Power

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Modern Plant Yearbook Issue

Power presents its 1955

modern plant survey

These pages bring you the most data available anywhere on design features of steam and hydro units planned, under construction and starting operation. Because of the way we must compile facts, the survey does not include all current programs, nor does it consist only of current construction. Let us tell you how the job's done and point out listing limitations—so you can use the survey effectively.

• **HOW WE DO THE JOB.** As a continuing service, POWER'S editors assemble news of installations planned or ordered. We send questionnaires to individual companies asking for project details. The replies go into the tables, compiled at yearly intervals—last survey appeared in the Mid-September 1954 issue.

• **ITS LIMITATIONS.** In the nature of things, you can see these tabulations can't be complete. Nor can published lists correspond exactly in point of time with actual installations or announcements of them. Data may appear in the tables well before construction starts, or if engineering is delayed, may not appear until long after a project is announced. Revised listings duplicated from previous surveys are so marked.

• **HOW TO USE SURVEY.** Being representative of design and construction in progress in 1954 and early 1955, the following tables give useful information on general trends. These trends appear on the pages preceding the tables.

• **HOW NOT TO USE IT.** Remember, these are not complete lists, only extensive samples. Don't use survey facts to get total figures on capacities, sales, etc., or to make comparisons where incompleteness distorts results.

1955 Design Survey: Typical Industrial

Compiled by H P Kallen, Assistant Editor

Company & Location	Consulting Engineers	First operation, new units	Operating steam pressure, psig	Operating steam temperature, F	BOILERS: Number	BOILERS: Capacity, each, 1000 lb per hr	BOILERS: Manufacturer	BOILERS: Boiler & WW surface, 1000 sq ft	BOILERS: Superheater surface, 1000 sq ft	Furnace volume, 1000 cu ft	Heat release, 1000 btu per cu ft per hr	Economizer surface per boiler, 1000 sq ft	Air-heater surface per boiler, 1000 sq ft	Air-heater type	Dust-collector type	Firing
500 PSI AND ABOVE																
Erie Mining Co Taconite Harbor, Minn	Anaconda Copper Mining Co	1957	1500	1000	2	550	CE	16.0	36.7	44	17.3	20.3	56.9	Re	Me	P
Reserve Mining Co Silver Bay, Minn	Sargent & Lundy	7-55	1325	1005	1	450	BW	3.3	23.3	–	17.3	8.5	129.6	Re Pl	Me	P
M&O Paper Co, Int'l Falls Minn	J F Pritchard	9-56	1290	900	1	240	CE	17.2	4.8	1.4	22.4	5.4	28.5	Re	Me	P
Sherritt Gordon Mines Ltd, Ft. Sask., Alberta	Chemical Constr Corp	5-54	900	750	2	150	CE	13.1	1.0	6.3	31.3	–	22.7	Tu	–	G
Boston Naval Shipyard, Boston, Mass	**Chas T Main Inc**	9-54	875	825	1	150	RS	18.3	–	10.3	17.7	–	25.5	Re	Me	P
Kalamazoo Vegetable Parchment Co Parchment, Mich		11-55	360	325	1	200	CE	21.3	5.0	15.8	15.4	–	31.7	Re	Me	P
Bowaters Southern Paper Corp Calhoun, Tenn	United Engrs & Constructors	3-56	850	900	1	350	BW	28.0	14.0	22.3	21.4	–	38.2	Re	–	O G
[redacted]		3-53	850	820	2	225	FW	24.6	4.6	8.6	33.7	–	34.5	Re	–	G
[redacted] Carbon Co Battle Creek Mich	J Hoad & Assoc	5-55	750	750	1	140	BW	17.1	4.0	7.4	25.8	3.0	–	–	Me	SS(317)
El Paso Natural Gas Co Bloomfield N Mex		10-53	675	600	3	17	Vo	–	–	–	–	–	–	–	–	G
Chevrolet Detroit Forge Div GMC Detroit Mich	Albert Kahn Assoc	5-55	650	725	1	150	RS	19	2.3	10.5	20.8	–	20.9	Re	Me	P
Riverside Cement Co Oro Grande Calif	Bechtel Corp	1-55	650	825	5 2	20 40	CE CE	7.0 6.3	1.2 –	– 2.0	– 30.5	2.9 –	– 2.7	– Tu	Me E –	WH O
Shell Oil Co **Anacortes, Wash.**	**Bechtel Corp**	11-55	650	750	2 1	175 175	RS CE	18.5 16.0	– –	9.1 7.2	26.1 39.2	– 13.7	18.1 –	Tu –	– Me[7]	O, G PF
Barrett Div Allied Chem & Dye Corp Phila, Pa		2-54	625[14] 250[15]	750[14] 500[15]	2	230	BW	19.3	1.2	8.8	31.0	3.3	–	–	–	O G
Cooperative Farm Chem Assn Lawrence Kansas	Girdler Co	7-54	625	750	2	150	Vo	16.3	–	–	–	–	–	–	–	O G
Milwaukee County Inst, Wauwatosa Wis	Pfeifer & Shultz	10-55	625	750	3	1?0	UI	14.2	3.2	6.0	22.0	3.9	–	–	Me	SS(243)
Pennsylvania RR Altoona, Pa	Gibbs & Hill, Inc	1-55	625	635	3	60	RS	7.2	1.1	2.7	29.9	3.3	–	–	Me	SS(156)
Scott Paper Co Chester Pa		12-54	620	750	1	210	CE	17.4	–	–	23.6	–	32.0	Re	Me	O
Southland Paper Mills Lufkin Tex		5-56	610	750	2	175	BW	12.3	–	8.1	–	–	17.9	Tu	–	PF
Commercial Solvents Corp Sterlington, La.		6-55	605	750	1	110	RS	11.0	2.0	5.5	29.9	–	10.0	Tu	–	G
Central Fibre Products Co, Quincy, Ill	H M Wilson Co	9-55	600[14] 185[15]	650[14] 450[15]	2	90	CE	3.4	–	7.0	–	4.5	–	–	–	SS(300) O G
Container Corp of America Carthage Ind.		–	600 125	685 353	1 1	100 30	CE EC	9.0 3.2	– –	– –	– –	4.2 –	– –	– –	– –	TG(321) TG(76)
P H Glatfelter Co Spring Grove Pa	H M Wilson Co	6-56	600	650	1	240	CE	29.2	–	18.5	17.6	–	32.0	Re	Me	P
Marathon Corp, Rothschild Wis.		1956	600	750	1	30	–	–	–	–	–	–	–	Tu	Me	CS
Texas Eastman Co Longview Tex		12-54	600	750	1	150	CE	14.7	–	7.2	28.8	–	20.2	Tu	–	G
BELOW 500 PSI																
Linde Air Products Long Reach, W Va	Day & Zimmerman	6-55	535	625	2	40	CE	6.2	–	2.3	25.0	2.0	14.3	Tu	Me	[illegible]
Johns-Manville Corp Lompoc Calif		2-55	500	Sat	2	[illegible]	CE	1.9	–	–	–	–	–	–	–	PF
Sun Oil Co Toledo, Ohio		3-55	500	600	1 1	220 70	BW BW	–	–	–	–	–	–	–	–	O G[16]
Great Lakes Paper Co Ltd Ft Wm Pa	E & B Cowan	1-56	450	650	1	200	CE	17.2	–	–	24.8	–	63.0	Tu	–	P
Sun Oil Co Marcus Hook Pa		4-55	450	Sat	1	60	BW	3.5	–	–	–	2.0	–	Tu	–	PF
Sun Oil Co. Sarnia Ont.		3-53	450 450 130	550 Sat Sat	2 1 1	25 25 50	Wi FW JI	2.4 3.1 –	1.0 – –	–	–	–	–	–	–	PF
Mendota State Hospital Madison Wis	Buttey & Childs	11-55	425[14] 135[15]	700[14] 425[15]	2	50	UI	7.2	0.2	2.3	–	3.2[14] 2.5[15]	–	–	–	TG(172)
Refined Syrups & Sugars Inc Yonkers N Y	Anderson-Vreeland	7-55	425[14] 270[15]	750[14] 455[15]	1	125	CE	–	–	7.0	21.8	–	3.5	Re	Me	P O
Northern Chemical Ind Inc Searsport Me	Girdler Co	1-56	415	750	1	154	EC	13.2	–	–	–	–	–	–	–	O
Freeport Sulphur Co, Thibodaux La		2-55	400	550	3	56	BW	–	–	–	–	–	–	–	–	G
[illegible] Chemical Co Memphis Tenn		10-54	400	750	2	[illegible]	CE	–	–	–	–	–	–	–	–	G
Rock Island Millwork Co Rock Island Ill	Pfeifer & Shultz	5-55	400[14] 150[15]	Sat	1	30	BW	–	–	–	–	–	–	–	–	SS(95)
Standard Oil Co of B C Ltd N Burnaby, Can		11-54	400	450	2	30	CE	–	–	–	–	–	–	–	–	O, G
Colonial Sugars Co Gramercy La		9-55	300	475	1	[illegible]	RS	4.4	0.3	2.3	–	–	–	–	–	PF
Inland Steel Co E Chicago Ind		11-54	300	700	1	200	[illegible]	–	–	–	–	–	–	–	–	O[18]
Univ of Missouri Columbia Mo	Burns & Roe Inc	5-55	[illegible]	[illegible]	2	75	Wi	3.3	[illegible]	4.1	25.0	3.3	–	–	–	SS(300)
[illegible]		[illegible]	300	[illegible]	1	35	BW	3.4	–	–	35.9	–	–	–	–	PF, [illegible]
Arnold Hoffman & Co Inc Dighton Mass	Jenks & Ballou	7-54	275	[illegible]	1	55	RS	[illegible]	[illegible]	[illegible]	–	–	3.9	Tu	–	[illegible]
Fairfield State Hospital Newtown Conn	[illegible] & Mapes	[illegible]	250	450	2	[illegible]	[illegible]	6.2	–	–	–	–	–	–	–	PF
Phelps Dodge Copper Products Corp Yonkers N Y	F H McGraw	2-55	250	Sat	2	125	CE	–	–	–	–	–	–	–	–	O
Rock Hill Printg & Finishing Co Rock Hill S C	Lockwood Greene	4-55	250	Sat	1	150	[illegible]	9.3	–	[illegible]	24.0	2.4	–	–	Me	SS(257)
[illegible]		[illegible]	250	Sat	2	[illegible]	CE	–	–	–	–	–	–	–	–	PF
[illegible]	[illegible]	[illegible]	250	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	–	[illegible]	[illegible]	[illegible]	–	–	–	[illegible]
[illegible]	[illegible]	[illegible]	250	[illegible]	[illegible]	[illegible]	BW	[illegible]	–	[illegible]	[illegible]	–	[illegible]	[illegible]	–	[illegible]
[illegible]		[illegible]	250	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	–	–	–	–	[illegible]
[illegible]	Thomas & [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	BW	–	–	–	–	–	–	–	–	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	–	[illegible]	[illegible]	[illegible]	[illegible]	–	[illegible]	[illegible]	–	–	–	–	[illegible]
St Marys Hospital Rochester Minn	Maguolo & Quick	[illegible]	[illegible]	550	[illegible]	[illegible]	[illegible]	[illegible]	–	[illegible]	–	[illegible]	–	–	–	PF
[illegible]		[illegible]	[illegible]	Sat	[illegible]	[illegible]	[illegible]	[illegible]	–	–	–	–	–	–	–	–
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	–	30.0	–	[illegible]	–	–	O

AC – Allis-Chalmers Mfg Co; [illegible]

C – Continuous; CE – Combustion Engineering Inc; [illegible]

EC – Erie City; Ev – Evaporator; FW – Foster Wheeler Corp; FWL – Foster Wheeler Ltd; G – Gas; GE – General Electric Co; [illegible]

JI – John Inglis Co Ltd; M – Motor drive; Ma – Magnetic coupling; Me – Mechanical; N – None; NC – Noncondensing; [illegible]

Pl – Plate; Pn – Pneumatic; PP – Purchased power; Pr – Primary; R – Regulator; Re – Regenerative; RS – Riley Stoker Corp; [illegible] – Speed control; [illegible] – Tubular; Se – Secondary

