PLAINTIFF'S EXHIBIT
WH-1053

Year Building a more powerful America

POWER

DECEMBER 1957
ONE DOLLAR
A McGRAW-HILL PUBLICATION

The new . . . MODERN PLANT SURVEY

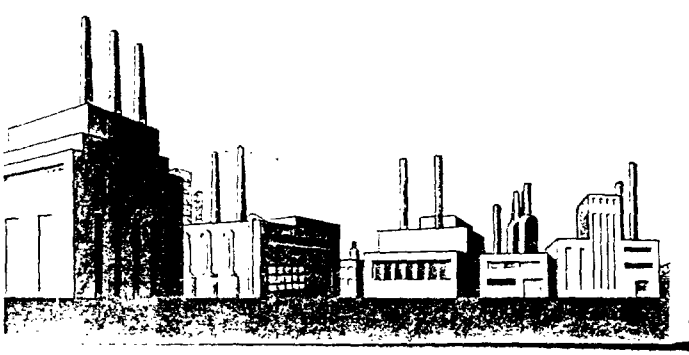
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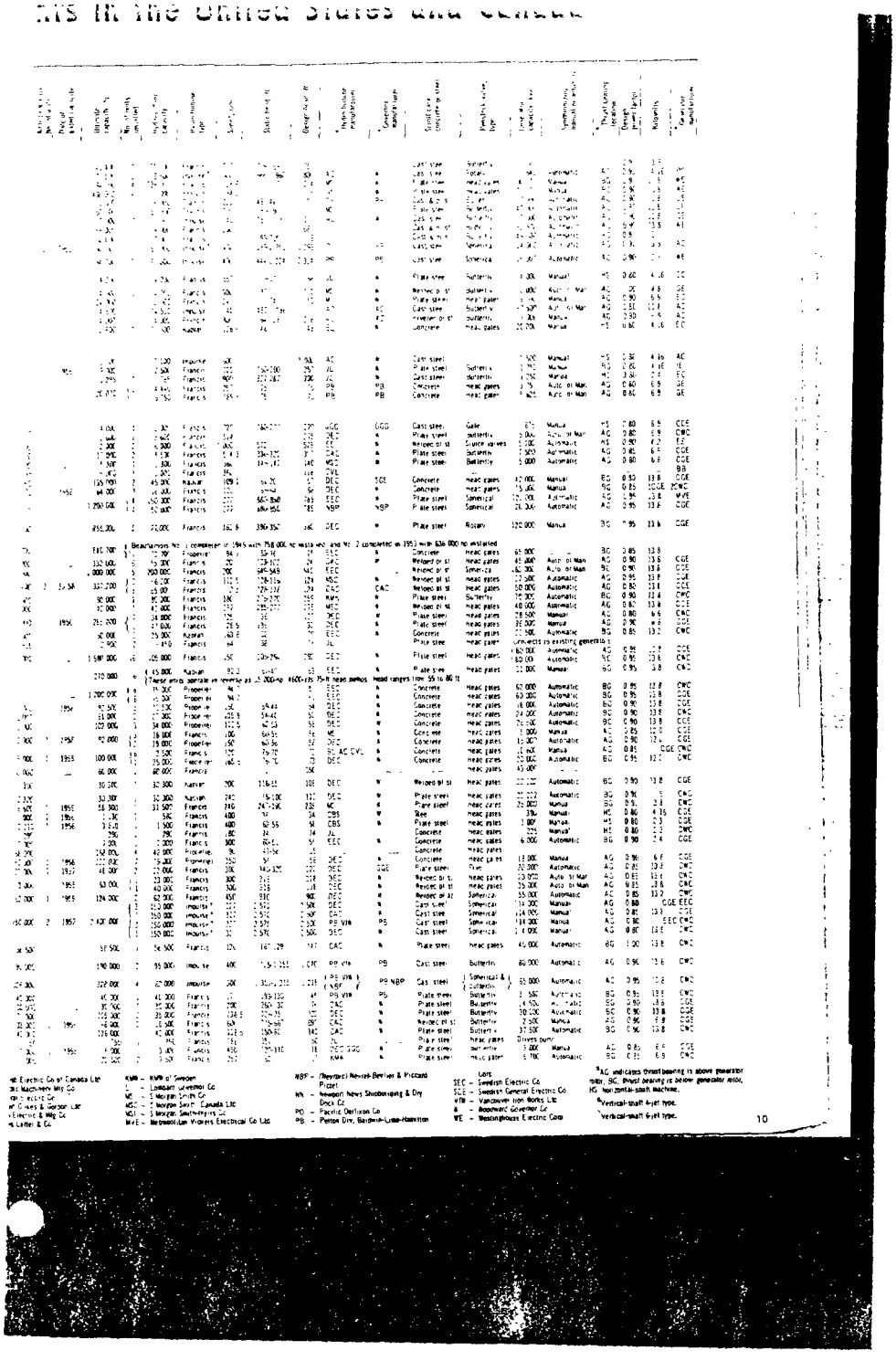
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...rs in the United States and Canada



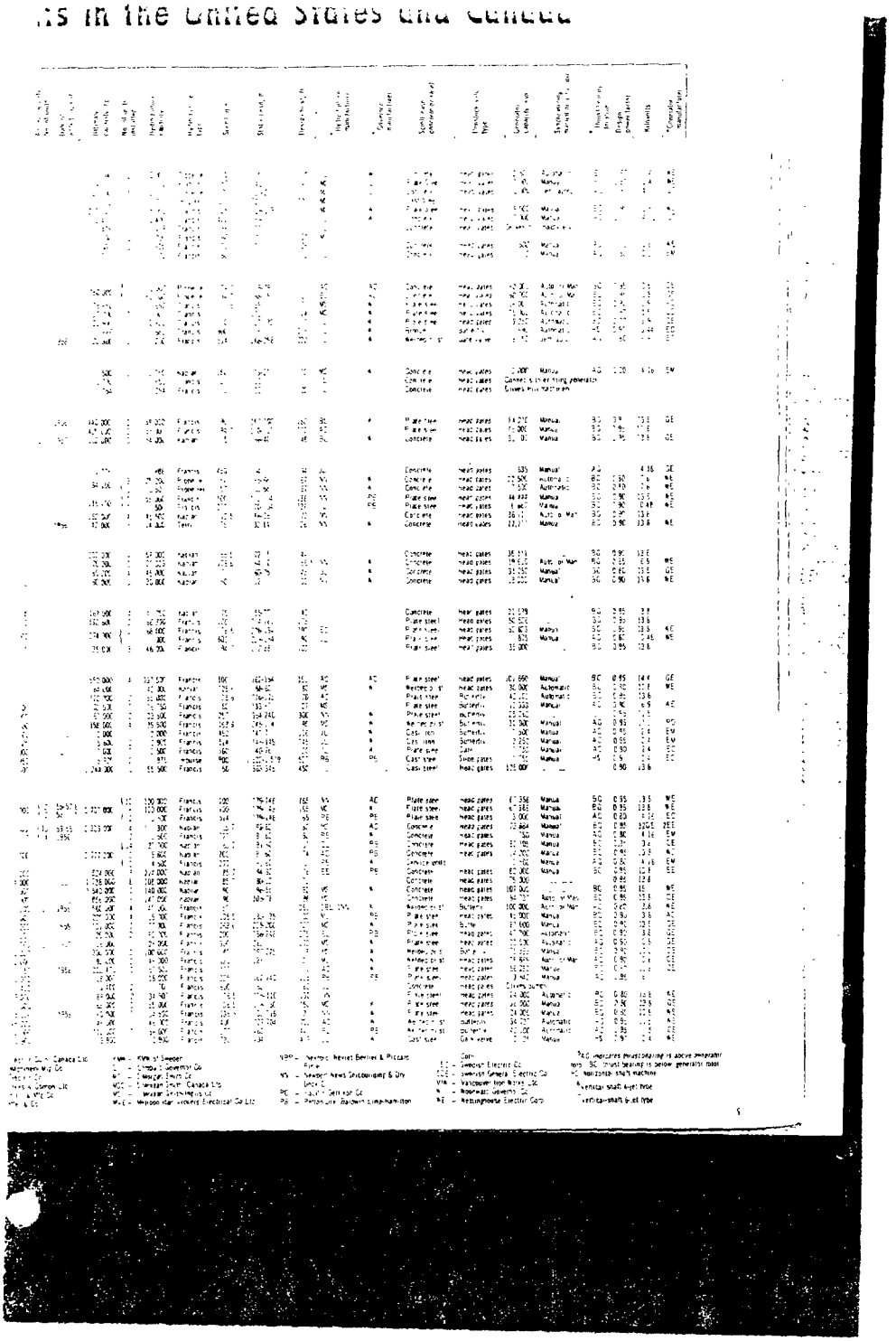
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1957 Design Survey: Typical Hydroelectric

