,PoO		22	894	H2	H2	WE	WE				Turkey Point	52
		Wet	Yes	Hyp,Ft			Hyp,PF		OSS	OSS	PrO,PoO		24	762	H2O	H2	GE		GE			Bailly	53
	Can		Yes	Hyp,Chr	1900		Hyp,PF		OSS	OSS	PrO,PoO	Ctn	24	780	H2O	H2	GE	Var	GE	GE	GE	Pilgrim	54
	IOS			Cmp,Hyp			Hyp,MF						20	685	H2	H2	WE	WE	WE	WE		Aguirre	55
	Oil,Can	Wet,Cl	Yes	Cmp,Hyp	16	SIC,GEL	MF,Ev	WE	OSS	OSS	PrO,PoO	Ctn	19	659	H2	H2	WE	WE	WE	WE	WE	Prairie Island	56
	IOS		Yes	Cmp,Hyp	2	WE	Hyp,Ev	WE	OSS	OSS	PrO,PoO	Ctn	19	659		H2	WE	F	WE	WE	WE	Kewaunee	57
	N	Cl,Cl	Yes	Hyp,Ft	2	GE	Hyp,MF	GE	OSS	OSS	PrO,PoO	Ctn	22	664	H2O	H2	GE	GE	GE	GE	GE	Duane Arnold	58
	Pon	Wet,Cl	No	Cmp,Hyp			Hyp,MF		OSS	OSS	PrO,PoO	Mo	22	670	H2O	H2	BM	BM	BM	BM		Midland	59
	N		Yes	Cmp,Hyp	4	VIC	Hyp	VIC	OSS	OSS	PrO,PoO	Ctn	22	591	H2O	H2	CE	CE	WE	WE	WE	Fort Calhoun	60
	Pon	Cl	No	Hyp,Chr			Hyp,Dil		OSS	OSS	PrO,PoO		22	403	H2O	H2	GGA	F			CDC	Fort St Vrain	61

28 - Also drumming
30 - Data are for each of two main units, standby unit rated 10,300 gpm at 3200 ft dis charge head is motor driven
31 - Average for first core
32 - Also topping cooling towers
33 - Also dilution, drumming, centrifugation
34 - Also mechanical filtration, ion exchange
35 - Data are for Unit 1, condenser for Unit 2 has 544 000 sq ft of surface, manufacturer is Ingersoll Rand Co
36 - Unit 2, 1335 MVA
37 - Data are for each of two main units standby unit is motor driven
39 - Also ion exchange, evaporation, dilution
40 - Also evaporation, drumming
40 - Equilibrium condition
41 - Units are kW/lt
42 - Summer data
43 - Joint ownership with Cleveland Electric Illuminating Co
44 - Joint ownership with Ohio Edison Co and Pennsylvania Power Co
45 - Also scrubbing
46 - Joint ownership with Columbus & Southern Ohio Electric Co and Dayton Power & Light
47 - Cryogenic distillation
48 - Maximum value
49 - For unit 1, 857 MW for unit 2
50 - Also ion exchange, precipitation filtration solidification
51 - Units are kW/liter
52 - For unit 1, unit 2, 1002F
53 - For unit 1, unit 2, 575 psig
54 - For unit 1 unit 2, 5292
55 - 1,800,000 lb/hr helium
56 - Hexagonal graphite block containing bonded rods of fuel particles
57 - Burnup in MWD/ton
58 - Enrichment zones: 1.24, 1.33, 1.57, 1.88, 2.11
59 - Across condenser
60 - For gamma radiation surveillance, 7 stations for monitoring particulates and gaseous iodine
61 - Also evaporation, dilution, solidification
62 - Joint ownership with Wisconsin Public Svc Corp, Wisconsin Power & Light Co, Madison Gas & Electric Co
63 - △ T for discharge to cooling pond; blowdown cooling reduces this to 1 degree before discharge to river
64 - Possible cooling tower for blowdown cooling and service water
65 - Chlorine injection
66 - Also post-demineralization and deaerated drains recycle
67 - Also liquid roowaste recycle
68 - 4 050 000 lb/hr steam extracted at crossover for process steam to Dow Chemical Co