Type	FUEL: Heating value, 1000 Btu per lb	FUEL: Ash softening temperature, F	F D FAN: Drive	F D FAN: Air volume control	I D FAN: Drive	I D FAN: Gas volume control	Water treatment	Ash handling	FEED PUMPS: Drive	FEED PUMPS: Flow control	TURBINES: Capacity, each, 1000 kw	TURBINES: Manufacturer	TURBINES: Backpressure psia	TURBINES: No of bleed or auto extraction pts	TURBINES: Type	CONDENSER: Surface 1000 sq ft	CONDENSER: No water passes	CONDENSER: Tube material	ELECTRICAL POWER: Source	ELECTRICAL POWER: Generator nameplate voltage, kv	ELECTRICAL POWER: Plant distribution voltage, kv	ELECTRICAL POWER: Transformer type	ELECTRICAL POWER: Switchgear relay protection	ELECTRICAL POWER: Neutral grounding	Total boiler capacity incl new units, 1000 lb per hr	Total generator capacity incl new units, 1000 kw
[illegible] PSI AND ABOVE																										
C, O	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Pr	2M	Hv	57.5[4]	WE	1.0[1]	5	Cc	35.0	[illegible]	Ac	PP	13.8	13.8, 4.2, 2.4	O,As	Dr, Ov Gr	Pr,Se	1120	150
C	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Pr	2M	[illegible] Hv	40	WE	1.0[1]	5	Cc	27.5	3	Ad	PP,GP	–	[illegible]	O	Dr, Ov Gr	Pr, Se	500	40
C	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	Hy	2M	F	6.0	GE	450	–	NC	–	–	–	PP,GP	6.6	[illegible]	O	Ov	–	750	30
G	[illegible]	–	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	–	M,T	R	3.0	BB	[illegible][1]	1	AE,Cc	3.0	3	Ac	PP,GP	4.2	[illegible]	O	Dr, Ov Gr	Pr, Se	300	[illegible]
C, O	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	–	M,T	–	7.5	El	195	–	NC	–	–	–	–	–	–	–	–	–	500	[illegible]
C	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Fn	2M	R	7.5	GE	[illegible]	[illegible]	AE Cc	6.5	2	Ac	GP	4.8	4.8	–	Dr,Ov	N	495	19.8
O, G	–	–	[illegible]	[illegible]	[illegible]	[illegible]	–	–	–	R	25.0	WE	2.0[1]	3	AE Cc	18.0	2	Ac	–	–	–	–	–	–	900	45
G	[illegible]	–	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	–	[illegible]	S	5.0[4]	El	35	[illegible]	AE NC	–	–	–	–	–	–	–	–	–	450	12.0
C	[illegible]	–	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	M,T	R	[illegible]	El	35	[illegible]	NC	–	–	–	PP,GP	4.2	[illegible]	O	Ov	Pr,Se	140	[illegible]
G	–	–	–	–	–	–	–	–	–	–	[illegible]	WE	250	0	NC	–	–	–	GP	4.2	4.2	O	Dr,Ov Gr	Pr	[illegible]	[illegible]
C	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	–	Pr	M	Hv	–	–	–	–	–	–	–	–	–	–	[illegible] 4	–	–	–	575	–
G	[illegible]	–	[illegible]	[illegible]	[illegible]	[illegible]	Dc,Ev	–	2M,3T	R	7.5[4]	GE	1.5[1]	2	Cc	9.0	2	AiBr	GP	2.4	[illegible]	Dr[8]	Dr, Ov Gr	N	180	15
O,G[10] O,G[11]	10 11	–	–	[illegible]	–	[illegible]	De	–	2M,3T	S	–	–	–	–	–	–	–	–	PP	–	13.2,2.3	O	Ov	Se	525	–
O,G[19]	20	–	–	[illegible]	–	[illegible]	[illegible]	–	2T	R	–	–	–	–	–	–	–	–	PP	–	[illegible]	O,As	Dr,Ov	N	460	–
O,G	[illegible]	–	–	[illegible]	[illegible]	[illegible]	Sc	–	3M,2T	[illegible]	0.5	Wo	4.0[1]	0	Cc	–	2	Ad	PP,GP	0.6	0.4	O	Ov	Pr,Se	300	–
C	[illegible]	2000	–	[illegible]	[illegible]	[illegible]	Sc	–	2M,2T	R	3.0[4]	AC	30	1	AE,NC	–	–	–	–	–	–	–	–	–	330	6.0
C	[illegible]	2350	[illegible]	[illegible]	[illegible]	[illegible]	Sc	Fn	2T,1De	S	1.5[4]	WE	165	–	NC	–	–	–	PP,GP	2.3	2.3	O	Ov Gr	N	180	3.0
O	[illegible]	–	[illegible]	[illegible]	[illegible]	[illegible]	Sc,Ev	–	2M,1T	R	3.5[13]	GE	–	4	AE Cc	–	2	Ac	–	–	–	–	–	–	665	10
G		–	[illegible]	[illegible]	–	–	De,So	–	2M	–	12.5[4]	GE	3.0[1]	1	AE Cc	15.0	2	AsCu	GP	2.4,6.9	2.4,6.9	O	Dr,Ov	–	770	[illegible]
G	–	–	[illegible]	[illegible]	[illegible]	[illegible]	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
C, O,G	10.7	2000	[illegible]	[illegible]	T	D	So	Pn	2T	S	–	–	–	–	–	–	–	–	PP	–	2.3	–	Ov	N	180	–
C	13.4	–	[illegible]	[illegible]	[illegible]	C	Sc	Fn	4M,1T	R	1.5[4]	WE	–	[illegible]	Cc,NC	1.8	2	–	PP,GP	–	–	Dr	Ov	N	130	3.0
C	13.5	2200	[illegible]	[illegible]	T	S D V	Sc	Pn	2T	S	–	–	–	–	–	–	–	–	PP,GP	2.3,0.6	2.3,0.6	O	Ov Gr	N	570	13
C	12.0	2350	–	[illegible]	T	S D	De,Sc	–	3M,1T	S,R	4.0	AC	30	–	–	–	–	–	PP,GP	4.2	0.4	O	Ov	–	240	7.5
G	0.9[illegible]	–	–	[illegible]	T	–	So	–	T	R	–	–	–	–	–	–	–	–	PP	–	12.0	O	Ov	Pr,Se	500	–
[illegible] PSI																										
	[illegible]	2350	–	[illegible]	–	–	Sc	Hv	3T	S	–	–	–	–	–	–	–	–	PP	–	4.2	O	Ov	Pr	80	–
	[illegible]	–	[illegible]	[illegible]	–	–	Sc	–	2M	R	–	–	–	–	–	–	–	–	PP	–	2.4	O	Ov	N	–	–
O,G	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	PP	–	[illegible]5	O	Dr, Ov,Gr	Se	900	–
C	[illegible]	2400	[illegible]	[illegible]	[illegible]	Hv	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
O WH	19.5[17]	–	[illegible]	[illegible]	–	–	[illegible]	–	1M,1T	S,R	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
O O WH	18.0 16.0	–	[illegible]	[illegible]	–	–	Sc	–	1M,2T	R	–	–	–	–	–	–	–	–	PP	–	–	O	Ov	–	125	–
C	[illegible]5	2050	[illegible]	[illegible]	T	D	Sc	Pn	2M,1T	R	0.3	GE	20	–	NC	–	–	–	PP,GP	4.2	–	–	–	–	100	–
C,O	[illegible]	–	[illegible]	[illegible]	[illegible]	S D	Sc	Fn	T	S,R	2.0	Wo	15	–	NC	–	–	–	PP,GP	0.5	0.4	–	Ov	N	240	3.0
O	–	–	[illegible]	[illegible]	[illegible]	D	Sc	–	M,T	R	7.5	El	2.0[1]	0	Cc	7.0	1	Acl	PP,GP	4.2	0.4	–	–	–	154	7.5
G	–	–	–	–	–	–	–	–	–	–	1.5	WE	115	–	NC	–	–	–	GP	2.4	2.4	O	Dr, Ov Gr	Pr	198	1.5
G	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	PP	–	12.5, 4.2,0.4	O	Dr, Ov,Gr	Pr, Se	220	–
C,Sa	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	PP	–	0.5	Dr	Ov	Pr,Se	60	0.8
O,G	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	PP	–	2.3,0.4	O	Ov	N	50	–
O,G	[illegible]	–	–	[illegible]	–	–	Sc [illegible]	–	2T	R	0.5[4]	GE	15	–	AE,NC	–	–	–	GP	–	–	O	Ov	Pr	175	1.5
O[18]	–	–	–	–	–	–	–	–	–	–	10.0	GE	1.5[1]	0	Cc	–	–	–	GP	–	6.9,2.3	O	Dr,Ov	N	3945	140
C	[illegible]	1950	[illegible]	[illegible]	[illegible]	[illegible]	Sc	Pn	2M,1T	R	1.5[4]	WE	2.0[1]	1	AE Cc	–	2	Ac	PP,GP	2.4	2.4	O	Dr,Ov	N	260	4.0
C	[illegible]	2400	[illegible]	[illegible]	[illegible]	[illegible]	Ge	Wo	M,T	S,R	2.5	El	0.5	–	Cc	–	–	–	PP,GP	2.4	0.2	O	Ov	N	55	2.5
O	[illegible]	–	[illegible]	–	[illegible]	[illegible]	[illegible]	–	M,T	S,R	–	–	–	–	–	–	–	–	PP	–	–	–	–	–	55	–
O	[illegible]	–	[illegible]	[illegible]	–	–	–	–	2M,1T	R	1.5[4]	Wo	15	–	NC	–	–	–	GP	[illegible]	0.2	Dr, O,As	Ov	Se	125	1.5
O	–	–	[illegible]	[illegible]	–	–	[illegible]	–	–	–	–	–	–	–	–	–	–	–	PP	–	0.4	O	Ov	–	–	–
C	[illegible]	2300	M,T	D,D	M,T	D,D	–	Pr	M,T	–	–	–	–	–	–	–	–	–	GP	–	–	O,Dr	Dr, Ov,Gr	–	–	–
O	11.5	–	–	[illegible]	–	–	–	–	–	–	–	–	–	–	–	–	–	–	GP	–	–	–	–	–	–	–
O[21]	–	2300	M,T	[illegible]	[illegible]	[illegible]	[illegible]	–	M,T	S,R	–	–	–	–	–	–	–	–	–	–	–	–	–	–	140	–
C,O	13.5	2350	M	[illegible]	M	[illegible]	–	–	M,T	S,R	1.2	Wo	35	0	NC	–	–	–	–	–	–	–	–	–	–	–
O,G	15.0	–	–	–	–	–	[illegible]	–	[illegible]	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
O,G	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
O,G	–	–	–	–	–	–	–	–	M,T	R	0.3	Wo	100	–	NC	–	–	–	PP,GP	0.5	0.4,0.1	O,Dr	Ov	Pr,Se	50	0.3
O,G	[illegible]	–	[illegible]	[illegible]	–	–	[illegible]	–	M,T	[illegible]	[illegible]	WE	15	–	NC	–	–	–	PP,GP	0.5	2.3,0.1	As	Ov Gr	N	20	[illegible]
O,C	[illegible]	–	[illegible]	[illegible]	–	–	[illegible]	–	M,T	[illegible]	[illegible]	WE	[illegible]	[illegible]	–	–	–	–	PP,GP	2.4	2.3,0.2	O	Ov	Pr	120	3.0
G	[illegible]	–	[illegible]	[illegible]	–	–	[illegible]	–	–	[illegible]	–	–	–	–	–	–	–	–	PP	–	–	–	–	–	17.5	–
O	15.0	–	M,T	[illegible]	M,T	[illegible]	–	–	2M,2T	R	1.5	Wo	1.5	[illegible]	AE Cc	1.4	2	Ac	GP	2.4	–	Dr	Dr, Ov,Gr	N	120	1.5

So – Softener
[illegible] – Spreader stoker
[illegible] – Turbine drive
[illegible] – Traveling-grate stoker
[illegible] – Tubular
[illegible] – Union Iron Works
[illegible] – Vane control
Vo – Henry Vogt Machine Co
WE – Westinghouse Electric Corp
WH – Waste heat

Wi – Wickes Boiler Co
Wo – Worthington Corp
[illegible] – Stoker grate area, sq ft
1 – In Hg absolute
2 – 1000 Btu per cu ft for gas
3 – Oil, 137,000 Btu per gal. Gas, 1070 Btu per cu ft
4 – Two units installed
5 – Two motors per fan
6 – Steam

7 – Cement with flue gas
8 – For auxiliary power
9 – Ahead of boiler
10 – Pitch blend (15,500 Btu per lb) and refinery gas (765 to 1374 Btu per cu ft)
11 – CO gas from catalytic cracker residual oil (17,980 Btu per lb) pitch blend (15,500 Btu per lb), refinery gas (765 to 1374 Btu per cu ft)

12 – Same turbine drives both fans
13 – Three units installed
14 – Future
15 – Initial
16 – Also CO gas
17 – For oil
18 – Also coke-oven and blast-furnace gas

19 – Also byproduct propane
20 – Oil, 19,550 Btu per lb. Gas, 1030 Btu per cu ft. Propane, 21,710 Btu per lb
21 – Also coke breeze

Compiled by H P Hatten Assistant Editor

Company & Location	Consulting Engineers	First operation, new units	Operating steam pressure, psig	Operating steam temperature, F	BOILERS: Number	Capacity, each, 1000 lb per hr	Manufacturer	Firing	Ash handling	TURBINES: Type	Manufacturer	ELECTRICAL POWER: Source	Plant distribution voltage, kv	Transformer type	Switchgear relay protection	Neutral grounding	Total boiler capacity including new units, 1000 lb per hr	Total generator capacity including new units, 1000 kw
…Mills Inc Dillon S C	Chas T Main Inc	2-55	150	–	2	30	CE	O Cv	–	–	–	PP	0 5	O	Ov	Pr Se	60	–
…rys Manitoba Div Winnipeg Man		–	150	365	2	15	DBr	O	–	–	–	–	–	–	–	–	30	–
…Motor Co Livonia Mich	Albert Kahn Assoc	6-55	150	365	{2 / 1}	{30 / 40}	Wi	SS[6]	Pn	–	–	–	–	–	–	–	200	–
…Motor Co Walton Hills Ohio	H K Ferguson Co	1954	150	Sat	3	40	CE	TG (132)	Pn	–	–	PP	–	–	–	–	120	–
…Chim Co McIntosh Ala	Brown & Root	1-53	150	366	2	5	Wi	O	–	–	–	–	–	–	–	–	30	–
…Northern Ry St Cloud Minn		7-55	150	366	2	25	WB	O C	–	–	–	–	–	–	–	–	50	–
…gell Co Pittsburgh Pa	Peter F Loftus Co	9-53	150	Sat	1	50	BW	SS(136)	–	–	–	–	–	–	–	–	100	–
[redacted]		6-54	150	366	5	30	FW	O G	–	–	–	–	–	–	–	–	150	–
…Jersey State Hospital Greystone Pk N J	Burns & Roe Inc	10-55	150	Sat	2	30	–	O PF	–	–	–	–	–	–	–	–	150	–
…western Univ Evanston Ill	Cecil L Reichert	7-55	150	Sat	2	36	BW	O	–	–	–	PP	–	–	–	–	–	–
…State School Tuscaloosa Ala		5-55	150	Sat	1	25	Vo	UF(90)	Me	–	–	–	–	–	–	–	–	–
…ston Purina Co St Louis Mo		6-55	150	Sat	1	30	CE	O G	–	–	–	PP	–	O	–	Se	–	–
…A Robinson Ltd Toronto Ont		1-54	150	365	1	18	UI	O	–	–	–	PP	0 6	O	Ov Gr	Se	36	–
…Gen'l Hospital St John N B	A G Moore	5-55	150	365	3	10 5	CB	O	–	–	–	PP	0 5 0 2	Or	–	–	31 5	–
…Inc Clifton N J	E Gruenberg	–	150	360	1	16	BW	O	–	–	–	PP	0 5	O Dr	Ov	–	26	–
…Lumber Co Somers Mont		9-55	150	366	1	20	UI	O	–	–	–	–	–	–	–	–	20	–
…Mills Inc Winston-Salem N C	Heat Engineering Co	6-53	150	–	1	5 2	CB	O C	–	–	–	–	–	–	–	–	–	–
…field State Hospital Sykesville Md	James A Posey	1 54	150	366	6	60	EC	{1–P / 3–UF / 2–SS}	–	AE	GE	–	–	–	–	–	360	1 4
…Div, Gen'l Tire & Rubber Co Toledo Ohio		9-55	150	Sat	1	40	BW	SS (122)	Pn	–	–	–	–	–	–	–	–	–
…Roller Bearing Co Bucyrus, Ohio	Paul Chester	1955	150	Sat	2	25	CE	UF(84)	Pn	–	–	–	–	–	–	–	50	–
[redacted]		5-55	150	Sat	1	100	FW	O	–	NC	AC	PP GP	0 5	O	Ov	N	200	1.8
…Mfg Co Ltd Toronto Ont	H H Angus & Assoc	12-55	150	Sat	2	12	FWL	SS(37)	Me	–	–	PP	0 5	O	Ov	N	24	–