Compiled by F. A. Annett, Contributing Editor

Company or government agency	Design or consulting engineers	Project name	New or redeveloped	River	State	Project started, date	Dam type	Crest length, ft	
PACIFIC COAST STATES, cont.									
U.S. Army Engineers	U.S. Army Engineers	Hills Creek	New	N.F. Willamette	Ore.	1956	E & RF	—	—
U.S. Bureau of Reclamation	U.S. Bureau of Reclamation	Green Springs	New	Emigrant Creek	Ore.	1956	E	—	—
Idaho Power Co.	International Engr Co. / J.P. Dawson	Brownlee	New	Snake	Ore.-Ida.	1955	E & R	1,320	210
Idaho Power Co.	J.G. Steele, & Harold Sippets	Oxbow	New	Snake	Idaho	1955	E & R	1,320	205
Pacific Gas & Electric Co.	Pacific Gas & Electric Co.	Poe	New	Feather	Calif.	1954	G,E	1,450	460
Pacific Gas & Electric Co.	Pacific Gas & Electric Co.	Butt Valley	New	Butt Creek	Calif.	1955	RF	1,250	130
Pacific Gas & Electric Co.	Pacific Gas & Electric Co.	Cresta No. 2	New	Feather	Calif.	1955	E,arm	1,270	80
Pacific Gas & Electric Co.	Pacific Gas & Electric Co.	Belden	New	Feather	Calif.	1957	G,E	1,325	150
Pacific Gas & Electric Co.	Pacific Gas & Electric Co.	Kings River	New	Kings	Calif.	1958	Arch	2,100	440
Pacific Gas & Electric Co.	Pacific Gas & Electric Co.	Balch	New	Kings	Calif.	1956	Rock	1,100	140
Pacific Gas & Electric Co.	Pacific Gas & Electric Co.	Haas	New	Kings	Calif.	1955	RF	1,350	280
Los Angeles Dept. of Water & Power	Knappen-Tippetts-Abbett-McCarthy & Parsons, Klein & Roberts	Pleasant Valley	New	Owens	Calif.	1954	EF	530	116
Southern California Edison Co.	Southern California Edison Co. & Bechtel Corp.	Portal	New	—	Calif.	1955	EF	1,438	165
San Gabriel & San Joaquin Mt. Dist.	Fugate, Stevenson & Edgar	Fish Lake Tailrace	New	Stanislaus	Calif.	1955	G,E	1,600	200
San Gabriel & San Joaquin Mt. Dist.	International Engr Co. & Gerald E. Soccalli Co.	Tri-Dam Donnells	New	Stanislaus	Calif.	1955	G,A	1,350	470
San Gabriel & San Joaquin Mt. Dist.	Gerald E. Soccalli Co.	Tri-Dam Beardsley	New	Stanislaus	Calif.	1955	EF	1,200	330
Imperial Irrigation District	Sacks & Hill Inc.	Pilot Knob	New	All-American Canal	Calif.	1954	—	—	—
U.S. POSSESSIONS									
Petersburg Light & Power Co.	—	—	New	—	Alaska	1954	—	—	—
Ketchikan Public Utilities	R.W. Beck & Associates	Ketchikan Lakes	Red.	—	Alaska	1957	RF	1,197	35
Metlakatla Indian Community	Hudson & Walker Engrs. Cons.	Purple Lake	New	—	Alaska	1954	—	—	—
Panama Canal Co.	—	Gatun micro	Red.	Chagres	Canal Zone	1954	—	—	—
CANADA					PROVINCE				
Union Electric Light & Power Co.	J.G. Desjardins	Jackson	New	Trout	Ont.	1954	CO	700	38
Upper Tobin Electric Co. Ltd.	Power Corp. of Canada Ltd. & Shawinigan Engineering Co.	New Chelsea	New	Chelsea	Que.	1955	EF	—	—
Bowater Power Co. Ltd.	Shawinigan Engineering Co.	Corner Brook	New	Corner Brook	Nfld.	1954	EF	1,100	65
Newfoundland Light & Power Co. Ltd.	Wenzel Engineering Co.	Rattling Brook	New	Rattling Brook	Nfld.	1954	EF,CO	1,530	46
Nova Scotia Power Commission	W.S. Hyland Jones & E. Whitman	Ruper	New	Ruper	N.S.	1955	EF,CO,R	2,866	42
Nova Scotia Light & Power Co.	—	Harmony Falls	Red.	Avon	N.S.	1957	—	—	—
New Brunswick Electric Power Comm.	Shawinigan Engineering Co.	Beechwood	New	St. John	N.B.	1955	EF	1,480	110
Quebec Hydro-Electric Comm.	H.G. Acres & Co. / Frazer Brace Engrs.	Paxton No. 2	New	Ottawa	Que.	1951	RF	1,274	110
Quebec Hydro-Electric Comm.	H.G. Acres & Co.	Bersimis No. 1	New	Bersimis	Que.	1953	RF	1,547 1,515	250 290
Quebec Hydro-Electric Comm.	H.G. Acres & Co.	Bersimis No. 2	New	Bersimis	Que.	1956	CO EF	3,008 3,800 3,200	290 60 70
Quebec Hydro-Electric Comm.	H.G. Acres & Co.	Beauharnois No. 3	New	St. Lawrence	Que.	1956	P & G	4,360	33
Shawinigan Water & Power Co.	Shawinigan Engineering Co.	Beauceville	New	St. Maurice	Que.	1956	CO	3,375	185
Aluminum Company of Canada	H.G. Acres & Co.	Chute-des-Passes	New	Peribonka	Que.	1954	CO	1,340	170
Manitoulin Power Co.	H.G. Acres & Co.	McCamus Dam	New	Manitoulin	Que.	1951	CO	4,375	35
Price Brothers & Co.	Montreal Engineering Co.	Chute Wilson	New	Shipshaw	Que.	1956	—	—	—
Dominion Tanning & Refining Corp.	Montreal Engineering Co.	Jonquiere Power	New	Chicoutimi	Que.	1955	CO	760	50
Saguenay Power Co.	—	Pingon	New	Saguenay	Que.	1956	CO	—	—
James MacLaren Co.	Shawinigan Engineering Co.	Jocelyn Falls	New	Lievre	Que.	1951	CO	700	60
E.B. Eddy Co.	—	Hull	Red.	Ottawa	Que.	1956	—	—	—
Hydro-Electric Power Comm. of Ontario	Hydro-Electric Power Comm. of Ontario	Sir Adam Beck Niagara No. 2	New	Niagara	Ont.	1954	—	—	—
Hydro-Electric Power Comm. of Ontario	Hydro-Electric Power Comm. of Ontario	Sir Adam Beck Niagara No. 2	New	Niagara	Ont.	1952	RF	24,957	68
Hydro-Electric Power Comm. of Ontario	Hydro-Electric Power Comm. of Ontario	Ripper — succors	New	St. Lawrence	Ont.	954	CO,E	3,200 3,230	1,171 65
Hydro-Electric Power Comm. of Ontario	Hydro-Electric Power Comm. of Ontario	Manitou Falls	New	Englehart	Ont.	1953	CO	1,200	63
Hydro-Electric Power Comm. of Ontario	Hydro-Electric Power Comm. of Ontario	Wawaitin	New	Wawaitin	Ont.	1955	CO	1,200	38
Hydro-Electric Power Comm. of Ontario	Hydro-Electric Power Comm. of Ontario	Twin Falls	New	Englehart	Ont.	1956	CO,E	1,200	75
Hydro-Electric Power Comm. of Ontario	Hydro-Electric Power Comm. of Ontario	Pinard Falls	New	Nipigon	Ont.	1956	EF	750	90
Hydro-Electric Power Comm. of Ontario	Hydro-Electric Power Comm. of Ontario	Chenaux Falls	New	Mattawa	Ont.	1956	—	—	—
Hydro-Electric Power Comm. of Ontario	Hydro-Electric Power Comm. of Ontario	Lower Falls	New	Kapuskasing	Ont.	1954	—	—	—
Great Lakes Power Co. Ltd.	Wenzel Engineering Co.	Jocelyn	New	Magpie	Ont.	1957	CO,E,EF	1,200	65
Great Lakes Power Co.	Wenzel Engineering Co.	Victoria Falls	New	Mississagi	Ont.	1956	CO	1,140 1,200	125 130
Great Lakes Power Co.	Wenzel Engineering Co.	Bartlett	New	Mississagi	Ont.	1956	CO	1,200	98
Ontario Power Co. & Algoma Steel Corp.	H.G. Acres & Co.	Decew Falls	Red.	Welland	Ont.	1956	—	—	—
Canadian Oil Companies & Algoma Steel Corp.	H.G. Acres & Co.	Lower Falls	Red.	Welland	Ont.	1956	—	—	—
Ontario Power Co.	Wenzel Engineering Co.	Lower Falls	New	Niagara	Ont.	1954	—	—	—
Manitoba Hydro-Electric Board	H.G. Acres & Co.	Pine Falls	New	Winnipeg	Man.	1955	CO	1,100	60
Ontario Power Co.	Wenzel Engineering Co.	Chippawa-Queenston	Red.	Niagara	Ont.	1957	—	—	—
Ontario Power Co.	Wenzel Engineering Co.	Lower Falls	New	Niagara	Ont.	1957	—	—	—
Ontario Power Co.	Wenzel Engineering Co.	Lower Falls	New	Niagara	Ont.	1956	CO,E	—	—
Ontario Power Co.	Wenzel Engineering Co.	Lower Falls	New	Niagara	Ont.	1956	—	—	—
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

...s in the United States and Canada



1957 Design Survey: Typical Hydroelectric

Compiled by F. A. Annett, Contributing Editor

Company or government agency	Design or consulting engineers	Project name	New or redevelopment	River	State	Project started, date	Dam type	Crest length, ft	Max height, ft above foundation
NEW ENGLAND STATES									
Central Maine Power Co	Central Maine Power Co	Bar Mills	Red	Saco	Me	1955	—	—	—
Chas T Main Inc	Chas T Main Inc	Bonzland	Red	St Croix	Me	1954	—	—	—
Eastern Utilities Associates	Eastern Utilities Associates	Pembroke	Red	Penobscot	Me	1955	CO	3460	80
Eastern Utilities Associates	Eastern Utilities Associates	Milford No 2A	New		Me	1955	—	—	—
Northern Chemical Industries			New		Me	1953	—	—	—
Connecticut River Power Co	Chas T Main Inc, Y E Power Service Co	Sanford-O'Maley	New	Connecticut	N H & Vt	1952	CAE	1,440	180
Connecticut River Power Co	Chas T Main Inc, Y E Power Service Co	Newport No 1	Red	Coos	Vt	1954	CO	90	12
Dummy Utilities Co	Stone & Webster Engineering Corp	East Pinkham	Red		Vt	1954	—	—	—
Pinkham Plant Co		Kezar Falls Improvement	Red		Me	1954	—	—	—
Southworth Co		Holyoke	New		Mass	1953	—	—	—
American Writing Paper Corp		Holyoke	Rec		Mass	1953	—	—	—
Parsons Paper Co		Holyoke	Red		Mass	1953	—	—	—
MIDDLE ATLANTIC STATES									
Port Authority of the State of NY	Ammann & Whitney	Barnhart Island	New	St Lawrence	N Y	1954	CO	3,200	172
						1954	CO	3,150	124
Niagara Mohawk Power Corp	Niagara Mohawk Power Corp	Stone Falls	New	Raquette	N Y	1954	CAE	350	46
Niagara Mohawk Power Corp	Niagara Mohawk Power Corp	Dam	New	Raquette	N Y	1955	CAE	735	46
Niagara Mohawk Power Corp	Niagara Mohawk Power Corp	Prospect	New	West Canada	N Y	1957	CO	570	150
Niagara Mohawk Power Corp	Niagara Mohawk Power Corp	Raste treatment	New	Genesee	N Y	1953	—	0	135
Empire Nuclear Co	Company engineering staff	Hyatt Falls	New	Saranac	N Y	1955	CO	274	58
New York State Electric & Gas Corp	Company engineering staff								
EAST NORTH CENTRAL STATES									
Northern States Power Co of Wis	Pioneer Service & Engineering Co	Menomonie	Red	Red Cedar	Wis	1955	CO	—	—
Wisconsin-Michigan Power Co		Port Edwards	Red		Wis	1954	—	—	—
Clare Bros Milling Co		Augusta	Red		Wis	1955	—	—	—
WEST NORTH CENTRAL STATES									
U S Army Engineers	U S Army Engrs, Chas T Main Inc	Garrison	New	Missouri	N D	1955	EF	12,300	210
U S Army Engineers	U S Army Engrs, Chas T Main Inc	Oahe	New	Missouri	S D	1955	EF	9,200	242
U S Army Engineers	U S Army Engrs, Ammann & Whitney	Lewis Point	New	Missouri	S D & Nebr	1948	EF	9,200	74
SOUTH ATLANTIC STATES									
Alexandria Water Co		Alexandria	New		Va	1956	—	—	—
Georgia Power Co	Georgia Power Co, Southern Services Inc	Dixon Dam	New	Chattahoochee	Ga	1957	CO	1,320	70
U S Army Engineers	U S Army Engrs, Enk Floor & Assoc	Buford	New	Chattahoochee	Ga	1950	Earth	650	192
U S Army Engineers	U S Army Engrs, Enk Floor & Assoc	Fort James	New	Chattahoochee	Ala & Ga	1955	CAE	1,320	—
U S Army Engineers	U S Army Engineers	Jim Woodruff	New	Apalachicola	Fla	1947	CO	5,124	186
EAST SOUTH CENTRAL STATES									
U S Army Engineers	U S Army Engineers	Barkley	New	Cumberland	Ky	1951	—	1,710	60
Tennessee Valley Authority	Aluminum Company of America	Chickamauga	New	Little Tennessee	Tenn	1955	EF, CE	1,710	40
U S Army Engineers	U S Army Engrs, Anderson Engr Corp	Old Hickory	New	Cumberland	Tenn	1951	CO & EF	3,150	90
U S Army Engineers	U S Army Engineers	Cheatham	New	Cumberland	Tenn	1950	CO	1,350	75
WEST SOUTH CENTRAL STATES									
U S Army Engineers		Dardanelle	New	Dardanelle	Ark	1947	CO	—	—
U S Army Engineers	U S Army Engrs, Sverdrup & Parcel Inc	Jogers Ferry	New	White	Ark	1947	CO	—	—
U S Army Engineers	U S Army Engineers	Table Rock	New	White	Ark	1950	CO & EF	5,388	250
U S Army Engineers	U S Army Engrs, Sverdrup & Parcel Inc	Eufaula	New	Canadian	Okla	1947	CO & EF	—	—
MOUNTAIN STATES									
Washington Water Power Co	Stearns-Rogers Inc	Noxon	New	Clark Fork	Mont	1955	CO & EF	1,700	370
Montana Power Co	Bechtel Corp	Cochrane	New	Missouri	Mont	1954	CO	1,400	168
U S Army Engineers	U S Army Engrs, Enk Floor & Assoc	Fort Peck No 2	New	Missouri	Mont	1951	Earth	21,026	246
U S Bureau of Reclamation	U S Bureau of Reclamation	Canyon	New	Snake	Wyo	1950	EF	6,643	155
U S Bureau of Reclamation	U S Bureau of Reclamation	Pleasant Canyon	New	Bruneau	Idaho	1954	—	—	—
U S Bureau of Reclamation	U S Bureau of Reclamation	Pleasant	New	Owyhee	Oreg	1955	EF	200	320
U S Bureau of Reclamation	U S Bureau of Reclamation	Bonneville	New	Columbia	Oreg	1938	—	—	—
U S Bureau of Reclamation	U S Bureau of Reclamation	Owyhee	New	Owyhee	Idaho	1949	—	—	—
U S Bureau of Reclamation	U S Bureau of Reclamation	Grand Coulee	New	Columbia	Wash	1933	—	—	—
Idaho Power Co	Idaho Power Co	Brownlee	New	Snake	Idaho	1955	EF	1,320	320
Idaho Power Association Inc	U S Bureau of Reclamation	Hungry Horse	New	South Fork Flathead	Mont	1951	CO	1,850	340
U S Bureau of Reclamation	U S Bureau of Reclamation	Grand Coulee	New	Columbia	Wash	1933	CO	4,173	550
PACIFIC COAST STATES									
U S Army Engineers	U S Army Engineers	Chief Joseph	New	Columbia	Wash	1948	CO	3,215	220
U S Army Engineers	U S Army Engineers	McNary	New	Columbia	Wash & Oreg	1947	CO & EF	4,800	92
U S Army Engineers	U S Army Engineers	The Dalles	New	Columbia	Wash & Oreg	1952	CO	—	—
U S Army Engineers	U S Army Engineers	The Dalles Fishway	New	Columbia	Oreg	1952	—	—	—
Pacific Gas & Electric Co	Harza Engineering Co	Round Mountain	New	Pit	Calif	1954	—	—	—
Pacific Gas & Electric Co	Stone & Webster Engineering Corp	Kerckhoff No 2	New	San Joaquin	Calif	1954	CO & EF	1,140	—
Grant County Public Utility District	Stone & Webster Engineering Corp	Priest Rapids	New	Columbia	Wash	1955	CO & EF	5,710	—