LOW

Company & Location	Consulting Engineers	First operation, new units	Operating steam pressure, psig	Operating steam temperature, F	BOILERS: Number	Capacity, each, 1000 lb per hr	Manufacturer	Firing	Ash handling	TURBINES: Type	Manufacturer	ELECTRICAL POWER: Source	Plant distribution voltage, kv	Transformer type	Switchgear relay protection	Neutral grounding	Total boiler capacity including new units, 1000 lb per hr	Total generator capacity including new units, 1000 kw
…al Center Louisville Ky	E R Ronald	11-54	149	353	3	41	Vc	TG(117)	Pn	–	–	–	–	–	–	–	150	–
…Refineries Ltd St John, N.B.	H G Acres Co Ltd	7-54	140	401	1	80	CE	O	–	–	–	–	–	–	–	–	230	–
…Paper Corp Ltd, Que.	H G Acres Co Ltd	10-55	140	Sat	2	80	FW	O[3]	–	–	–	PP	–	–	–	–	–	–
…Oil & Refining Ltd Ft William Ont		7-55	140	360	1	32	JI	O	–	–	–	PP	0 6 0 2	O	Ov	Se	40	–
…eral Mills Chicago Ill		1-55	135	–	1	9	BW	P SS	Me	–	–	PP	0 4	O	Ov	N	–	–
…al State Auth, Wernersville Pa		9-55	135	Sat	3	20	–	TG	–	–	–	–	–	–	–	–	90	–
…Sugars Inc Reserve La		10-55	125	Sat	1	130	CE	G	–	–	–	–	–	–	–	–	–	–
…way Mills Co La Grange Ga		5-55	130	Sat	1	40	BW	O G	–	–	–	–	–	–	–	–	40	–
…Piece Dye Works, Charleston S C		1-55	130	350	1	35	CE	G	–	–	–	PP	0 4	O	–	–	85	–
…Universities Inc, Upton L I N Y	Stone & Webster Engrg Corp	11-55	125	353	1	60	CE	O	–	–	–	PP	13 8,2 4	O	{Dr / Ov,Gr}	Se	100	–
…Div Allied Chemical & Dye Corp Phila Pa		7-55	125	403	2	29	EC	O C[4]	–	–	–	PP	0 2	O	–	N	58	–
…Co of America Lancaster Pa		1-54	125	350	2	20	BW	C	–	–	–	PP	0 5	O	–	N	40	–
…Energy of Canada Ltd Chalk River Ont	C D Howe Co Ltd	12-55	125	450	2	50	FW	TG(120)	Pn	–	–	PP	2 4	O	Ov Gr	Se	200	–
…Finishing Co Paterson N J		1-54	125	–	2	30	CE	O	–	–	–	PP	–	O	Ov	Pr Se	–	–
…Mfg Co, Jackson, Miss	[illegible]	8-54	125	252	1	28	FW	O G	–	–	–	–	–	–	–	–	–	–
…e Citadel, Charleston S C	Lockwood Greene Engrs	1955	125	Sat	1	40	CE	SS	Mn	–	–	PP	–	O	–	Pr,Se	130	–
…rado A & M College, Ft Collins Colo	Lord & Max	9-55	125	250	1	50	UI	SS[7]	–	–	–	PP	–	O	Ov	Pr Se	115	–
…of National Defence Centralia Ont	Dillon Co	1955	125	352	3	27	VK	UF(85)	Pn	–	–	PP	0 6 0 2	Dr	Ov	–	82	–
…of National Defence Goose Bay Labrador	H A Hancock	11-53	125	365	3	25	CV	O	–	–	–	–	–	–	–	–	–	–
…Engrg Works Ltd Lachine Que		11-54	125	357		25	DEr	O	–	–	–	–	–	–	–	–	88	–
…Realty Co Ltd North York Ont	R P Allsop & Assoc	1-55	125	350	2	25	FWL	O	–	–	–	PP	4 0	O	Ov	N	–	–
…RR, Hornell N Y	Jones Daly Millar Assoc	1954	125	Sat	2	22	CE	O C	–	–	–	PP	–	–	–	–	44	–
…Motor Co Louisville Ky	Albert Kahn Assoc	12-54	125	350	{2 / 1}	{120 / 50}	Wi	SS	–	–	–	–	–	–	–	–	300	–
…Motor Co Sandusky Ohio	Rust Eng Co	5-55	125	Sat	3	50	Wi	SS	Pn	–	–	PP	2 3 0 5	O	Ov Gr	N	180	–
…Motor Co Detroit Mich	Giffels & Vallet Inc	5-55	125	Sat	3	70	Wi	SS	Pn	–	–	PP	13 2 0 5	O	Ov Gr	N	210	–
…Center Capitol Inc N Y N Y	Sears & Kopf	4-55	125	353	2	50	CE	O	PP	–	–	–	–	–	–	–	100	–

…Manual	PF – Pressurized furnace	SS – Spreader stoker	VK – Vickers Keeler	1 – In Hg absolute
	Pn – Pneumatic	SC – Superior Combustion Industries Inc	Vc – Henry Vogt Machine Co	2 – 1000 Btu per cu ft
…ensing	PP – Purchased power	TG – Traveling-grate stoker	WB – Wm Bros Boiler & Mfg Co	3 – One unit also burns bark
	Pr – Primary	TI – Titusville Iron Works Co	Wi – Wickes Boiler Co	4 – Future
…ed	RS – Riley Stoker Corp	UF – Underfeed stoker	Wo – Worthington Corp	5 – Initial
…erized fuel firing	Se – Secondary	UI – Union Iron Works	(126 – Stoker grate area, sq ft	6 – For coal and coke breeze
				7 – For coal and lignite
				8 – Steam

Industrials, Institutionals: Below 2[illegible] psi

Compiled by H P Karlen, Assistant Editor

Company & Location	Consulting Engineers	First operation, new units	Operating steam pressure, psig	Operating steam temperature, F	Boilers: Number	Boilers: Capacity, each, 1000 lb per hr	Boilers: Manufacturer	Boilers: Firing	Ash handling	Turbines: Type	Turbines: Manufacturer	Electrical Power: Source	Plant distribution voltage, kv	Transformer type	Switchgear relay protection	Neutral grounding	Total boiler capacity including new units, 1000 lb per hr	Total generator capacity including new units, 1000 kw
Gen'l Electric Co, Waynesboro, Va	Whitman, Requardt & Assoc	3-55	125	Sat	2	15	BW	O G	–	–	–	PP	13.5 0.3	O As	Ov, Dr	Pr Se	30	–
Gen'l Mills Inc, Toledo, Ohio	H K Ferguson Co	7-55	125	353	3	25	CE	O	–	–	–	PP	2.4	As	Ov	Pr Se	75	–
Gen'l State Authority, Shamokin, Pa	Kulpan Corp	10-55	125	353	2	7.5	Ke	An	Hn	–	–	PP	–	O	Ov	Pr Se	15	–
Grasslands Hospital, Valhalla, N Y	Krey & Hunt	9-55	125	354	1	33	BW	SS	Hv	–	–	PP	2.2	Dr	–	Pr Se	125	–
Greenlee Bros & Co, Rockford, Ill		10-55	125	353	2	20	BW	TG(95)	Pn	–	–	PP	2.4	O As	Ov	N	56.8	–
Hamilton Mfg Corp, Columbus, Ind		1-54	125	353	1	24	KJ	TG(55)	–	–	–	–	–	–	–	–	18	–
P M Hollingshead Corp, Camden, N J		3-55	125	–	2	17.5	Ti	O	–	–	–	PP	2.2	O Dr	–	N	35	–
Pharma Chemical Corp, Bayonne, N J	J W Leatherdale	1953	125	Sat	2	{3.3 / 35.5}	CB	O	–	–	–	–	–	–	–	–	–	–
Maine Gen'l Hospital, Portland, Me		6-56	125	380	4	25	Bi	O	–	–	–	–	2.2	O	–	–	–	–
Md Terminals Corp, Baltimore, Md		12-54	125	250	1	23.5	BW	O	–	–	–	–	–	–	–	–	23.5	–
Mass Hospital School, Canton, Mass		1-54	125	Sat	1	20	BW	O	–	–	–	PP	2.2	As	Ov	Se	20	–
National Brewing Co, Baltimore, Md	Egli & Gompf	3-54	125	Sat	1	15	RS	CF, OS[1]	–	–	–	PP	0.4	O	Ov	Se	30	–
Ontario Hospital, Penetanguishene, Ont		7-55	125	Sat	1	15	FWL	UF(29)	Me	–	–	PP	–	O	–	Pr Se	40	–
Pinehurst, Inc, Pinehurst, N C	Wiley & Wilson	–	125	–	2	17	BW	UF	Me	–	–	PP	–	O	–	–	34	–
Quaker Oats Co, Chattanooga, Tenn		10-55	125	Sat	1	14	Su	O G	–	–	–	–	–	–	–	–	18	–
Simpson Sears Ltd, Etobicoke, Can	M Babcock Assoc	6-54	125	245	3	20	FW	SS(58)	–	–	–	–	–	–	–	–	60	–
U S Naval Air Station, Oceana, Va		1-55	125	252	2	50	Ul	O	–	–	–	–	–	–	–	–	–	–
U S Army, Ft Dix, N J		–	125	254	3	55	EC	SS(576)	–	–	–	–	–	–	–	–	165	–
Wis State College, LaCrosse, Wis		6-55	125	378	1	12	Ul	UF(50)	3	–	–	PP	–	–	Ov	–	20	–
Yankton State Hospital, Yankton, S D	Tyne Engrg Co	1954	125	252	1	40	BW	O G	–	–	–	PP GP	–	O Dr	–	–	106	–
Atlas Powder Co, Houghton, Mich		1955	120	–	1	20	BW	UF	–	–	–	PP	–	–	–	–	40	–
Ont Dept of Highways, Downsview, Ont	H H Angus	4-55	110	Sat	2	15	FWL	O	–	–	–	PP	–	–	–	–	30	–
Patuxent Institution, Jessup, Md	Whitman, Requardt Assoc	10-54	110	–	2	20	EC	OS	Pn	–	–	PP	–	O	Dr	Se	–	–
Ontario Western Hospital, Ont	H H Angus	4-55	110	Sat	{2 / 1}	{15 / 12}	Ul	{O / UF(56)}	Me	–	–	PP	0.6	O	Ov	Pr Se	42	–
U S Army, Ft Meade, Md	Anderson Nichols & Co	7-55	110	343	3	39	Ul	O	–	–	–	PP	–	O	Ov	Se	117	–
U S Army, Ft Meade, Md	Rummel, Klepper & Kahl	–	110	343	3	{2–53 / 1–8}	Wi	{OG(33) / UF [illegible]}	Pn	–	–	PP	–	–	Ov	Se	114	–
American Sterilizer Co, Erie, Pa		1-56	100	338	1	22.5	Ul	{PF / O G}	–	–	–	PP	0.4	O	Ov Dr	–	22.5	–
Briggs & Stratton Corp, Wauwatosa, Wis	Albert Kahn Assoc	1955	100	Sat	{2 / 1}	{25 / 10}	CE	{PF / O G}	–	–	–	PP	–	–	–	–	60	–
Century Mfg Co, Jackson, Miss.		–	100	–	1	30	FW	O	–	–	–	PP	0.4	O	Ov Dr	Pr Se	–	–
Grover Cleveland H S, Elizabeth, N J	Runyon & Carey	1-55	100	300	2	12	Ti	O	–	–	–	PP	–	O	–	–	–	–
Carboloy Div, GE Co, Edmore, Mich	Smith, Hinchman & Grylls	2-53	100	336	2	18	FW	O	–	–	–	–	–	–	–	–	[illegible]	–
Dominion Engrg Works, Lachine, Que		1954	100	–	1	25	CBr	O	–	–	–	–	–	–	–	–	33	–
Ford Motor Co, San Jose, Calif	Albert Kahn Assoc	3-54	100	338	3	17	CB	O	–	–	–	–	–	–	–	–	[illegible]	–
Greenwell Springs Hosp, Greenwell Springs, La		–	100	–	{1 / 1}	{17 / 8.5}	{CB / [illegible]}	O	–	–	–	PP	[illegible]	–	–	Pr Se	–	–
[illegible], Pa		10-54	100	Sat	1	10	Ke	UF(40)	–	–	–	PP	–	–	–	–	–	–
[illegible], Md	Whitman, Requardt & Assoc	9-54	100	–	2	8.2	KR	O	–	–	–	PP	–	–	–	–	[illegible]	–
McMaster Univ, Hamilton, Ont	C H Schwindt	11-54	100	Sat	1	20	FWL	UF	Me	–	–	PP	–	O	Ov	–	[illegible]	–
Reading Hospital, West Reading, Pa	Gilbert Assoc	11-54	100	328	2	18	Ke	O	–	–	–	–	–	–	–	–	[illegible]	–
[illegible]	J N Martin	4-55	100	225	2	3	CBr	O	–	–	–	–	[illegible]	O	–	Pr Se	6	–
[illegible], Ala		2-54	100	–	[illegible]	[illegible]	BW	O	–	–	–	–	–	–	–	–	–	–
[illegible], Salt Lake City, Utah	J F Heath	[illegible]55	100	225	[illegible]	45	EC	[illegible]	–	–	–	PP	2.4	{Dr / O}	[illegible]	Pr Se	45	–
[illegible], Andover, Mass	[illegible]	1-55	100	225		22	[illegible]	O	–	–	–	–	–	–	–	–	[illegible]	–

BW — Babcock & Wilcox Co
FWL — Foster Wheeler Ltd
G — Gas
GP — Self-generated power
O — Oil
Ov — Overload
PF — Pressurized furnace
Pn — Pneumatic
PP — Purchased power
Pr — Primary
RS — Riley Stoker Corp
Se — Secondary
SS — Spreader stoker
Su — Superior Combustion Industries Inc
UF — Underfeed stoker
Wi — Wickes Boiler Co

1955 Design Survey of Typical New

Compiled by Althea Thornton, Assistant Editor

Company	Location	Plant name	Consulting engineers	Unit No., new units	First operation new units	Throttle pressure, psig	Steam temp, F: Throttle	Steam temp, F: Reheat	BOILERS: Number	BOILERS: Capacity, each, 1000 lb per hr	BOILERS: Manufacturer	BOILERS: Surface, 1000 sq ft: Boiler & WW	BOILERS: Surface, 1000 sq ft: Superheater	
Detroit Edison Co	River Rouge, Mich.	River Rouge		3	10-57	2400	1050	1000	1	2000	FW	14.6	57.5	47.7
Duke Power Co	Belmont, N. C.	Allen		1	5-57	2400	1050	1000	1	1160	CE	51.0	99.5	19.7
				2	9-57	2400	1050	1000	1	1160	CE	51.0	99.5	19.7
Niagara Mohawk Power Corp	Buffalo, N. Y.	C R Huntley		67	3-57	2400	1050	1000	1	1470	CE	36.7	116.3	20.9
Commonwealth Edison Co	Will County, Ill.	Will County	Stone & Webster Engrg Corp	3	10-57	2000	1050	1050	1	1800	CE	34.6	194.0	32.7
Consolidated Edison Co of N Y Inc	New York, N. Y.	Astoria		3	1958	2000	1050	1000	1	2400	...	—	—	—
Consumers Power Co	Muskegon, Mich.	B C Cobb	Commonwealth Associates Inc	4	1956	2000	1050	1000	1	1050	CE	43.6	113.9	18.5
				5	1957	2000	1050	1000	1	1050	CE	43.6	113.9	18.5
Mississippi Valley Generating Co	West Memphis, Ark.	West Memphis	Ebasco Services Inc	1	12-57	2000	1050	1000	1	1550[6]	BW	32.8	160.4	21.2
				2	12-57	2000	1050	1000	1	1550[6]	BW	32.8	160.4	21.2
				3	12-57	2000	1050	1000	1	1550[6]	BW	32.8	160.4	21.2
Pennsylvania Electric Co	Seward, Pa.	Seward	Gilbert Associates Inc	5	4-57	2000	1050	1000	1	900	CE	25.4	89.5	13.8
Public Service Co of Oklahoma	Tulsa, Okla.	Tulsa	Black & Veatch	2	3-56	1980	1000	1000	1	1150[6]	BW	8.5	50.4	11.2
				4	3-58	1980	1000	1000	1	1150[6]	BW	8.5	50.4	11.2
Boston Edison Co	Everett, Mass.	Mystic	Jackson & Moreland	4	9-57	1800	1000	1000	1	335	CE	25.3	80.8	14.8
Dayton Power & Light Co	Dayton, Ohio	Frank M Tait	Gilbert Associates Inc	1	10-57	1800	1000	1000	1	930[7]	CE	...	—	—
Delaware Power & Light Co	near Millsboro, Del.	Indian River	United Engrs & Constructors Inc	1	6-57	1800	1000	1000	1	625	BW	12.1	36.9	17.4
Georgia Power Co	Newnan, Ga.	Yates	Southern Services Inc	4	6-57	1800	1000	1000	1	900	CE	44.7	80.9	20.2
Mississippi Power Co	near Gulfport, Miss.	Gulf Coast	Southern Services Inc	1	6-57	1800	1000	1000	1	550	CE	14.0	48.4	7.6
Oklahoma Gas & Electric Co	Muskogee, Okla.	Riverbank	Sargent & Lundy	3	5-56	1800	1000	1000	1	1200	BW	8.9[9]	62.4	15.4
Potomac Electric Power Co	Alexandria, Va.	Potomac River[10]	Stone & Webster Engrg Corp	4	3-56	1800	1050	1000	1	725	CE	36.1	72.8	14.5
Rochester Gas & Electric Corp	Rochester, N. Y.	Russell	Gilbert Associates Inc	4	3-57	1800	1050	1000	1	560	CE	16.9	53.7	8.1
Rockland Light & Power Co	Tomkins Cove, N. Y.	Lovett	Burns & Roe Inc	3	3-55	1800	1050	1000	1	500	CE	21.7	45.0	8.3
Southern California Edison Co	El Segundo, Calif.	El Segundo, Calif.	Bechtel Corp	2	9-56	1800	1000	1000	1	1140[6]	BW	13.2	78.3	20.3
	Alamitos Bay	Alamitos	Bechtel Corp	1	11-56	1800	1000	1000	1	1140[6]	BW	13.2	78.3	20.3
				2	9-57	1800	1000	1000	1	1140[6]	BW	13.2	78.3	20.3
Virginia Electric & Power Co	Yorktown, Va.	Yorktown	Stone & Webster Engrg Co	1	7-57	1800	1000	1000	1	1200[6]	CE	59.7	90.1	19.2
Carolina Power & Light Co	Wilmington, N. C.	Wilmington	Ebasco Services Inc	2	4-55	1450	1000	1000	1	775	BW	17.6	46.6	35.2
Central Illinois Light Co	Peoria, Ill.	R S Wallace	Commonwealth Associates Inc	7	8-57	1450	1000	1000	1	690	RS	38.4	33.6	35.8
Central Illinois Public Service Co	Grand Tower, Ill.	Grand Tower	Sargent & Lundy	4	9-57	1450	1000	1000	1	700	BW	17.7	45.4	37.7
Central Louisiana Electric Co Inc	Baldwin, La.	Teche	Sargent & Lundy	2	3-56	1450	1000	1000	1	350[6]	RS	6.3	16.0	13.8
Dallas Power & Light Co	Dallas, Texas	Parkdale	Ebasco Services Inc	3	2-57	1450	1000	...	1	1050[6]	BW	...	—	—
Florida Power & Light Co	South Florida	Becntel Coro		4	5-57	1450	1000	1000	1	1100[6]	BW	14.9	—	—
				5	5-58	1450	1000	1000	1	1100[6]	BW	14.9	—	—
Florida Power Corp	Ellaville, Fla.	Suwannee River	Black & Veatch	2	11-54	850	900	...	1	350	BW	27.7	13.9	N
				3	11-56	1450	1000	1000	1	660	RS	29.3	28.7	18.7
Gulf States Utilities Co	Beaumont, Texas	Neches[14]	Stone & Webster Engrg Corp	7	4-56	1450	1000	1000	1	700[6]	CE	21.7	—	—
Kansas Power & Light Co	Lawrence, Kansas	Lawrence	Black & Veatch		3-55	1450	1000	1000	1	475	CE	20.4	—	—
	Tecumseh, Kansas	Tecumseh	Bechtel Corp	6	11-55	850	900	...	...	...	...	...	—	—
San Diego Gas & Electric Co	Carlsbad, Calif.	Encina	Pioneer Service & Engrg Co	2	3-56	1450	1000	1000	1	700	BW	11.3	27.7	16.9
Southwestern Gas & Electric Co	Mooringsport, La.	Lieberman	Sargent & Lundy	3	4-57	1450	1000	1000	1	725[6]	CE	29.5	30.3	9.3
Tampa Electric Co	Tampa, Fla.	Gannon	Stone & Webster Engrg Corp	1	6-57	1450	1000	1000	1	900[6]	BW	...	—	—
United Illuminating Co	Bridgeport, Conn.	Bridgeport Harbor	Jackson & Moreland	1	7-58	1450	1000	1000	1	575	BW	...	—	—
Western Massachusetts Electric Co	West Springfield, Mass.	West Springfield	Stone & Webster Engrg Corp	3	7-57	1450	1000	1060	1	750	CE	19.0	40.3	9.7
Columbus & Southern Ohio Electric Co	south of Columbus, Ohio	Priway	Commonwealth Associates Inc	5	11-55	1250	950	...	1	900[15]	RS	46.1	45.8	N
Madison Gas & Electric Co	Madison, Wis.	Blount St.	Pioneer Service & Engrg Co	6	9-57	1250	950	...	1	425	BW	9.0	9.0	N
Southwestern Public Service Co	Hobbs, N. Mex.	Cunningham		1	3-57	1250	950	...	1	625[6]	CE	16.6	—	N
Nova Scotia Light & Power Co Ltd	Halifax, N. S.	Water St.		6	7-57	900	900		1	500	BWG	25.8	17.6	N
Calgary Power Co Ltd	Wabamun, Alberta	Wabamun	Montreal Engrg Co Ltd	2	4-56	850	900		1	625	BWG	33.4	44.3	N
Central Power & Light Co	Corpus Christi, Texas	Corpus Christi	Sargent & Lundy	2	4-55	850	900		1	630	BW	32.5	15.8	N
El Paso Electric Co	El Paso, Texas	Rio Grande	Stone & Webster Engrg Corp	5	6-57	950	900		1	450	BW	24.5	9.9	N
Interstate Power Co	Lansing, Iowa	Lansing	Sargent & Lundy	3	3-57	850	900		1	300	RS	35.0	13.2	N
Iowa Electric Light & Power Co	Marshalltown, Iowa	Sutherland		1	7-55	850	900		1	325	RS	33.7	8.3	N
				2	3-56	850	900		1	325	RS	33.7	8.9	N
Pacific Gas & Electric Co	south of Eureka, Calif.	Humboldt Bay	Bechtel Corp		5-56	850	900		1	475[9]	BW	25.7	17.0	N

AC – Allis-Chalmers Mfg Co
Ag – Admiralty
AdBr – Admiralty brass
AdI – Admiralty, inhibited
Al Br – Aluminum bronze
AsAd – Arsenical admiralty
AsCu – Arsenical copper
AsA Br – Arsenical aluminum brass

BB – Brown Boveri Corp
BW – Babcock & Wilcox Co
BWG – Babcock-Wilcox & Goldie-McCulloch Ltd
C – Coal, bituminous
CE – Combustion Engineering Inc
CES – Combustion Engineering-superheater Inc

CNi – Cupro nickel
Con – Condenser Jeberation
Cu – Copper
Cy – Cyclone furnace
D – Damper
DB – Dry bottom
EL – Elliott Co
FW – Foster Wheeler Corp
G – Natural gas
GE – General Electric Co
Hy – Hydraulic coupling
L – Lignite
M – Motor drive
Ma – Magnetic coupling
MI – Murray Iron Works Co

Mp – Two motors per fan
Mu – Muntz metal
MV – Metropolitan-Vickers Electrical Co Ltd
N – None
O – Oil
P – Pulverized
PAd – Phosphorized admiralty
Pl – Plate