1957 Design Survey of Typical New Steam Central-Station Installations

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 & SH	BOILERS: Surface, 1000 sq ft: Superheater	BOILERS: Surface, 1000 sq ft: Reheater	Boiler pressure, psig	Steam temp., F: Throttle	Steam temp., F: Reheat	Number	Capacity, each, 1000 lb per hr	Manufacturer	Surface, 1000 sq ft	Type	Number	Capacity, each, cfm	Manufacturer	Drive	Fuel	Number	Heating value, 1000 Btu per lb	Ash-softening temperature, F	Firing	Type	Number	Capacity, each, gpm	Manufacturer	Drive	Flow control	Number	Capacity, each, kw	Manufacturer	Drive	Exhaust pressure, in Hg abs	Exhaust steam: Surface, sq ft	Exhaust steam: Jet	Circulating water: Type	Circulating water: Source	Total circulating water, new units, 1000 gpm	Total circulating water, old units, 1000 gpm
Boston Edison Co	Everett, Mass	Mystic	Jackson & Moreland Inc	5	8-59	1800	1000	1000	1	935	CE	26.0	78.1	14.0																																	
California Electric Power Co	San Bernardino, Calif Yuma, Ariz	San Bernardino Yuma Axis	Fluor Corporation Bechtel Corporation	2	4-58	1800	1000	1000	1*	475	CE	13.2	31.4	6.3																																	
Central Illinois Light Co	Highgrove, Calif Peoria, Ill	Highgrove La Marsh	Fluor Corporation Commonwealth Associates, Inc	1	4-59	1800	1000	1000	1*	575	CE	14.1	–	–																																	
Central Power & Light Co	Catalan, Texas	Lon C Hill	Sargent & Lundy	4	–	1250	950	–	1	425	CE	16.7	12.1	–																																	
Connecticut Light & Power Co	Devon, Conn	Devon	United Engineers & Constructors	1	4-60	1800	1000	1000	1	850	RS	46.6	43.0	45.1																																	
Dallas Power & Light Co	Dallas, Texas	North Lake	Ebasco Services Inc	3	4-59	1800	1000	1000	1*	1100	BW	13.0	58.9	13.1																																	
Delaware Power & Light Co	Indian River, Del Wilmington, Del	Indian River	United Engineers & Constructors C F Braun & Co	8	9-58	1800	1000	1000	1	800	CE	21.0	68.5	11.3																																	
				1	1-60	1800	1000	1000	1*	1200	RS	40.8	53.0	41.8																																	
				2	1-61	1800	1000	1000	1*	1200	–	–	–	–																																	
				2	1959	1800	1000	1000	1	625	BW	12.1	33.9	21.8																																	
					9-56	1300	950	–	3	500	RS	34.7	24.5	–																																	
Florida Power Corporation	St. Petersburg, Fla	Paul L Bartow	Black & Veatch	2	11-60	1800	1000	1000	1	900	CE	15.1	60.1	16.5																																	
Georgia Power Co	Brunswick, Ga	McManus	Black & Veatch Southern Services Inc	4	5-59	1450	1000	1000	1	600	RS	24.4	35.0	16.5																																	
Gulf Power Co	Pensacola, Fla	Crist	Southern Services Inc	2	5-59	1800	1000	1000	1	580	BW	9.1	–	–																																	
				4	5-59	1800	1000	1000	1*	582	CE	14.1	48.8	7.7																																	
				4	5-59	1800	1000	1000	1*	800	FW	13.2	14.0	24.4																																	
				1	3-61	1800	1000	1000	1*	1020	RS	34.8	43.7	55.2																																	
Kansas Power & Light Co	Lawrence, Kan	Lawrence	Black & Veatch	4	4-59	1800	1000	1000	1*	842	CE	15.9	58.7	15.6																																	
Long Island Lighting Co	Port Jefferson, N Y Island Park, N Y	Port Jefferson Edward F Barrett	Ebasco Services Inc Ebasco Services Inc	4	10-60	1800	1000	1000	1**	1150	CE	51.4	78.1	13.0																																	
Louisiana Power & Light Co	Sterlington, La	Sterlington	Ebasco Services Inc	6	10-61	1800	1000	1000	1**	1150	CE	51.4	78.1	13.0																																	
				6*	4-57	1800	1000	1000	1*	1550	RS	50.0	71.2	62.7																																	
				3	4-58	1800	1000	1000	1	950	FW	29.9	15.8	48.2																																	
Mississippi Power Co	Handsboro, Miss	Gulf Coast	Southern Services Inc	2	5-60	1800	1000	1000	1	582	CE	14.1	48.8	7.7																																	
Montaup Electric Co	Somerset, Mass	Montaup	Stone & Webster Engrg Corp	6	3-59	1800	1000	1000	1	900	CE	13.3	51.0	11.1																																	
Northern States Power Co	St. Paul, Minn	High Bridge	Pioneer Service & Engrg Co	6	8-59	1800	1000	1000	1	1200	BW	24.9	76.2	48.4																																	
Public Service Co of Indiana Inc	New Albany, Ind	New Albany	Sargent & Lundy	1	3-58	1800	1000	1000	1	1000	RS	59.9	54.7	60.4																																	
				2	10-58	1800	1000	1000	1	1000	RS	59.9	54.7	60.4																																	
				3	1-60	1800	1000	1000	1	1000	RS	59.9	54.7	60.4																																	
				4	10-60	1800	1000	1000	1	1000	RS	59.9	54.7	60.4																																	
Rochester Gas & Electric Corp	Rochester, N Y	Station 3	Gilbert Associates Inc	12	10-59	1800	1050	1000	1	560	CE	16.0	54.0	8.4																																	
Texas Power & Light Co	Mckinney County, Texas	Lake Creek	Gilbert Associates Inc	2	3-59	1800	1000	1000	1*	1800	FW	36.4	21.4	59.7																																	
Texas Power & Light Co	Panoma, Tex	Panoma	Sargent & Lundy	2	9-59	1800	1000	1000	1	1200	FW	27.7	22.8	59.6																																	
Savannah Electric & Power Co	Port Wentworth, Ga	Port Wentworth	Stone & Webster Engrg Corp	1	4-58	1465	1000	1000	1*	375	CE	11.9	17.6	6.8																																	
Atlantic City Electric Co	Penns Grove, N J	Deepwater	Gibbs & Hill Inc	1	1958	1450	1000	1000	1	616	BW	9.7	–	–																																	
Central Louisiana Electric Co Inc	St Landry, La	Coughlin	Sargent & Lundy	6	4-61	1450	1000	1000	1*	700	BW	8.7	–	–																																	
Columbus & Southern Ohio Electric Co	Conesville, Ohio	Conesville	Ebasco Services Inc	1	10-58	1450	1000	1000	1*	1000	BW	19.8	100.4	17.2																																	
				2*	12-57	1450	1000	1000	1*	1000	BW	15.8	98.5	16.0																																	
Florida Power & Light Co	Ft. Myers, Fla	Ft. Myers	Ebasco Services Inc	1	12-58	1450	1000	1000	1*	1100	BW	10.0	44.4	21.3																																	
	Lake Monroe, Fla	Sanford	Ebasco Services Inc	3	5-59	1450	1000	1000	1*	1100	BW	10.0	44.4	21.3																																	
Iowa Power & Light Co	Council Bluffs, Iowa	Council Bluffs	Black & Veatch	2	10-58	1450	1000	1000	1*	630	CE	12.5	33.9	8.7																																	
Iowa Public Service Co	Waterloo, Iowa	Maynard	Ebasco Services Inc	7	10-58	1450	1000	–	1*	460	RS	32.6	27.7	0																																	
Kentucky Utilities Co	Central City, Ky	Green River	Sargent & Lundy	4	7-59	1450	1000	1000	1	750	BW	16.9	37.4	26.9																																	
Minnesota Power & Light Co	Cohasset, Minn	Clay Boswell	Ebasco Services Inc	2	9-59	1450	1000	1000	1*	500	RS	16.6	30.1	25.7																																	
Otter Tail Power Co	Fergus Falls, Minn	Hoot Lake	Burns & Roe Inc	2	9-59	1450	1000	1000	1	420	CE	8.4	–	–																																	
El Paso Electric Co	El Paso, Texas	Rio Grande	Stone & Webster Engrg Corp	7	6-58	1450	1000	1000	1	350	BW	8.7	10.8	4.6																																	
Pacific Power & Light Co	Glenrock, Wyo	Dave Johnston	Ebasco Services Inc	3	10-58	1450	1000	1000	1*	750	BW	12.7	–	–																																	
Potomac Electric Co	Williamsport, Md	R Paul Smith	Sanderson and Porter	4	9-58	1450	1000	1000	1	600	CE	9.9	36.8	8.3																																	
Public Service Co of Colorado	Denver, Colo	Cherokee	Ebasco Services Inc	3	7-57	1450	1000	1000	1**	850	BW	28.9	46.2	27.9																																	
	Cañon City, Colo	Cameo	Stearns Roger Mfg Co	2	4-59	1450	1000	1000	1**	852	BW	36.4	38.7	28.6																																	
				1	7-57	850	900	–	1**	215	BW	17.5	8.9	0																																	
Southwestern Gas & Electric Co	Mooringsport, La	Lieberman	Sargent & Lundy	4	5-58	1450	1000	1000	1*	725	CE	23.0	37.7	10.4																																	
Southwestern Public Service Co	Borger, Texas	Station B		1	6-60	1450	1000	1000	1**	800	CE	–	–	–																																	
Tampa Electric Co	Tampa, Fla	Cannon	Stone & Webster Engrg Corp	1*	7-57	1450	1000	1000	1*	950	BW	14.6	–	–																																	
				2	9-58	1450	1000	1000	1*	950	BW	17.3	54.3	16.2																																	
Tucson Gas, Electric Light & Power Co	Tucson, Ariz	No. 4	Sanderson & Porter	1	5-58	1450	1000	1000	1*	575	CE	13.6	19.8	5.0																																	
				2	1-60	1450	1000	1000	1*	575	CE	13.6	19.8	5.0																																	
United Illuminating Co	Bridgeport, Conn	Bridgeport Harbor	Jackson & Moreland	1**	9-57	1450	1000	1000	1**	575	BW	17.1	36.8	10.9																																	
Utah Power & Light Co	Castle Gate, Utah	Carbon	Nesbitt Corp	2	7-57	1450	1000	1040	1	765	CE	37.2	47.9	10.2																																	
	Hyrum, Utah	Hyrum	Stearns Roger Mfg Co	1	5-59	1450	1000	1000	1*	350	BW	8.6	13.5	4.5																																	
Virginia Electric & Power Co	Russell, Texas	Clinch River	Sargent & Lundy	3*	5-58	850	900	–	1*	300	FW	23.3	4.2	0																																	
Washington Water Power Co	Spokane, Wash	Kettle Falls	Gilbert Associates Inc	3	6-58	1300	900	–	–	–	–	–	–	–																																	
Atlantic City Electric Co	Deepwater, N J	Deepwater	Gibbs & Hill Inc	7	3-57	1285	760	–	1*	550	CE	8.6	11.0	0																																	
Hawaiian Electric Co Ltd	Honolulu, Hawaii Kalau, Oahu	Honolulu Kalau	Bechtel Corp	9	12-57	1250	950	–	1	485	BW	7.5	18.3	0																																	
Missouri Public Service Co	Sibley, Mo		Rumo & McDonnell Engrg Co	5	10-59	1250	950	–	1*	485	BW	7.5	18.3	0																																	
Public Service Co of New Mexico	Albuquerque, N M	Reeves	Stearns Roger Mfg Co	1	1960	1250	960	–	1	450	BW	8.5	–	–																																	
Southern Nevada Power Co	Las Vegas, Nev	Reid Gardner	United Engineers & Constructors	2	11-58	1250	950	–	1*	425	BW	4.1	4.2	0																																	
Calgary Power Ltd	Calgary, Alberta, Canada	Wabamun	Montreal Engineering Co Ltd	3	12-59	1250	950	–	1	400	FW	17.9	14.5	0																																	
Central Power & Light Co	Bates, Texas	J L Bates	Sargent & Lundy	1	4-58	850	900	–	1*	630	BW	32.5	15.8	0																																	