Unit rating, gross kw	Heat release, 1000 Btu per cu ft per hr	Furnace bottom	Economizer surface per boiler, 1000 sq ft	Air-heater surface per boiler, 1000 sq ft	Air-heater type	F-D FANS: Drive	F-D FANS: Air-flow control	I-D FANS: Drive	I-D FANS: Gas flow control	Firing	FUELS: Type	FUELS: Heating value 1000 Btu per lb	FUELS: Ash-softening temperature, F	FEED PUMPS: Drive	FEED PUMPS: Flow control	TURBINES: Number	TURBINES: Capability, each 1000 kw	TURBINES: Manufacturer	TURBINES: Backpressure, psia	TURBINES: No. bleed points	Full-load deaerator pressure, psia	CONDENSERS: Surface, 1000 sq ft	CONDENSERS: No. water passes	CONDENSERS: Tube material	Total boiler capacity incl new units, 1000 lb per hr	Total generator capability incl new units, 1000 kw
150.0	14.2	DB	142.6	894.9	Re	M	V	M		P	C	11.7	2200	3 M	Hy	1	300[1]	AC	0.5	7	Con	170	1	Ac	4430	820
112.5	14.0	DB	96.5	601.6	Re	M	V	M	Hy	P	C	13.5	2260	2 M	Hy	1	225	GE	0.75	6	Con	105	2	?	3320	350
112.5	14.0	DB	96.5	601.6	Re	M	V	M	Hy	P	C	13.5	2260	2 M	Hy	1	225	GE	0.75	6	Con	105	2	?		
104.0	17.8	DB	98.0	611.6	Re	M	V	M	D	P	C	12.1	2170	2 T	S	1	208[1]	GE	0.5	7	Sc	90	1	Ac	9817	1050
100.0	12.2	DB	60.7	423.6	Re	M	V	M	Hy	F	C	10.6	2000	3 M	Hv	1	275[1]	GE	0.5	7	32	140	1	PAc	4200	605
	...	DB			Re	M	...		...	P,O,G	C,O,G	13.6	2120	...	...	1	338[1]	GE	0.5	7	175	187	1	AlBr	5140	700
65.0	20.7	DB	80.7	317.5	Tu	M	V	M	D	P	C	11.0	2100	3 M	Fl	1	166[3]	WE	1.25	6	Con	70	2	AsAc	3900	516.5
65.0	20.7	DB	80.7	317.5	Tu	M	V	M	D	P	C	11.0	2,00	3 M	R	1	156[3]	GE	1.25	6	Con.	70	1	Ast		
94.0	25.1	ST[4]	N	446.2	Tu	M	V	[4]	...	Cy	C	10.0	1950	4 M	R	1	234[6]	WE	0.5	7	109	110	2	Act		
94.0	25.1	ST[4]	N	446.2	Tu	M	V	[4]	...	Cy	C	10.0	1950	4 M	R	1	234[6]	WE	0.5	7	109	110	2	Act	4650	702
94.0	25.1	ST[4]	N	446.9	Tu	M	V	[4]	...	Cy	C	10.0	1950	4 M	R	1	234[6]	WE	0.5	7	109	110	2	Act		
94.0	12.9	DB	80.3	478.6	Re	M	V	M	V	P	C	11.1	2275	3 M	S	1	337.5	GE	0.75	7	90	65	1	Sst	2290	294.5
51.2	36.0	[4]	15.1	205.0	Tu	M	D	[4]		O,G	O,G	18.0		3 M	R	1	120[3,6]	WE	1.25	5	85	120	1	AsCu	2550	500
51.2	36.0	[4]	15.1	204.0	Tu	M	D	[4]		O,G	O,G	19.0		3 M	R	1	175[3,6]	WE	1.25	5	85	120	2	AsCu		
58.9	23.3	DB	15.4	223.6	Re	M	V	M		P,O	C,O	13.5	2200	3 M		1	125[3]	GE	0.75	6	160	75	1	AlBr	2225	275
	13.5	DB	...	...	Re	M	V	M		P	C	12.0	2500	3 M	P	1	140	GE	0.75	7	165	90	1	Ac	2430	300
47.6	17.0	DB	20.3	166.2	Re	M	V	M	V	P	C	13.1	2200	2 M	R	1	75	WE	0.75	6	66.7	50	1	...	625	75
53.0	13.2	DB	25.6	202.1	Re	M	Hv	M	Hy	P,G	C,G	11.6	2550	3 M	Hy	1	125[2]	GE	0.75	5	75.5	90	1	Ac	3625	425[2]
42.4	18.0	DB[4]	7.5	144.3	Re	M	O,Hv	[4]	...	G	G	1000[8]	...	2 M	Hy	1	75	GE	0.75	5	75	65	2	AlBr	550	75
78.6	21.5	DB	20.4	227.0	Re	M	V	...		G,O	C,O	1100[8]	....	3 M	Hv	1	171	GE	1.0	6	125	80	2	PAd	1500	196
63.0	....	DB	24.6	248.0	Tu	M	D	M	S Ma	P	C	13.0	2000	3 M	S,Hy	1	100[3]	GE	0.5	7	79.5	70	2	Ac	3050	380
54.1	13.6	ST	10.6	210.8	Re	M	V	M	D	P	C	15.2	2100	3 M	R,Hy	1	82.5	GE	0.5	6	Con	46	2	Act	1980	275
27.2	22.5	DB	20.0	83.5	Tu	M	V	M	Hy	P,O,G	C,O,G	13.0	2000	2 M	Hy	1	66[3]	GE	0.5	6	93.7	46.6	1	Ac	900	110
83.0	18.5	DB	N	339.0	Re	M	D,V	M	D,V	O	O[5]	....	.....	2 M	R	1	156[6]	GE	0.75	7	19.7	90	2	AsAlBr	2280	300
83.0	18.5	DB	N	339.0	Re	M	D V	M	D,V	O,G	O,G	...	....	2 M	R	1	156[6]	GE	0.75	7	19.7	90	2	AsAlBr	2280	300
83.0	18.5	DB	N	339.0	Re	M	D V	M	D,V	O,G	O,G	....	....	2 M	R	1	156[6]	GE	0.75	7	19.7	90	2	AsAlBr		
—	17.6	DB	33.6	217.2	Re	M	V	M	D	P,G	C,G[11]	14.5	1800	3 M	Hy	1	150[2]	GE	0.75	7	....	80	1	...	1200	150
55.3	20.3	DB	9.5	101.3	Re	M	D	M	D	P	C	13.8	2400	3 M	R	1	100[3]	GE	1.25	5	.	70	2	Mu	1425	220
63.7	15.7	DB	9.0	140.6	Re	M	Hv	M	Hv	P	C	9.8	1900	2 M	Hy	1	130[3]	WE	1.25	5	..	56	2	Ac	2130	315
53.1	17.5	DB	10.7	122.5	Re	M	V	M	Hy	P	C	11.0	2100	2 M	Hv	1	100[3]	WE	0.75	5	100	70	2	AsCu	1820	220
16.9	29.2	[4]	7.0	76.6	Re	M	V	[4]	...	G	G	1080[8]	...	2 M	R	1	54[6]	GE	0.75	6	76.5	35	2	Ac	550	78
—	...	[4]	...	...	Re	M	V	[4]	...	O,G	O,G	19.0	.....	3 M	R	1	125[6]	GE	1.25	4	Con	75	2	AsCu	2675	327
61.1	24.3	DB	11.2	144.4	Re	M	D	M	D	O	O	16.5	.....	3 M	R	1	125[6]	WE	1.75	6	Con	80	4	AlBr	2190	410
61.1	24.3	DB	11.2	144.4	Re	M	D	M	D	O	O	18.3	.....	3 M	R	1	125[6]	WE	1.75	6	Con	80	1	AlBr		
22.3	19.6	DB	N	88.0	Re	M	V	M	D	O,G[12]	O,G[12]	18.4	.....	..[13]	R	1	81[3]	WE	1.25	5	26.8	30	2	AsCu	1300	132
35.5	22.8	DB	11.2	106.6	Re	M	V	M	D	O,G	O,G	18.2	.....	3 M	R	1	70[3]	GE	1.0	5	56	55	1	Act		
47.0	....	[4]	...	...	Re	M	V	[4]	...	G	G	1050[8]	.....	2 M	R	1	111[3,6]	WE	1.25	5	75	65	2	CNi	2000	375
28.4	....	ST	15.4	110.0	Re	M	D,V	M	D,V	P,O,G	C,O,G	.....	....	2 M	R	1	62.5	GE	0.75	5	....	40	2	Ac	950	110
...	...	...	...	...	...	...	...	...	...	....	...	...	.....	...	...	1	33[3]	AC	0.75	5	Con	30	2	Act	1300	116
45.0	22.0	...	17.4	102.0	Re	M	O,Hv	M	D,Hy	O,G	O,G	17.9	.....	2 M	Hy	1	100	GE	0.75	5	105	60	2	AlBr	1400	200
52.3	17.7	[4]	20.9	128.6	Re	M	V	[4]	.	G	G	1040[8]	....	2 M	Hv	1	100[3]	WE	1.0	5	100	65	2	AsCu	1225	150
45.6	....	...	15.5	94.4	Re	M	...	M	...	...	C	11.8	....	3 M	R	1	120[3]	GE	0.75	5	....	75	1	CNi[22]	900	120
—	....	[4]	...	...	...	M	...	[4]	...	Cy	C,O	...	....	2 M	R	1	75[3]	GE	0.75	6	75	45	.	AlBr	540	75
68.5	15.1	DB	30.8	210.2	Re	M	Hv	M	Hv	F	C	12.0	2150	3 M	Hy	1	100[3]	GE	1.25	5	80	55	2	PAd	1550	196
80.0	12.0	DE	14.2	476.4	Re	M	Hv	M	Hv	F	C	10.5	2300	2 M	Hy	1	100	WE	0.75	5	Con	60	2	AsCu	2750	250
25.5	19.6	DB	10.7	74.5	Re	M	V	M	Hv	P	C	11.5	2150	2 M	Hy	1	44[3]	AC	0.75	5	64	25	2	Ac	1385	133
35.7	22.4	[4]	24.5	101.4	Re	M	D,V	[4]	...	G	G	1000[8]	...	2 M	Hv	1	75[3]	GE	1.0	5	76.6	60	2	AsAc	665	75
16.2	....	ST	3.2	107.5	Tu	M	D	...	...	Cy,O	C,O	12.5	1900	...	R	1	45.5	MV	0.75	5	79.6	31	2	Yo	1520	138
56.9	16.9	DE	10.0	73.6	Re	M	D,V	M	D	G	G[16]	G[16,18]	1,775[8]	....	...	2 M	R	.	66[3]	MV	0.75	5	75	46	2	Ac	...	...
27.9	30.0	[4]	...	188.2	Tu	M	C	[4]	...	C,O	C,O	1050[8,15]	...	2 M	F	.	66[3]	GE	1.25	4	77	60	1	AsAc	1300	132
17.8	32.0	[4]	N	75.9	Re	M	V	[4]	.	G,O	G,O	1000[8]	...	2 M	R	1	44[3]	WE	1.0	5	76	35	2	Ac	...	...
23.5	16.5	ST	...	91.9	Re	M	V	M	Mg	F	C	10.5	2100	M	Hy	.	33[3]	AC	0.75	4	90	22.5	2	Ac	540	65
23.0	...	DE	...	49.4	Re	M	V	M	Hy	P,G	C,G	8.9	2100	...[19]	R	.	33[3]	GE	1.25	5	75	22.5	2	Ac	550	66
23.0	...	DB	...	49.4	Re	M	V	M	Hv	P,G	C,G	8.9	2100	...[19]	R	.	33[3]	GE	1.25	5	75	22.5	2	Ac		
16.2	22.0	DE	N	66.1	Re	M	D V	M	O	C	O	16.5	...	1M 1T	R	.	50[6]	WE	0.75	5	88	27.5	2	AlBr	475	56

R – Regulator
Re – Regenerative
RS – Riley Stoker Corp
S – Speed control
SP – Springfield Boiler Co
SS – Spreader stoker
ST – Stephens
Sup – Superior
T – Turbine drive
TC – Traveling grate stoker
Tu – Tubular
UF – Underfeed stoker
V – Vane control
WE – Westinghouse Electric Corp
Wi – Wickes Boiler Co
WO – Worthington Corp
Ya – Yarnall-Waring
(318 – Stoker grate area, sq ft

1 – At 3600 rpm, to 1800 rpm
2 – Nameplate rating
3 – Preferred standard unit
4 – Pressurized furnace
5 – High viscosity oil
6 – Outdoor installation
7 – Monotube boiler
8 – Btu per cu ft
9 – Boiler only, furnace 18.4
10 – Revised data, previously listed 9-53
11 – Delayed refinery coke
12 – Future coal
13 – 3 motor-driven pumps for 2 boilers
14 – Revised data, previously listed 9-54
15 – Semi-outdoor boiler
16 – Future pulverized
17 – Modified for 1450 psig operation
18 – Future lignite
19 – Owned by Central Iowa Power Cooperative, but operated by Iowa Electric Light and Power Co
20 – One automatic, one uncontrolled
21 – Fusion temperature
22 – 90-10

19[illegible] Design Survey: Typical Hydroelectric

Compiled by F A Annett
Contributing Editor

Company or government agency	Design or consulting engineers	Project name	[1]New or redeveloped	River	State	Project started, date	[2]Dam type	Crest length, ft	Max height, ft	[3]Type of installation
NEW ENGLAND STATES										
Central Maine Power Co	Chas T Main Inc; Nepsco Services Inc	Indian Pond	New	Kennebec	Me	1952	CG	500	180	I
Central Maine Power Co	Central Maine Power Co	Bar Mills	Red	Saco	Me.	1955			.	I
Rumford Falls Power Co	Chas T Main Inc	Lower Station	Red	Androscoggin	Me	1953				I
St Croix Paper Co	Chas T Main Inc	Woodland	Red	St Croix	Me	1954		.	.	I
Claremont Paper Mill		Claremont	Red		N H	1953				I
Connecticut River Power Co	Chas T Main Inc; N E Power Service Co	Littleton	New	Connecticut	N. H. & Vt	1952	C&E	3,148	180	I
Swanton Electric Light Dept	Chas T Main Inc	Highgate Falls	Red	Missisquoi	Vt	1953	CG	300	20	I
American Writing Paper Co		Holyoke	New		Mass	1953	.	.	.	I
Merrimac Paper Co		Lawrence	Red		Mass	1953				I
Electric Power Inc	Chas T Main Inc	Shepaug	New	Housatonic	Conn	1953	CG	1 412	139	I
MIDDLE ATLANTIC STATES										
Power Authority of the State of N Y	Sanderson & Porter; Uhl, Hall and Rich		New	St Lawrence	N. Y	1954	CG; CG	3 200; 3 100	172; 126	S
Niagara Mohawk Power Corp	Niagara Mohawk Power Corp	South Colton	New	Raquette	N Y	1952	C&E	500	40	I
Niagara Mohawk Power Corp	Niagara Mohawk Power Corp	Five Falls	New	Raquette	N Y	1953	C&E	500	50	I
Niagara Mohawk Power Corp	Niagara Mohawk Power Corp	Rainbow Falls	New	Raquette	N Y	1954	C&E	400	73	I
Niagara Mohawk Power Corp	Niagara Mohawk Power Corp	Blake Falls	New	Raquette	N Y	1955	C&E	600	50	I
Niagara Mohawk Power Corp	Niagara Mohawk Power Corp	Stark	New	Raquette	N Y	1956	C&E	235	40	I
Rockland Light & Power Co		Grahamsville	New		N Y	1952	Note 5		.	I
Brownville Board Co		Brownville	Red		N. Y	1954				I
Gould Paper Co		Lyons Falls	Red		N Y	1953				I
N Y State Electric & Gas Corp		Cadyville	New		N Y	1954		.		I
EAST NORTH CENTRAL STATES										
Crystal Falls Light Dept		Crystal Falls	New		Mich.	1953		.		I
St Louis Municipal Elec Lt & Wtr Pl		St Louis	Red		Mich	1953				I
Consumers Power Co			Red.		Mich	1953				I
Consolidated Water Pwr & Paper Co		Wisconsin Rapids	Red		Wis	1953				I
Kimberly-Clark Corp	Company engineering staff	Quinnesec	Red	Menominee	Wis	1954	CG	204	22	I
Kansas City Star		Park Falls	New		Wis.	1954				I
Whiting Plover Paper Co		Stevens Point	Red		Wis	1954			.	I
WEST NORTH CENTRAL STATES										
St Anthony Water Power Co	Pioneer Service & Engrg Co	Hennepin Island Unit No 5	Red	Mississippi	Minn	1954				I
Lanesboro Public Utilities		Lanesboro	Red.		Minn	1954				I
Amana Woolen Mills		Amana	New		Iowa	1954				I
U S Corps of Engineers	U S Corps of Engr, Chas T Main Inc	Garrison	New	Missouri	N D	1945	EF	12 000	210	I
U S Corps of Engineers	U S Corps of Engr, Chas T Main Inc	Oahe	New	Missouri	S D	1948	EF	9 300	242	I
U S Corps of Engineers	U S Corps of Engr, Erik Floor & Assoc	Fort Randall	New	Missouri	S D	1946	EF	10 500	160	I
U S Corps of Engineers	U S Corps of Engr, Harza Engrg Co	Gavins Point	New	Missouri	S D & Neb	1948	EF	8 700	74	I
SOUTH ATLANTIC STATES										
Appalachian Electric Power Co	American Gas & Elec Service Corp	Niagara	Red	Roanoke	Va	1953				I
Virginia Electric & Power Co	Stone & Webster Engrg, Chas T Main, Inc	Roanoke Rapids	New	Roanoke	N C	1952	CG	3 050	72	S
Nantahala Power & Light Co	Aluminum Company of America	Bear Creek	New	E Fork Tuckasegee	N C	1952	EF RF	740	215	I
Nantahala Power & Light Co	Aluminum Company of America	Tennessee Creek	New	E Fork Tuckasegee	N C.	1952	EF RF	810; 335	135; 135	I
Tapoco Inc	Aluminum Company of America	Chilhowee	New	Little Tennessee	Tenn	1955	EF RF	1 4.0	82	I
Marter Mills		Lexington	Red.		S C.	1953				I
Marter Mills		Cherokee Falls	Red		S C	1954				I
U S Corps of Engineers	U S Corps of Engineers; Erik Floor & Associates	Buford	New	Chattahoochee	Ga	1950	Earth	. 630	192	I
Crisp County Power Commission	J E Sirrine Co and Emmet S Killebrew	Flint River	New	Flint	Ga	1928	CG	450	30	I
Juliette Milling Co		Macon	New		Ga	1953				I
Georgia Power Co	Georgia Power Co	Goat Rock	New	Chattahoochee	Ga	1954	CG	1 549	57	I
U S Corps of Engineers	U S Corps of Engineers	Jim Woodruff	New	Apalachicola	Fla	1947	CG	[illegible]	105	I
EAST SOUTH CENTRAL STATES										
Tennessee Valley Authority	Tennessee Valley Authority	Chatuge	New	Hiwassee	N C	1941	EF	[illegible]	144	I
Tennessee Valley Authority	Tennessee Valley Authority	[illegible]	New	French Broad	Tenn	1942	[illegible]	705	202	S
Tennessee Valley Authority	Tennessee Valley Authority	Nottely	New	Nottely	Ga	1941	E&RF	2 300	84	I
Tennessee Valley Authority	Tennessee Valley Authority	Hiwassee	New	Hiwassee	N C	1937	CG	1 [illegible]	308	S
							This unit also operates in reverse			
Tennessee Valley Authority	Tennessee Valley Authority	Ft Patrick Henry	New	S Fork Holston	Tenn	1951	[illegible]	[illegible]	[illegible]	I
U S Corps of Engineers	U S Corps of Engr, Ambursen Engr Corp	Old Hickory	New	Cumberland	Tenn	1951	[illegible]	3 [illegible]	98	I
U S Corps of Engineers	U S Corps of Engineers	Cheatham	New	Cumberland	Tenn	1950	[illegible]	[illegible]	[illegible]	I
WEST SOUTH CENTRAL STATES										
U S Corps of Engineers	U S Corps of Engineers	Table Rock	New	White	Ark	1952	[illegible]	[illegible]	252	I
U S Corps of Engineers	Harza Engineering Co	Blakely Mountain	New	Ouachita	Ark	1947	Earth	[illegible]	[illegible]	I
MOUNTAIN STATES										
U S Bureau of Reclamation	U S Bureau of Reclamation	[illegible]	New	Colorado-Big Thompson	Colo	1950				I; S
U S Bureau of Reclamation	U S Bureau of Reclamation	[illegible]	New	Colorado-Big Thompson	Colo	1951		This unit operates in reverse		
La Plata Electric Association	La Plata Electric Association	Pagosa Springs	Red	San Juan	Colo	1952				I
[illegible]		[illegible]	New		Utah	1953				I
[illegible]		Red Creek	New	Red Creek	Utah	1954				I
[illegible]		[illegible]	New		Nev	1954				I
[illegible]	[illegible]	[illegible]	New	[illegible]	Wyo	1952	[illegible]	[illegible]	[illegible]	I
[illegible]	U S Bureau of Reclamation	[illegible]	New	North Platte	Wyo	[illegible]	EF	753	255	I
U S Bureau of Reclamation	U S Bureau of Reclamation	[illegible]	New	North Platte	Wyo	1954	EF	1 840	207	I
[illegible]	[illegible]	[illegible]	New	Flathead	Mont	[illegible]	[illegible]	335	200	I
U S Bureau of Reclamation	U S Bureau of Reclamation	[illegible]	New	Missouri	Mont	1949	[illegible]	1 200	[illegible]	I
U S Corps of Engineers	[illegible]	[illegible]	New	Pend Oreille	Idaho	1951	[illegible]	[illegible]	[illegible]	I
U S Bureau of Reclamation	U S Bureau of Reclamation	[illegible]	New	Snake	Idaho	1952	EF	1 200	260	I
[illegible]		[illegible]	New	[illegible]	Idaho	[illegible]				

[1] The term "New" applies to a project on a site [illegible] not developed before. "Redeveloped" indicates a [illegible]

[2] [illegible] CG = concrete gravity; C&E = concrete and earth [illegible] EF = earth fill; RF = rock fill [illegible]

sector gates, C&R = sluiceways and rock fill [illegible]

[3] [illegible] I = indoor; S = semi-outdoor; O = outdoor; U = underground

CAC — Canadian Allis-Chalmers Ltd
CGE — Canadian General Electric Co Ltd
CVC — Canadian Vickers Ltd
CWC — Canadian Westinghouse Co Ltd
DEC — Dominion Engineering Co Ltd
[illegible]

1955 Design Survey: Typical Hydroelectric

Compiled by F. A. Annett
Contributing Editor.

Company or government agency	Design or consulting engineers	Project name	[1] New or redeveloped	River	State	Project started, date	[2] Dam type	Crest length, ft	Max height, ft	
PACIFIC COAST STATES										
U. S. Corps of Engineers	U. S. Corps of Engineers	Chief Joseph	New	Columbia	Wash	1949	CG	2,315	235	I
U. S. Corps of Engineers	U. S. Corps of Engineers	McNary	New	Columbia	Wash	1947	CG&EF	3,000	157	I
U. S. Corps of Engineers	U. S. Corps of Engineers	The Dalles	New	Columbia	Wash & Ore	1951	CG			I
U. S. Corps of Engineers	U. S. Corps of Engineers	The Dalles Fishway	New	Columbia		1951				
PUD No. 1 Pend Oreille County	Harza Engineering Co	Box Canyon	New	Pend Oreille	Wash	1952	SG	200	105	I
City of Seattle	Dr J L Savage	Ross	New	Skagit	Wash	1937	CA	1,300	540	I
Centralia Municipal Light Dept		Nesqually No 1	New	Nesqually	Wash	1953				I
U. S. Bureau of Reclamation	U. S. Bureau of Reclamation	Chandler	New	Yakima	Wash	1953	CG	758	8	I
U. S. Bureau of Reclamation	U. S. Bureau of Reclamation	Chandler	New	Yakima	Wash.	1953	CG	758	8	I
California Oregon Power Co	Pioneer Service & Engrg Co	Lemolo No. 1	New	North Umpqua	Ore	1953	RFCF	385	120	O
California Oregon Power Co	Pioneer Service & Engrg Co	Lemolo No. 2	New	North Umpqua	Ore	1953	CS&B	195	25	O
U. S. Corp of Engineers	U. S. Corps of Engineers	Big Cliff	New	North Santiam	Ore	1951	CG	295	172	I
U. S. Corps of Engineers	U. S. Corps of Engr. Stevens & Thompson Engrs	Lookout Point	New	Middle Fork Willamette	Ore	1949	CG&EF	4 ?40	258	I
U. S. Corps of Engineers	U. S. Corps of Engineers	Dexter	New	Middle Fork Willamette	Ore	1953	EF	? 335	80	I
Pacific Gas & Electric Co	Pacific Gas & Electric Co	Murphys	Red.	North Fork Stanislaus	Calif	1953	CG CS&B			O
Pacific Gas & Electric Co	Pacific Gas & Electric Co	Pit No. 4	New	Pit	Calif	1953	CG S&B	415	74	
Pacific Gas & Electric Co	Pacific Gas & Electric Co	Poe	New	Feather	Calif	1954	CG	400	60	S
Pacific Gas & Electric Co	Pacific Gas & Electric Co	Butt Valley	New	Feather	Calif		HF	1,250	130	I
Pacific Gas & Electric Co	Pacific Gas & Electric Co	Caribou No. 2	New	Feather	Calif		HF	1,070	80	I
Pacific Gas & Electric Co	Pacific Gas & Electric Co	Belden	New	Feather	Calif		CG	505	150	I
Los Angeles Dept. of Water & Power	Prof F J Converse, Ralph R Proctor; Chas T Leeds & Chester Marliave	Pleasant Valley	New	Owens	Calif	1954	EF	530	116	O
Imperial Irrigation District	Gibbs & Hill Inc	Pilot Knob	New	All-American Canal	Calif.	1954				I
U. S. Corps of Engineers; U. S. Bureau of Reclamation	U. S. Bureau of Reclamation; U. S. Corps of Engineers	Folsom	New	American	Calif.	1947	CG&EF	10,230	340	S
U. S. Bureau of Reclamation	U. S. Bureau of Reclamation	Nimbus	New	American	Calif	1952	CG	313	50	S
U. S. POSSESSIONS										
Petersburg Light & Power Co			New		Alaska	1954				I
N. Y. Alaska Gold Dredging Corp	Company engineers	Nyac	New	Tuluksak	Alaska	1954				S
U. S. Bureau of Reclamation	U. S. Bureau of Reclamation	Eklutna	New	Lake Eklutna	Alaska	1951	EF			I
Ketchikan Public Utilities	W D Shannon & Associates	Beaver Falls	New	Beaver Falls Creek	Alaska	1953	RF	140	31	I
Metlakatla Indian Community	Hubbell & Waller Engrg Corp	Purple Lake	New		Alaska	1954				I
Puerto Rico Water Resources Authority	Jackson & Moreland	Yauco No 1	New	Guayo	P. R.	1953	CG	585	190	I
Puerto Rico Water Resources Authority	Jackson & Moreland	Yauco No 2	New	Yuaco	P. R.	1952	CG	591	178	I
Panama Canal Co		Gatun Hydro	Red	Chagres	Canal Zone	1954				I
CANADA					Province					
Union Electric Light & Power Co Ltd		Port Union	New	Trinity	N. F.	1954				I
Iron Ore Co of Canada Ltd	Montreal Engineering Co	Menihek	New	Ashuanipi	Lab. N. F.	1952	CG&EF	24,000	50	I
Nova Scotia Light & Power Co	Montreal Engrg Co & N.S. Light & Pwr Co	Nictaux Lake	Red	Nictaux	N. S.	1952	REF	1,000	30	I
Nova Scotia Power Commission	K. E. Whitman	Lower Great Brook	New	Mersey	N. S.	1954	EFCW	2,270	25	I
New Brunswick Electric Power Comm	Shawinigan Engineering Co	Beechwood	New	St John	N. B.	1955	CG	550	100	I
Quebec Hydro-Electric Commission	H G Acres & Co. Frazer Brace Engrg	Rapide No. 2	New	Ottawa	Que	1951	CG	1,025	110	I
Quebec Hydro-Electric Commission	H G Acres & Co	Bersimis-Lac Casse	New	Bersimis	Que.	1953	RF	2,215; 1,042	200; 230	U
Shawinigan Water & Power Co	Shawinigan Engineering Co	Trenche	New	St Maurice	Que.	1945	CG			I
Shawinigan Water & Power Co	Shawinigan Engineering Co	Rapide Blanc	New	St Maurice	Que	1930	CG		132	I
Shawinigan Water & Power Co	Shawinigan Engineering Co	La Tuque	New	St Maurice	Que	1938	CG	1,325	131	I
Gatineau Power Co		Paugan	New	Gatineau	Que	1926	CG			I
Northern Quebec Power Co Ltd	Power Corp of Canada Ltd	Quinze	New	Ottawa	Que	1921	C&R	2,500	50	I
Lake Megantic Municipal Corp		[illegible]	New	Chaudiere	Que	1952				I
[illegible] Power Co	Chacier, Hunter & Co	Marguerite	New	Marguerite	Que	1951	CC	450	100	I
Hydro-Electric Power Comm of Ontario	Hydro-Electric Power Comm of Ontario	Sir Adam Beck-Niagara No. 2	New	Niagara	Ont	1950				I
Hydro-Electric Power Comm of Ontario	Hydro-Electric Power Comm of Ontario	Sir Adam Beck-Niagara No. 2	New	Niagara	Ont	1954	RF	21,357	68	O
Hydro-Electric Power Comm of Ontario	Hydro-Electric Power Comm of Ontario	Pine Portage	New	Nipigon	Ont	1947	CG	3,000	150	I
Hydro-Electric Power Comm of Ontario	Hydro-Electric Power Comm of Ontario	Manitou Falls	New	[illegible]	Ont	1953	CG	[illegible]	[illegible]	I
Hydro-Electric Power Comm of Ontario	Hydro-Electric Power Comm of Ontario	Canadian Powerhouse	New	St Lawrence	Ont	1954	[illegible]	[illegible]	[illegible]	S
[illegible]	[illegible] engineers	Fort Francis	Red	Rainy	Ont	1954	[illegible]	[illegible]	[illegible]	I
[illegible]	[illegible]	[illegible] Falls	New	Michipicoten	Ont	1951	C&E	[illegible]	[illegible]	I
[illegible]	H G Acres & Co	McArthur Falls	New	Winnipeg	Man	1952	[illegible]	[illegible]	[illegible]	I
[illegible] Power Co	Montreal Engineering Co	[illegible]	New	Bow	Alta	1953	[illegible]	[illegible]	[illegible]	I
[illegible] Power Co	Montreal Engineering Co	[illegible]	New	Bow	Alta	1952				I
[illegible] Power Co	Montreal Engineering Co	[illegible]	New	Kananaskis	Alta	1954	EF	[illegible]	[illegible]	I
[illegible] Power Co	Montreal Engineering Co	[illegible]	New	Kananaskis	Alta	1954	REF	2,200	[illegible]	I
[illegible]	[illegible]	[illegible]	New	Nechako	B. C.	1951	RF	[illegible]	313	U
[illegible]	[illegible]	[illegible]	New	Bridge	B. C.	1949	EF	1,100	232	I
[illegible]	[illegible]	[illegible]	New	[illegible]	B. C.	1954	[illegible]	[illegible]	[illegible]	I
[illegible]	[illegible]	[illegible]	New	[illegible]	B. C.	1954	EF	[illegible]	30	I
[illegible]	[illegible]	[illegible]	Red	[illegible]	B. C.	[illegible]	[illegible]	[illegible]	[illegible]	I
[illegible]	[illegible]	[illegible]	New	[illegible]	B. C.	1952	[illegible]	[illegible]	[illegible]	I
[illegible]	[illegible]	[illegible]	New	[illegible]	B. C.	[illegible]				
[illegible]	[illegible]	[illegible]	New	[illegible]	B. C.	[illegible]	[illegible]	[illegible]	150	I
[illegible]	[illegible]	[illegible]	Red		B. C.	[illegible]				I
[illegible]	[illegible] engineers	[illegible]	New	[illegible]	[illegible]	[illegible]	EF	[illegible]	25	I