A – Anthracite
AC – Allis-Chalmers Mfg Co
Ad – Admiralty
AdD – Admiralty D
AdI – Admiralty, inhibited
Al – Aluminum
AlB – Aluminum Bronze
AlBr – Aluminum Brass
AlBrI – Inhibited Aluminum Brass
AnAd – Antimonial Admiralty
AsAd – Arsenical Admiralty
AsAlB – Arsenical Admiralty Bronze
AsAdI – Inhibited Arsenical Admiralty
AsCu – Arsenical Copper
B – Variable pitch blade
BB – Brown Bowers Corp
Br – Brass
BW – Babcock & Wilcox Co
BWG – Babcock-Wilcox & Goldie-McCulloch Ltd
C – Coal, bituminous
CE – Combustion Engineering Inc
CES – Combustion Engineering-Superheater Ltd
CNi – Cupro nickel
Con – Condenser deaeration
CP – C A Parsons & Co, Ltd
Cy – Cyclone furnace
D – Damper
DB – Dry bottom
Du – Dual turbine and motor drive
EC – Erie City Iron Works
EE – English Electric Co Ltd
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
Mp – Two motors per pump
MV – Metropolitan-Vickers Electrical Co Ltd
N – None
O – Oil
P – Pulverized
PAd – Phosphorized Admiralty
Pl – Plate
R – Regulator
Re – Regenerative
RS – Riley Stoker Corp
S – Speed control
SiB – Silicon Bronze
SP – Springfield Boiler Co
SS – Spreader stoker
ST – Stag tar
T – Turbine drive
TG – Traveling grate stoker
Tu – Tubular
UF – Underfeed stoker
UI – Union Iron Works
V – Vane control
WE – Westinghouse Electric Corp
WI – Wickes Boiler Co
(B23) – Stoker grate area, sq ft
1 – Revised data, previously listed 9-56
2 – Once-through boiler
3 – Double reheat
4 – Hz 3600 rpm, to 1800 rpm
5 – Preferred standard
6 – Pressurized furnace
7 – Btu per cu ft
8 – Two, driven by main unit shaft
9 – Outdoor installation
10 – Half capacity
11 – Hz 3600 rpm, to 3600 rpm
12 – Units 1 and 2 tested under Appalachian Electric Power Co
13 – Heating plant
14 – Btu per sq ft per hr
15 – 1800 rpm
16 – Each one-third capacity
17 – Driven by generator shaft
18 – Semi-outdoors
19 – Revised data, previously listed 9-55
20 – Nameplate rating
21 – Replaces 25-cycle unit
22 – Future unit
23 – Fluid coupling
24 – Automatic extraction on one point
25 – Normally serves adjacent refinery
26 – Sub-bituminous
27 – Gas turbine exhaust supplies boiler air
28 – Jointly owned with California Electric Power Co
29 – Semi-bituminous