[illegible] ... gates; C&R — causeways and rock fill; TC [illegible]

[illegible]

CAC — Canadian Allis-Chalmers Ltd
CGE — Canadian General Electric Co Ltd
C[illegible] — Canadian [illegible] Ltd
CWC — Canadian Westinghouse Co Ltd
DEC — Dominion Engineering Co Ltd
[illegible]
EE — English Electric Co Ltd
EEC — English Electric Co of Canada Ltd

Year of operation	Initial capacity, hp	Additional units planned	Date of additional capacity	Ultimate capacity, hp	No. of units installed	Waterwheel capacity, hp	Waterwheel type	Speed, rpm	Static head, ft	Design head, ft	[4]Waterwheel manufacturer	[4]Governor manufacturer	Scroll case concrete or steel	Penstock valve type	Generator capacity, kva	Synchronizing manual or automatic	[5]Thrust-bearing location	Design power factor	Kilovolts	[4]Generator manufacturer
						[illegible]	Francis	[illegible]	[illegible]	[illegible]	NN	AC	Plate steel	Head gate	[illegible]	Manual	BG	0.95	13.8	WE
1955	[illegible]		[illegible]	[illegible]		[illegible]	Francis	[illegible]	[illegible]248	[illegible]	MC	W	Plate steel	Head gate	[illegible]	Manual	[illegible]	0.95	13.8	
						[illegible]	Francis	[illegible]	[illegible]146	[illegible]	PW	PW	Plate steel	Head gate	3 000	Manual	AG	0.80	4.16	EC
1950	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	MC	[illegible]	Concrete	Head gate	[illegible]	Manual	BC	0.95	[illegible]	[illegible]
						[illegible]	[illegible]	[illegible]	[illegible]	80	PW	W	Concrete	Head gate	[illegible]	Manual	AC	0.80	4.16	EM
						[illegible]	Kaplan	[illegible]	[illegible]	[illegible]	BL	PW	Concrete	Head gate	[illegible]	Manual	BG	0.95	13.8	[illegible]
1950	[illegible]			[illegible]		[illegible]	Kaplan	[illegible]	[illegible]	[illegible]	AC	PW	Concrete	Head gate	[illegible]	Manual	AG	0.95	13.8	WE
						[illegible]	Francis	[illegible]	[illegible]	[illegible]	PW	W	Service units		[illegible]	Manual	AG	0.80	4.16	
1954	[illegible]			[illegible]	[illegible]	[illegible]	Kaplan	[illegible]	[illegible]	40	AC	W	Concrete	Head gate	[illegible]	Manual	BC	0.90	13.8	EC
1952	[illegible]		[illegible]	[illegible]	[illegible]	[illegible] 000	Francis	[illegible]		255	BL, NN	W	Welded pl st	Butterfly	100 000	Auto or man	AC	0.80	13.8	WE
1955	[illegible]			[illegible]		[illegible]	Francis	400		205	MC		Plate steel	Head gate	6 250	Manual	AG	0.80	2.4	WE
1955	[illegible]			[illegible]		[illegible]	Francis	240	[illegible]	[illegible]	JL	PW	Plate steel	Head gate	[illegible]	Manual	AG	0.95	4.16	EM
1955	[illegible]			[illegible]		[illegible]	Francis	[illegible]	[illegible]-107	[illegible]	JL		Plate steel	Head gate	Drives Worthington pumps					
1952	[illegible]			[illegible]		40 [illegible]	Francis	400	[illegible]	[illegible]	AC	W	Welded pl st	Butterfly	[illegible]	Automatic	AG	0.95	13.8	WE
1952	[illegible]			[illegible]		[illegible]	Francis	400	[illegible]-204	205	AC	W	Welded pl st	Butterfly	[illegible]	Automatic	AC	0.95	[illegible]	WE
1954	[illegible]			[illegible]		[illegible]	Francis	[illegible]	96-[illegible]	91	BL	W	Plate steel	Head gate	20 000	Automatic	BG	0.90	13.8	WE
1954	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Francis	[illegible]	[illegible]-126	185	PW	W	Plate steel	Head gate	42 [illegible]	Manual	BG	0.90	13.8	GE
1952	[illegible]			[illegible]	[illegible]	[illegible]	Kaplan	[illegible]	58-[illegible]	55	NN	W	Concrete	Head gate	15 000	Automatic	BC	1.00	13.8	GE
1954	[illegible]			[illegible]	[illegible]	[illegible]	Impulse	400		690	PW	PW		Spherical	[illegible]	Automatic	AC	0.85	2.4	GE
1951	[illegible]			[illegible]	[illegible]	[illegible]	Francis	[illegible]	[illegible]	340	NN	W	Welded pl st	Butterfly	50 000	Manual	AG	0.90	13.8	GE
1953	[illegible]			[illegible]		[illegible]	Francis	[illegible]	[illegible]	414				Butterfly	[illegible]	Automatic	AG	0.90	13.8	GE
	[illegible]			[illegible]		[illegible]	Francis	[illegible]	[illegible]	[illegible]					45 000	Automatic	AC	0.90	13.8	
	[illegible]			[illegible]	[illegible]	[illegible]	Impulse	[illegible]	[illegible]	1102				Butterfly	63 000	Automatic	AG	0.90	13.8	
	[illegible]			[illegible]	[illegible]	[illegible]	Francis	300	720	685				Butterfly	65 000	Automatic	AG	0.90	13.8	
1956	[illegible]			[illegible]		[illegible]		[illegible]	[illegible]	55			Plate steel	Butterfly	4 000	Manual	HS	0.80	4.16	
1956	[illegible]			[illegible]	[illegible]	[illegible]	Kaplan	[illegible]	45	48	BL		Concrete	Head gate	20 000	Automatic	HS	0.83	13.8	EC
1955	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Francis	[illegible]	[illegible]	300	NN		Plate steel	Head gate	50 000	Manual	AC	0.90	13.8	WE
1955	[illegible]			[illegible]	[illegible]	9 400	Kaplan	[illegible]	[illegible]	42	MS	PW	Concrete	Head gate	[illegible]	Manual	AG	0.90	4.16	EC
1955	[illegible]			[illegible]	[illegible]	[illegible]	Impulse	600		1000	AC	W			2 500	Manual	HS	0.80	4.1	AC
1955	[illegible]	[illegible]	1955	[illegible]	[illegible]	[illegible]	Francis	507	[illegible]	71	MS	L	Plate steel	Head gate	[illegible]	Manual	HS	0.80	4.1	AC
					[illegible]	[illegible]	Francis	514	[illegible]	71	JL	W	Plate steel	Head gate	[illegible]	Manual	HS	0.80	4.1	WE
1955	50 0[illegible]			[illegible]	[illegible]	25 000	Francis	[illegible]	820-780	800	NN	W	Cast steel	Butterfly	15,66[illegible]	Manual	AG	0.90	6.9	PO
1954	[illegible]			[illegible]	[illegible]	3 [illegible]	Impulse	360	800-775	760	MC	W		Rotovalve	2 500	Manual	HS	0.80	2.4	GE
1955	[illegible]			[illegible]	[illegible]	[illegible]	Francis	900	321-287	300	JL	W	Cast steel	Butterfly	[illegible]	Manual	HS	0.80	2.4	EC
1955	[illegible]			34 [illegible]	1	34 [illegible]	Impulse	[illegible]	876-793	740	PW	W	Cast steel	Spherical	25 000	Auto or man	AG	0.80	13.8	WEI
1954	[illegible]			[illegible]	2	[illegible]	Francis	514	345-240	310	JL	W	Cast steel	Rotovalve	5 000	Auto or man	AC	0.80	4.16	WEI
1956	[illegible]			[illegible]	[illegible]	4 440	Francis	[illegible]		75	PW	PW	Concrete	Head gate	3 750	Auto or man	AG	0.80	6.9	GE
					[illegible]	6 750	Francis	189.5		75	PW	PW	Concrete	Head gate	5 625	Auto or man	AG	0.80	6.9	GE
1955	[illegible]			[illegible]	[illegible]	[illegible]	Francis	720		260					[illegible]	Manual	HS	0.80	6.9	CGE
1954	[illegible]			[illegible]	[illegible]	[illegible]	Propeller	[illegible]	34	34	CAC	W	Concrete	Head gate	5 000	Manual	AG	0.85	6.9	CWC
1954	9 000			9 000	[illegible]	9 000	Francis	600	405	382	DEC	W	Cast steel	Butterfly	8 500	Automatic	AC	0.80	6.9	CWC
1955	[illegible]			[illegible]	[illegible]	[illegible]	Kaplan	128.5	24	22	MCC	W	Concrete	Head gate	2 500	Automatic	AG	0.90	6.9	CWC
1957	90 [illegible]			[illegible]	[illegible]	45 000	Kaplan	109.1	6[illegible]-20	[illegible]	DEC	SGE	Concrete	Head gate	40 000	Manual	BG	0.90	13.8	CGE
1954	45 000	[illegible]	1955	[illegible]	3	16 000	Francis	120	55-64	58	DEC	W	Concrete	Head gate	[illegible] 000	Manual	BG	0.85	6.9	CWC
1956	400 000			1 200 000	4	350 000	Francis	277	875-850	785	EEC	W	Plate steel	Spherical	120 000	Automatic	AG	0.95	13.8	MVE
1950	[illegible]	[illegible]	1955	390 000	6	55 000	Francis	128.6	160	160	DEC	W	Plate steel	Head gate	50 000	Automatic	AG	0.90	13.8	CGE
1930	200 000	[illegible]	1955	244 500	[illegible]	40 000	Francis	109.1	117-93	105	DEC	DEC	Plate steel	Head gate	36 000	Manual	BG	0.85	11.0	CWC
					[illegible]	44 500	Francis	109.1	117-93	105	DEC	W	Plate steel	Head gate	36 000	Manual	BG	0.85	11.0	SGE
1940	176 600	[illegible]	1950	[illegible] 500	[illegible]	44 500	Francis	109.1	114-104	114	DEC	DEC	Plate steel	Head gate	40 000	Manual	AG	0.90	11.0	CGE
					[illegible]	45 000	Francis	109.1	114-104	114	DEC	W	Plate steel	Head gate	40 000	Manual	AG	0.90	11.0	CGE
1928	204 000	[illegible]	1951	285 000	[illegible]	34 000	Francis	[illegible]	139	130	DEC	W	Plate steel	Head gate	28 500	Manual	AG	0.80	6.6	CWC
					[illegible]	47 000	Francis	123.5	138	132	DEC	W	Plate steel	Head gate	36 000	Manual	AG	0.90	6.6	CGE
1923	[illegible] 000	[illegible]	1923-26	[illegible] 000	[illegible]	10 500	Francis		70-90	90	DEC		Plate steel	Head gate	10 000	Manual	AC	0.80	11.00	SEC
		[illegible]	1950		[illegible]	34 500	Francis	107	70-90	90	CAC	W	Welded pl st	Head gate	[illegible] 500	Manual	AC	0.80	11.00	CGE
		[illegible]	1955		[illegible]	34 500	Francis	107	70-90	90	CAC	W	Welded pl st	Head gate	30 500	Manual	AG	0.80	11.00	CGE
1954	[illegible]			[illegible] 500	[illegible]	[illegible]	Francis	300	54	52	DEC		Plate steel	Head gate	[illegible] 000	Manual	AC	0.80	[illegible]	NEC
1954	26 000			26 000	[illegible]	13 000	Francis	200	100-70	100	CAC		Plate steel	Butterfly	[illegible] 000	Manual	AC	0.80	13.8	CGE
1954	[illegible] 000	[illegible]	[illegible]	[illegible] 000	12	105 000	Francis	150	30[illegible]-294	290	DEC	W	Plate steel	Head gate	90 000	Automatic	AG	0.95	13.8	6CGE
		[illegible]	1955												90 000	Automatic	BG	0.95	13.8	6CWC
1956	273 000			273 000	[illegible]	45 500	Kaplan	92.3	[illegible]-40	83	EEC	W	Plate steel	Head gate	31,000	Automatic	BC	0.95	13.8	CWC
These units operate in reverse as 55 000-hp 4600-cfs 75-ft head pumps. Head range 59 to 90 ft																				
1950	[illegible] 000	3	1953-54	[illegible] 000	[illegible]	41 000	Francis	109.1	110-102	105	CAC	W	Plate steel	Head gate	33 000	Manual	AC	0.90	13.8	CWC
					[illegible]	41 000	Francis	109.1	110-108	105	MCC	W	Plate steel	Head gate	38 000	Manual	BC	0.90	13.8	CWC
1955	74 000			74 000	4	18 500	Propeller	[illegible]	55-44	54	DEC	W	Concrete	Head gate	[illegible] 000	Automatic	AG	0.90	13.8	CGE
1959	1 000 000			1 000 000	[illegible]	[illegible]	Propeller	[illegible]		81	EEC		Concrete	Head gate	60 000	Automatic	BG	0.95	13.8	CWC
					[illegible]	[illegible]	Propeller	[illegible]		81	EEC		Concrete	Head gate	[illegible] 000	Automatic	BG	0.95	13.8	CGE
1955	[illegible]			[illegible]	[illegible]	[illegible]	Propeller	200	29	29	[illegible]	W	Concrete	Head gate	[illegible]	Manual	AC	0.80	6.9	CGE
1954	[illegible]			[illegible]	[illegible]	[illegible]	Kaplan	200	51-47	45	MCC	W	Concrete	Head gate	[illegible]	Manual	AC	[illegible]	[illegible]	CGE
1954	[illegible]	4	1955	[illegible]	[illegible]	[illegible]	Propeller	85.7	[illegible]	23.5	[illegible]	W	Concrete	Head gate	[illegible]	Automatic	BG	0.90	6.9	CGE
1954	[illegible]			[illegible]	[illegible]	[illegible] 500	Kaplan	128.6	[illegible]-34	43	KMW	KMW	Concrete	Head gate	[illegible]	Automatic	BG	0.85	13.8	CWC
1954	[illegible]			[illegible]	[illegible]	30 000	Francis	150	[illegible]-90	107	EEC	W	Plate steel	Head gate	[illegible] 000	Automatic	BC	0.85	13.8	CWC
1955	[illegible]			[illegible] 900	[illegible]	[illegible] 900	Francis	[illegible]	114-74	98	CAC	W	Plate steel	Butterfly	[illegible]	Automatic	AG	0.90	4.16	CWC
1955	[illegible]			[illegible]	[illegible]	[illegible] 400	Francis	240	[illegible]	185	CAC	W	Welded pl st	Butterfly	[illegible] 000	Automatic	BC	0.90	13.8	CWC
1954	400 [illegible]	[illegible]	1958	[illegible] 000	[illegible]	140 000	Impulse[8]	[illegible]	257[illegible]	2500	EEC	W	Cast steel	Spherical	105 000	Manual	AC	0.80	13.8	EEC
					[illegible]	140 000	Impulse[8]	[illegible]	2570	2500	CAC	W	Cast steel	Spherical	105 000	Manual	AG	0.80	13.8	CGE
					[illegible]	140 000	Impulse[8]	[illegible]	[illegible]	2500	PW & VEW	PW	Cast steel	Spherical	105 000	Manual	AG	0.80	13.8	CWC
					[illegible]	140 000	Impulse[8]	[illegible]	[illegible]	[illegible]	[illegible]	W	Cast steel	Spherical	105 000	Manual	AG	0.80	13.8	CGE
1948	[illegible]	[illegible]	1954	500 000	[illegible]	[illegible]	Impulse	370		[illegible]	PW & VEW	3W, 1PW	Cast steel	Spherical	[illegible]	Manual	AC	0.90	13.8	CWC
1956	[illegible]			[illegible]	[illegible]	58 500	Francis	120	140-129	141	CAC	W	Plate steel	Head gate	40 000	Automatic	BC	1.00	13.8	CWC
1957	[illegible]			[illegible]	[illegible]	9[illegible]	Impulse		1125-1255	1070			Cast steel	Butterfly	80 000	Automatic		0.875	13.8	
1955	[illegible]			[illegible]		[illegible]	Francis	[illegible]	350-355	340	CAC	W	Plate steel	Pivot	30 000	Automatic	AG	0.90	13.8	CWC
1951	[illegible]			[illegible]	[illegible]	[illegible]	Francis	[illegible]	[illegible]	[illegible]	EEC	W	Plate steel	Pivot	[illegible] 750	Manual	HS	0.80	4.16	EEC
					[illegible]	[illegible]	Francis	[illegible]	[illegible]	[illegible]	EEC	W	Plate steel	Pivot	[illegible] 750	Manual	HS	0.80	4.16	EEC
1955	[illegible]			[illegible]	[illegible]	[illegible]	Francis	128.5	[illegible]	[illegible]			Plate steel	Butterfly	[illegible] 000	Automatic	BC	0.90	13.8	
1954	[illegible]			[illegible]	[illegible]	[illegible]	Francis	[illegible]	[illegible]	[illegible]	[illegible]	W	Plate steel	Butterfly	90 [illegible]	Manual	BC	0.85	13.8	CWC
1951	[illegible]			[illegible]	[illegible]	[illegible]	Francis	[illegible]	[illegible]	[illegible]	[illegible]	W	Welded pl st		[illegible]	Manual	HC	0.80	4.16	EEC
1951	[illegible]			[illegible]	[illegible]	[illegible]	Francis	1000	[illegible]	[illegible]	[illegible]	CSC	Plate steel	Head gate	[illegible]	Auto or man	AC	0.80	[illegible]	CWC

EM — Electric Machinery Mfg Co
GE — General Electric Co
G&D — Gilkes & Gordon Ltd
JL — James Leffel & Co
KMW — KMW of Sweden
L — Lombard Governor Co
MC — [illegible] Co
MCC — [illegible] Canada Ltd
MVE — Metropolitan Vickers Electrical Co Ltd
NEC — Northern Electric Co Ltd
NN — Newport News Shipbuilding & Dry Dock Co
PO — Pacific Oerlikon Co
PW — Pelton Water Wheel Co
SEC — Swedish Electric Co
SGE — Swedish General Electric Co
VEW — Vancouver Iron Works Ltd
W — Woodward Governor Co
WE — Westinghouse Electric Corp
WEI — Westinghouse Electric International Co

[5]AC indicates thrust bearing is above generator rotor; BC thrust bearing is below generator rotor; HC horizontal-shaft machine

[6]Dam, tunnels with steel pipe conduits are being built by the New York Board of Water Supply as part of the Delaware River water system

[7]Vertical-shaft, 6-nozzle type

[8]Vertical-shaft, 4-nozzle type

Government-Agency Hydroelectric Plants

(Does not include municipal plants)

Government agency	Project	State or Possession	River	Ultimate capacity, hp	Initial capacity, hp	Installed capacity, hp	On order or being installed, hp
U. S. Bureau of Reclamation	Eklutna	Alaska	Lake Eklutna	50 000	50 000	...	50,000
	Grand Coulee	Wash	Columbia	3,102 000	533 000	3,102 000	......
	Hungry Horse	Mont	S. F. Flathead	420,000	420,000	420 000	......
PUD No. 1 Chelan County	Rock Island	Wash.	Columbia	238,000	34,000	283 000	......
U. S. Corps of Engineers	Bonneville	Ore. & Wash	Columbia	729,000	127 000	729 000	...
	Big Cliff	Ore	North Santiam	25 500	25 500	25,500	......
	Lookout Point	Ore	M. F. Willamette	157 500	157 500	52 500	105,000
	Detroit	Ore	North Santiam	140 000	140 000	140 000	......
	Chief Joseph	Wash	Columbia	2 707 000	1 607 000	.	1,607 000
	Dalles	Ore. & Wash	Columbia	2 [illegible] 000	1,779 800	...	1 779,800
	McNary Dam	Ore. & Wash	Columbia	2,225 000	1,565,200	452 200	1,113 000
	Albeni Falls	Idaho	Pend Oreille	58 800	58 800	....	58,800
PUD No. 1 Pend Oreille County	Box Canyon	Wash	Pend Oreille	122 500	98 000	..	98,000
U. S. Bureau of Reclamation	Anderson Ranch	Idaho	Boise	55 500	37 000	37 000	......
	Minidoka	Idaho	Snake	23,500	3,000	13 500	......
	Palisades	Idaho	Snake	158 000	158,000	...	158 000
	Shasta	Calif	Sacramento	522 000	419 000	522,000	......
	Keswick	Calif	Sacramento	102 000	102 000	102 000	......
	Folsom	Calif	American	225 000	225 000	...	225,000
Imperial Irrigation District	Drop No. 4	Calif	All Am. Canal	23 300	23,300	23 300	......
	Pilot Knob	Calif	All Am. Canal	52 600	52 600	.	52,600
U. S. Bureau of Reclamation	Parker Dam	Ariz. & Calif	Colorado	160,000	120 000	160 000	......
	Davis Dam	Ariz. & Calif	Colorado	311 000	311 000	311 000	......
	Hoover Dam	Ariz. & Nev	Colorado	1 857 000	522 000	1 742 000	......
	Elephant Butte	N. M.	Rio Grande	34 500	34 500	34 500	......
	Green Mountain	Colo	Blue	30,000	30 000	30 000	......
	Estes Park	Colo	Colo. Big Thompson	53 000	53 000	53 000	......
	Pole Hill	Colo	Colo. Big Thompson	47 500	47 500	47 500	......
	Flatiron	Colo	Colo. Big Thompson	108 000	108 000	108 000	......
	Kortes	Wyo	North Platte	55 500	55 500	55 000	......
	Alcova	Wyo	North Platte	53 000	53 000	.	53,000
	Glendo	Wyo	North Platte	33 500	33 500		......
	Seminoe	Wyo	North Platte	45 000	45 000	45 000	......
	Canyon Ferry	Mont	Missouri	70 500	70 500	70 500	......
U. S. Corps of Engineers	Fort Peck	Mont	Missouri	150 000	70 000	120 000	......
Platte Valley Public Pwr & Irr Dist	Sutherland	Neb	North Platte	35 000	35 000	35 000	......
Loup River Public Power Dist.	Columbus	Neb	Loup	54 000	54 000	54 000	......
Central Neb. Public Pwr & Irr Dist	Jeffery Canyon	Neb	Platte	25,000	25 000	26 000	......
	Johnson No. 1	Neb	Platte	25 000	25 000	26 000	......
	Johnson No. 2	Neb	Platte	50 000	25 000	25 000	......
U. S. Corps of Engineers	Fort Randall	S. D.	Missouri	460 000	460 000	57,500	402,500
	Oahe	S. D.	Missouri	485 000	134 000		......
	Garrison	N. D.	Missouri	440,000	440 000	...	440,000
	Gavins Point	S. D. & Neb	Missouri	162,000	162 000	.	162 000
	St. Mary's Falls	Mich	St. Mary's	72 750	23 925	23 925	......
	Norfolk	Ark	North Fork	168 000	42 540	34 540	......
	Blakely Mountain	Ark	Ouachita	104,000	104 000	104,000	......
	Bull Shoals	Ark	White	419 000	211,000	211 000	......
	Table Rock	Ark	White	272 000	272 000	...	136 000
	Narrows	Ark	Little Missouri	35,000	24 000	24,000	......
Grand River Dam Authority	Pensacola Dam	Okla	Grand	120 750	30 750	120 750	......
U. S. Corps of Engineers	Fort Gibson	Okla	Grand	96 000	64 000	64 000	......
	Tenkiller Ferry	Okla	Illinois	47 000	47 000	47 000	......
	Dennison Dam	Okla. & Texas	Red	292 080	56,080	114 080	......
Lower Colorado River Authority	Buchanan Dam	Texas	Colorado	51 900	34 600	51 900	......
	Marshall Ford	Texas	Colorado	90 000	90 000	90 000	......
	Marble Falls	Texas	Colorado	42 000	42 000	42 000	......
Brazos River Conserv & Reclam Dist	Possum Kingdom	Texas	Brazos	51 000	34 000	34 000	......
International Boundary & Water Comm	Falcon Dam	Texas & Mex	Rio Grande	38 500	38 500	38 500	......
U. S. Corps of Engineers	Whitney Dam	Texas	Brazos	41 400	41 400	41 400	......
	Wolf Creek	Ky	Cumberland	377 000	377 000	377 000	......
Tennessee Valley Authority	Kentucky	Ky	Tennessee	220 000	175 000	220 000	......
	Pickwick	Tenn	Tennessee	[illegible]	[illegible]	[illegible]	......
	Wilson	Ala	Tennessee	[illegible]	206 000	[illegible]	......
	Wheeler	Ala	Tennessee	350 000	[illegible]	[illegible]	
	Guntersville	Ala	Tennessee	[illegible]	102 000	[illegible]	......
	Hales Bar	Tenn	Tennessee	140 000	[illegible]	140 000	......
	Chickamauga	Tenn	Tennessee	144 000	108 000	144 000	......
	Watts Bar	Tenn	Tennessee	[illegible]	125 000	[illegible]	......
	Norris	Tenn	Clinch	[illegible]	132 000	[illegible]	......
	Fort Loudoun	Tenn	Tennessee	[illegible]	[illegible]	[illegible]	......
	Cherokee	Tenn	Holston	[illegible]	[illegible]	[illegible]	......
	Douglas	Tenn	French Broad	154 000	[illegible]	154 000	
	South Holston	Tenn	South Holston	[illegible]	49 500	[illegible]	
	Fort Patrick Henry	Tenn	South Fk Holston	[illegible]	50 000	50 000	
	Boone	Tenn	South Fk Holston	[illegible]	103 500	[illegible]	
	Watauga	Tenn	Watauga	[illegible]	[illegible]	[illegible]	......
	Fontana	N. C.	Little Tennessee	[illegible]	[illegible]	[illegible]	......
	Apalachia	Tenn	Hiwassee	[illegible]	[illegible]	[illegible]	
	Hiwassee	N. C.	Hiwassee	160 000	80 000	[illegible]	80,000
	Ocoee No. 3	Tenn	Ocoee	[illegible]	23 500	[illegible]	
U. S. Corps of Engineers	John H. Kerr	Va. & N. C.	Roanoke	[illegible]	[illegible]	[illegible]	......
	Center Hill	Tenn	Caney Fork	[illegible]	[illegible]	[illegible]	
	Dale Hollow	Tenn	Obey	[illegible]	[illegible]	[illegible]	
	Old Hickory	Tenn	Cumberland	130 000	130 000		130,000
	Cheatham	Tenn	Cumberland	[illegible]	[illegible]		[illegible]
	Allatoona	Ga	Etowah	[illegible]	[illegible]	[illegible]	
	Buford	Ga	Chattahoochee	[illegible]	[illegible]		[illegible]
	Jim Woodruff	Ga	Chattahoochee	[illegible]	[illegible]		[illegible]
	Clark Hill	Ga. & S. C.	Savannah	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
Total				[illegible]	[illegible]	[illegible]	[illegible]

[illegible]