1957 Design Survey of Typical New Steam Central-Station Installations

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 & RW	BOILERS: Surface, 1000 sq ft: Superheater	BOILERS: Surface, 1000 sq ft: Economizer	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: Auxiliary temperature, F	FEED PUMPS: Drive	FEED PUMPS: Flow control	TURBINES: Number	TURBINES: Capacity, each, 1000 kw	TURBINES: Manufacturer	TURBINES: Bucket material	TURBINES: Nozzle material	Full-load turbine heat rate, Btu per kwhr	CONDENSERS: Surface, 1000 sq ft	CONDENSERS: No. water passes	CONDENSERS: Tube material	Total air leakage, lb per hr	Total generator capacity, this unit, 1000 kw, 1000 va
Philadelphia Electric Co	Eddystone, Pa	Eddystone		1*	12-58	5000*	1200	1050*	1	2000	CE	77	38	103					P	C	13.5	2100	AM	2T	S	1*	325	WE	0.5	R	54.5	350	1	A-B	4.75	325
Illinois Michigan Electric Co	Fairbanks, Ind	Breed	American Gas & Electric Svc Corp	2*	1-60	3500	1050	1050*	1	2178	CE	68	25	102.5					P	C	13.3	2125	AM	2T	S	1*	449	GE	0.75	F	49	384	1	A-Cu	3500*	410
Ohio Power Co	New Haven, W Va	Philip Sporn	American Gas & Electric Svc Corp	1	7-59	2500*	1050	1050*	1*	2973	BW	–	–	–					P	C	13.0	2170	AM	2T	S	1*	450	GE	0.75	F	49	384	1	A-Cu	3450	450
	Cresap, W Va	Kammer	American Gas & Electric Svc Corp	3	1958	2015	1050	1050	1*	1523	BW	111.5	–	–					P	C	10.5	2000	IT	–	S	2*	275	GE	0.75	–	50	110	1	A-	4,645	47
Consumers Power Co	Essexville, Mich	Dan E. Karn	Commonwealth Associates, Inc	1	7-58	2450	1050	1050	1	1750	CE	77	114.7	37.8					P	C	10.7	2100	AM	–	N	1*	250	WE	0.5	R	Cond.	115	1	A-Al	2500*	260
Central Hudson Gas & Electric Corp	Roseton, N.Y.	Danskammer Pt.	Burns & Roe, Inc.	2	6-60	2450	1050	1000	1	1750	BW	–	–	–					P	C	13.7	2100	AM	–	N	1	139	GE	0.5	–	50.3	90	1	A-C	1960*	275
Cincinnati Gas & Electric Co	Columbia Park, Ohio	Miami Fort	Sargent & Lundy	3	1959	2400	1050	1000	1	950	CE	18.0	84	19.0					P	C	13.7	2100	AM	–	N	1	117	GE	0.75	F	170	110	2	A-S	1700	72
Cleveland Electric Illuminating Co	Avondale, Ohio	Ashtabula		6	9-58	2400	1050	1000	1	1000	CE	19.6	104.6	16.4					P	C	11.5	2250	IM	–	S	1	260	GE	0.75	F	55.3	230	1	A-	4,446	84
126	16.9	0h	41.2	440.9	Re	M	V	M	V	P	C	11.4	2250	IM	–	S	1*	260	GE	0.75	F	55.3	230	1	A-	4,446	84
Detroit Edison Co	Ex. China Twp., Mich	St. Clair		5	4-59	2400	1050	1000	1	2100	BW	155	–	–					P	C	11.7	2200	IM*	–	N	1*	325	GE	0.5	–	Cond.	370	1	A-	5400	350
	Det. or Mich.	Beacon St.**		6	10-60	2400	1050	1000	1	2100	CE	38.3	–	–					P	C	12.2	2500	IM	–	N	1	15	–	3PF	–	20	–	–	–	2500*	30
Duke Power Co	Belmont, N.C.	Allen		3	10-59	950	700	–	1	500	CE	5.1	4.2	N					P	C	11.3	2250	IM	–	N	1	240	GE	0.5	–	Cond.	165	1	A-	1,500	60
165	11.8	0h	33.6	331.5	Re	M	V	M	V	P	C	13.3	2250	IM	–	N	1*	240	GE	0.75	F	Cond.	165	1	A-Al	–	60
				4	7-60	2400	1050	1000	1	1800	CE	35.9	170	31.5					P	C	13.3	2250	IM	–	N	1	240	GE	0.75	F	Cond.	165	1	A-Al	–	60
Niagara Mohawk Power Corp	Dunkirk, N.Y.	Dunkirk		3	1959	2400	1050	1000	1	1470	CE	18.4	116.3	24.7					P	C	13.3	2050	IT	–	S	1*	210	GE	0.75	F	40	95	–	A-Al	–	44
	Buffalo, N.Y.	Huntley		4	1959	2400	1050	1000	1	1470	CE	18.4	116.3	24.7					P	C	13.3	2050	IT	–	S	1*	210	GE	0.75	F	40	95	–	A-Al	–	44
[redacted]	[redacted]	Scriba	Commonwealth Associates, Inc	68	1958	2400	1050	1000	1	1470	CE	18.4	116.3	24.7					P	C	11.0	2100	IM	–	S	1	170	WE	1.75	F	Cond.	90	2	A-Al	2500*	110
				3	9-60	2400	1050	1000	1	1250	FW	27.4	37.6	67.6					P	C	11.0	2100	IM	–	S	1	170	WE	1.75	F	Cond.	90	2	A-Al	2500*	110
				4	9-61	2400	1050	1000	1	1250	FW	27.4	37.6	67.6					P	C	11.0	2100	IM	–	S	1	170	WE	1.75	F	Cond.	90	2	A-Al	2500*	110
Pacific Gas & Electric Co	Pittsburg, Calif.	Pittsburg		5	1-60	2400	1050	1000	1*	2160	BW	–	–	–					P	C	12.2	2100	IM	–	S	1*	325	WE	0.5	R	Cond.	350	1	A-Al	4,645	325
Pennsylvania Electric Co	Shawville, Pa.	Shawville	Gilbert Associates, Inc.	6	1-61	2400	1050	1000	1*	2160	BW	–	–	–					P	C	12.2	2100	IM	–	S	1	156	GE	0.5	–	37.5	220	–	–	5400	165
Pennsylvania Power & Light Co	York Haven, Pa.	Brunner Island	Ebasco Services, Inc.	3	5-59	2400	1050	1000	1	1200	CE	21.3	118.4	17.9					P	C	11.7	2100	IM	–	S	1	156	GE	0.5	–	37.5	220	–	–	5400	165
				4	12-58	2400	1050	1000	1	1200	CE	21.3	118.4	17.9					P	C	11.7	2100	IM	–	S	1	156	GE	0.5	–	37.5	220	–	–	5400	165
Potomac Electric Power Co	Dickerson, Md.	Dickerson	Stone & Webster Engrg. Corp.	1	8-60	2400	1000	1000	1*	2100	CE	34.2	179	50.0					P	C	11.9	2050	IM	–	S	1	350	WE	0.75	F	90	270	–	A-Al	–	293
South Carolina Electric & Gas Co.	Lone, S.C.	Urquhart	Sargent & Lundy	1	6-59	2400	1050	1000	1	1300	CE	25.4	104.7	24.3					P	C	12.2	2040	IT	IT	S	1*	175	GE	0.5	–	43.5	240	1	A-Al	3500*	83.5
Southern California Edison Co.	Huntington Beach, Calif.	Huntington Beach	Bechtel Corp.	1*	5-58	2400	1050	1000	1	910	CE	19.1	74.2	17.2					P	C	13.5	2500	IM	–	S	1*	125	GE	0.5	–	19.5	210	2	A-Al	2100*	75
				2*	10-58	2400	1050	1000	1	910	CE	19.1	74.2	17.2					P	C	13.5	2500	IM	–	S	1*	125	GE	0.5	–	19.5	210	2	A-Al	2100*	75
Southern Pacific Power Co.	Newark, Calif.	Dumbarton	Bechtel Corp.	1	6-58	2400	1050	1000	1*	1560	BW	12.8	114.8	30.7					P	C	12.4	–	IM	–	S	1*	200	GE	0.5	–	43.5	240	1	A-Al	3500*	83.5
				2	12-58	2400	1050	1000	1*	1560	BW	12.8	114.8	30.7					P	C	12.4	–	IM	–	S	1*	200	GE	0.5	–	43.5	240	1	A-Al	3500*	83.5
				1	4-59	2400	1050	1000	1*	1560	BW	12.8	114.8	30.7					P	C	12.4	305	IM	–	S	1*	200	GE	0.5	–	43.5	240	1	A-Al	3500*	83.5
				2	9-59	2400	1050	1000	1*	1560	BW	12.8	114.8	30.7					P	C	12.4	305	IM	–	S	1*	200	GE	0.5	–	43.5	240	1	A-Al	3500*	83.5
[redacted]	[redacted]	[redacted]		5	1959	2400	1050	1000	1	1780	FW	76.4	40.7	8.0					P	C	12.4	–	IM	IT	S	1*	225	AC	0.75	F	Cond.	180	1	A-Al	–	172.5
[redacted]	[redacted]	Bergen		1	1958	2350	1100	1050	1*	1900	FW	53.5	88.7	82.3					P	C	13.0	2100	IM	IT	S	1*	290	WE	0.7	F	Cond.	240	1	A-Al	–	175
				2	1958	2350	1100	1050	1*	1900	FW	53.5	88.7	82.3					P	C	13.0	2100	IM	IT	S	1*	290	WE	0.7	F	Cond.	240	1	A-Al	–	175
Public Service Co. of Oklahoma	Tulsa, Oklahoma	Tulsa	Black & Veatch	2**	9-56	2070	1000	1000	1*	1150	BW	11.6	–	–					P	C	12.4	–	IM	–	S	1*	315	WE	1.0	S	51	170	1	A-Al	685	54
				4**	3-58	2070	1000	1000	1*	1150	BW	11.6	–	–					P	C	12.4	–	IM	–	S	1*	455	WE	2PF	D	*	–	–	–	–	–
		Sargent & Lundy		3	3-57	1575	900	–	1*	885	BW	4.5	–	–					P	C	10.1	–	IM	–	S	1*	315	WE	1.0	S	51	170	1	A-Al	685	54
Alabama Power Co	Bucks, Ala.	Barry	Southern Services, Inc.	1	5-59	2000	1000	1000	1	1700	CE	33.6	104.7	30.2					P	C	11.9	2550	IM	–	S	1*	225	AC	0.75	F	Cond.	180	1	A-Al	–	147
Appalachian Electric Power Co.	Cliffo, W. Va.	Clinch River	American Gas & Electric Svc. Corp.	1	4-58	2000	1050	1050	1*	1523	BW	–	–	–					P	C	12.5	2400	IT	–	S	1*	275	GE	0.75	F	49	384	1	A-Cu	4,645	47
Central Illinois Public Service Co.	Metropolis, Ill.	Metropolis	Sargent & Lundy	2	7-58	2000	1050	1050	1*	1523	BW	–	–	–					P	C	12.5	2400	IT	–	S	1*	275	GE	0.75	F	49	384	1	A-Cu	4,645	47
				3	6-60	2000	1050	1000	1	1350	CE	39.4	77.8	26.3					P	C	10.4	1960	IM	–	S	1	150	GE	0.5	F	25.5	180	1	A-Al	2500*	125
Commonwealth Edison Co.	Chicago, Ill.	Crawford	Sargent & Lundy	7	5-58	2000	1050	1050	1	1450	CE	25.5	149.8	29.2					P	C	11.0	2050	IM	–	S	1	210	GE	0.5	F	25.5	180	1	A-Al	2500*	125
	Kewaunee, Wis.	Kewaunee	Sargent & Lundy	7	6-58	2000	1050	1000	1	2650	CE	36.6	210.3	40.5					P	C	10.0	2000	IM	–	S	1	210	GE	0.5	F	25.5	180	1	A-Al	2500*	125
	Joliet, Ill.	Joliet	Bechtel Corp.	19	12-58	2000	1050	1000	1	2700	CE	42.0	210.3	40.5					P	C	10.0	2000	IM	–	S	1	210	GE	0.5	F	25.5	180	1	A-Al	2500*	125
	Chicago, Ill.	Northwest	Sargent & Lundy	6	5-59	2000	1050	1000	1	2700	BW	63.9	162.4	107.8					P	C	10.0	2000	IM	–	S	1	210	GE	0.5	F	25.5	180	1	A-Al	2500*	125
[redacted]	[redacted]	[redacted]		4	12.57	730	560	–	–	–	–	–	–	–					–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Connecticut Light & Power Co.	Norwalk Cove	Norwalk Harbor	United Engineers & Constructors	1	10-59	2000	1000	1000	1	1150	CE-	18.4	97.6	20.2					P	C	13.7	2200	IM	–	S	1	150	GE	1.75	F	Cond.	90	1	A-Al	2500*	125
Connecticut Power Co.	Thames River, New London	Montville		6	1961	2400	1050	1000	1	2500	CE-	50.0	160	38.0					P	C	13.6	1909	IM**	–	S	1	349	AC	0.75	F	150	350	1	A-Al	2500*	125
[redacted]	Texas	San Antonio	Ebasco Services, Inc.	3	2-59	2000	1000	1000	1*	1550	CE-	25.3	97.7	30.0					P	C	10.7	2100	IM	–	S	1	220	GE	1.75	F	150	110	1	A-Al	2500*	125
				4	1-60	2000	1000	1000	1*	1550	CE-	25.3	97.7	30.0					P	C	10.7	2100	IM	–	S	1	220	GE	1.75	F	150	110	1	A-Al	2500*	125
	North Houston, Texas	North Houston	Ebasco Services, Inc.	2	1-60	2000	1000	1000	1*	1550	CE-	25.3	97.7	30.0					P	C	10.7	2100	IM	–	S	1	220	GE	1.75	F	150	110	1	A-Al	2500*	125
				1	4-58	1250	950	–	1*	650	RS-	21.8	25.9	N					P	C	10.7	2100	IM	–	S	1	220	GE	1.75	F	150	110	1	A-Al	2500*	125
[redacted]	[redacted]	[redacted]		3	1961	2000	1000	1000	1*	1950	FW-	14.6	30.8	58.8					P	C	10.7	2100	IM	–	S	1	220	GE	1.75	F	150	110	1	A-Al	2500*	125
Dayton Power & Light Co.	Miami-Hennepin, Ill.	Hennepin	Sargent & Lundy	2	5-58	2000	1050	1050	2	1350	CE-	39.4	79.7	26.8					P	C	10.4	1960	IM	–	Hy	1*	200	GE	1.75	F	65	175	1	A-	1800*	100
Mississippi Power & Light Co.	Jackson, Miss.	Rex Brown	Ebasco Services, Inc.	4	3-59	2000	1000	1000	1*	1350	CE-	39.4	79.7	26.8					P	C	10.4	1960	IM	–	Hy	1*	243	WE	0.75	F	150	110	1	A-Al	2500*	125
Oklahoma Gas & Electric Co.	Oklahoma City, Okla.	Mustang	Sargent & Lundy	1	5-59	2000	1000	1000	1*	1560	BW-	34.3	99.8	73.2					P	C	10.4	1960	IM	–	Hy	1*	236	WE	1.0	F	150	110	1	A-Al	2500*	125
San Diego Gas & Electric Co.	Chula Vista, Calif.	South Bay	Pioneer Service & Engrg. Co.	1	7-60	2000	1000	1000	1*	940	BW-	–	–	–					P	C	10.4	1960	IM	–	Hy	1*	220	GE	1.75	F	150	110	1	A-Al	2500*	125
	[redacted], Calif.	Encina	Pioneer Service & Engrg. Co.	3	7-58	1450	1000	1000	1	900	BW	–	–	–					P	C	10.4	1960	IM	–	Hy	1*	270	AC	0.75	F	150	110	1	A-Al	2500*	125
Southern Electric Generating Co.	Acts, Acts, Ala.	Sagno No. 1	Southern Services, Inc.	1	4-60	2000	1000	1000	1	1200	BW-	25.7	–	–					P	C	10.4	1960	IM	–	Hy	1*	200	GE	1.75	F	65	175	1	A-	1800*	100
				2	7-60	2000	1000	1000	1	1200	BW-	25.7	–	–					P	C	10.4	1960	IM	–	Hy	1*	243	WE	0.75	F	150	110	1	A-Al	2500*	125
[redacted]	[redacted]	[redacted]	Ebasco Services, Inc.	1	2-60	2000	1000	1000	1*	1550	FW-	3.0	21.4	46.2					P	C	10.4	1960	IM	–	Hy	1*	236	WE	1.0	F	150	110	1	A-Al	2500*	125
Tulsa Edison Co.	Lake Erie, Wagner Bay	Bay Shore	R. T. Seabolt	3	5-59	1400	1000	1000	1*	1300	RS-	23.2	75.2	49.9					P	C	10.4	1960	IM	–	Hy	1*	220	GE	1.75	F	150	110	1	A-Al	2500*	125
Union Electric Co. of Missouri	Portage, Ohio	Portage		2	1-58	2000	1050	1000	1	950	BW-	35.2	72.8	43.7					P	C	10.4	1960	IM	–	Hy	1*	220	GE	1.75	F	150	110	1	A-Al	2500*	125
Utah Power & Light Co.	Ontogah, Okla.	Ontogah	Black & Veatch	3	3-61	1480	1000	1000	1*	1150	BW	11.6	50.0	33.2					P	C	12.4	1900	IM	–	S	1*	315	WE	1.0	S	51	170	1	A-Al	685	54
Virginia Electric & Power Co.	Ariz. Tempe, Ariz.	Ontolla	Ebasco Services, Inc.	1	4-60	1400	1000	1000	1*	800	CE*	18.3	–	–					P	C	10.4	1960	IM	–	S	1*	315	WE	1.0	S	51	170	1	A-Al	685	54
	Yuma, Ariz.	Yuma Ariz.**	Bechtel Corp.	2	7-60	1800	1000	1000	1*	800	CE	18.2	–	–					P	C	10.4	1960	IM	–	S	1*	315	WE	1.0	S	51	170	1	A-Al	685	54
				1	3-61	1400	1000	1000	1*	575	CE-	14.1	–	–					P	C	10.4	1960	IM	–	S	1*	315	WE	1.0	S	51	170	1	A-Al	685	54

A — Anthracite
AC — Allis Chalmers Mfg. Co.
Ag — Admiralty
AlD — Aluminum D
Ad — Admiralty, Inhibited
Al — Aluminum
AlBr — Aluminum Bronze
AlBrn — Aluminum Brass
AlNi — Inhibited Aluminum Nickel
AsAd — Arsenical Admiralty
AsCu — Arsenical Copper
AsAdI — Inhibited Arsenical Admiralty
B — Variable pitch blade
BB — Brown Boveri Corp.
Br — Brass
BW — Babcock & Wilcox Co.
CAN — Carbon-Nitrogen & Gordon-McCulloch Ltd.
C — Coal, bituminous
CE — Combustion Engineering, Inc.
CES — Combustion Engineering-Superheater, Ltd.
CNi — Cupro nickel
Con — Condenser deaeration
CP — C. A. Parsons & Co., Ltd.
Cy — Cyclone furnace
D — Damper
DB — Dry bottom
Du — Dual turbine and motor drive
FC — Fine Celtic form blades
EE — English Electric Co. Ltd.
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
Mo — Two motors per bin
MV — Metropolitan-Vickers Electrical Co. Ltd.
N — None
O — Oil
P — Pulverized
PAd — Phosphorized Admiralty
Pl — Plate
R — Regulatex
Re — Regenerative
RS — Riley Stoker Corp.
S — Speed control
Si — Silicon Bronze
SP — Springfield Boiler Co.
SS — Spreader stoker
ST — Stag tail
T — Turbine drive
TG — Traveling grate stoker
Tu — Tubular
UF — Underfeed stoker
UI — Union Iron Works
V — Vane control
WE — Westinghouse Electric Corp.
WY — Wickard Boiler Co.
(823) — Stoker grate area, sq ft

1 — Revised data previously listed 9-56
2 — Once-through boiler
3 — Double reheat
4 — Hp 3600 rpm, ip 1800 rpm
5 — Preferred standard
6 — Pressurized furnace
7 — Bituminous
8 — Two, driven by main unit shaft
9 — Outdoor installation
10 — Half capacity
11 — Hp 3600 rpm, ip 3600 rpm
12 — Units 1 and 2 listed under Appalachian Electric Power Co.
13 — Heating plant
14 — Btu per sq ft per hr
15 — 1800 rpm
16 — Each one-third capacity
17 — Driven by generator shaft
18 — Semi-outdoors
19 — Revised data previously listed 9-55
20 — Nameplate rating
21 — Reheat, 2-cycle unit
22 — Future coal
24 — Flue-gas conditioning
24 — Automatic extraction on one point
25 — Normally serves adjacent reheater
26 — Sub-bituminous
27 — Gas turbine exhaust supplies boiler air
28 — Normally owned with Oklahoma Electric Power Co.
29 — Normally operated with Tulsa, 200,000 kw

1957 Design Survey: Typical Industrial, [illegible] titutional Plants, Above 200 psi

Compiled by P. C. Bellas, Associate Editor

Company & Location	Consulting Engineers	First operation new units	Operating steam pressure, psig	Operating steam temperature, F	Number	BOILERS: Capacity, each, 1000 lb per hr	BOILERS: Manufacturer	BOILERS: Design & NPR surface, 1000 sq ft	BOILERS: Superheater surface, 1000 sq ft	BOILERS: Furnace volume, 1000 cu ft	BOILERS: Heat release, 1000 Btu per cu ft per hr	BOILERS: Economizer surface per boiler, 1000 sq ft	BOILERS: Air heater surface per boiler, 1000 sq ft	BOILERS: Air heater type	BOILERS: Draft-control type	BOILERS: Firing
600 PSI AND OVER																
Allegheny Ludlum Steel Corp., Dunkirk, N.Y.	Ebasco Services, Inc. (Agents)	5-58	1850	1000	3	1000.0	B&W	17.0	4.0	88.2	54.0	13.7	-	Re	Mf	C
St. Joseph Lead Co., Josephtown, Pa.	Kuljian Engineers	5-58	1850	1000	2	475.0	CE	7.8	2.2.8	29.8	39.2	15.3	63.4	Re	F. Mf	C
Aluminum Co. of America, Evansville, Indiana	Ebasco Services, Inc.	10-57	1800	1000	3	1000.0	B&W	17.1	29.2	88.2	15.9	13.7	294.0	Re	Mf	C
Union Carbide Nuclear Co., Oak Ridge, Tenn.	Autocon Corp.	6-60	1525	1000	1	600.0	CE	7.0	10.7	44.5	13.8	13.2	155.5	Re	Mf	C
Rhinelander Paper Co., Rhinelander, Wis.	Pitzner & Shultz	6-58	1500	950	1	250.0	B&W	5.0	-	9.8	29.5	4.5	72.9	Tu	-	C
Dow Chemical Co., Freeport, Texas, Plant B	Bechtel Corp.	1-58	1300	890	5	900.0	RS	19.7	16.2	22.6	30.5	9.2	51.5	Tu	-	G
Dow Chemical Co., Louisiana Div., Baton Rouge, La.	Bechtel Corp.	1958	1300	890	2	900.0	RS	21.3	18.9	26.6	30.3	9.5	57.5	Tu	None	G
Borger, Texas Plant, Cities Service District	Fluor Engineers & Constructors	6-57	965	850	1	220.0	B&W	24.4	-	18.3	19.5	-	57.0	Tu	Mf	G, B, BF, Pd
Montreal River Co., Philipsburg, N.J.	Gilbert Associates, Inc.	1958	950	640	2	N.R.	CE	-	-	-	-	-	-	Re	Mf, D	-
American Cyanamid Co., Bound Brook, N.J.	Ebasco Services, Inc.	12-57	900	825	1	215.0	B&W	13.7	13.9	6.9	10.0	Sp	62.5	Re	El	C
Minneapolis-Honeywell Regulator Co., Minneapolis, Minn.	Sargent & Lundy	-	875	860	1	150.0	RW	11.0	9.3	-	25.6	5.9	9.15	Tu	Mf	C
Kaiser Aluminum & Chem. Corp. Chalmette Works, Chalmette, La.	Chester T. Main, Inc.	5-57	875	900	1	125.0	RW	6.3	4.8	5.5	43.0	-	20.4	Re	None	C
American Metal Climax, Inc., Henry Mine, Fairbanks, Alaska	Sargent & Lundy	1957	875	900	1	125.0	CE	10.9	1.8	9.1	-	-	18.4	Tu	Mf	C
Olin Mathieson Chemical Corp., Saltville, Va.	Wood Corp. Eng. Dept.	3-55 2-57	875	825	2	250.0	CE	39.2	-	18.6	17.2	-	55.8	Re	Mf	C
Kaiser Aluminum & Chem. Corp. Gramercy, La.	Kaiser Engineers	1957	865	900	3	350.0	RS	29.8	11.1	16.8	29.7	-	51.5	Re	-	G
Aluminum Co. of America, Rockdale, Texas	Chester T. Main, Inc.	-	850	825	2	160.0	B&W	18.3	-	10.7	17.7	-	29.5	Re	Mf	C, D
Aluminum Co. of America, Point Comfort, Tex.	Ebasco Services, Inc.	5-58	850	825	4	12.3 12.3 2.00 19.5	B&W	14.5	-	9.6	-	-	22.7	Tu	-	-
500 TO 599 PSI																
The Youngstown Sheet & Tube Co., E. Chicago, Ind.	Peth & Reed	1-57	825	750	2	390	RW	31.1	6.2	22.5	18.9	7.5	45.2	Tu	Mf	C, Q, G; CB
Oxford Paper Co., Rumford, Maine	Charles T. Main, Inc.	-	750	-	-	-	-	-	-	-	-	-	-	-	-	-
Northern Ky. Water, Ideal	R. W. Hemphill	12-58	686	750	1	150	RS	16.9	2.8	10.0	20.0	-	21.3	Tu	Mf	C, D, G
American Tobacco Co., Reidsville, N.C.	-	1-58	650	745	3	200	EC	21.3	7.5	9.0	10.0	0	21.0	Tu	-	G
Standard Oil Co. (Ind.), Mandan, N.D.	Stearns-Roger Co., Denver, Colo.	1-54	650	750	3	150	RW	11.2	2.3	6.3	13.0	0	114.8	Re	None	G
Monsanto Chemical Co., Texas City, Texas	-	1-58	650	750	3	97.5	CE	-	-	-	-	-	-	Re	-	G
Owens-Illinois Pulp Corp., Valdosta, Ga.	Stone & Webster Eng. Co.	12-57	650	650	1	175.0	RW	-	-	-	-	-	-	Re	Mf	C, D
Hawaiian Pineapple Co., Ltd.	R. W. Hemphill	1958	650	750	3	117.0	CE	-	-	-	18.4	-	-	Tu	-	D, G
Publishers Paper Corp., Longview, Wash.	H. K. Ferguson Co.	8-57	650	750	2	700.0	RW	15.4	-	10.7	-	-	-	Tu	Mf	C, D, G
Publishers Paper Co., Quinault, Oregon	Parker Eng. Corp.	9-58	650	750	1	325.0	RW	16.7	2.2	7.7	19.8	-	29.7	Tu	Mf	G
Kaiser Aluminum & Chem. Corp., Baton Rouge, La.	-	11-58	625	600	2	N.R.	Va	N.R.	-	-	-	-	-	-	-	G
Wyckoff & Farnham, Division of Universal Match Corp., Oakland, Calif.	-	12-55	625	725	1	140.0	RW	15.0	-	7.5	29.1	3.2	70.5	Tu	Mf	C
Lone Star Cement Corp., Nazareth, Pa.	J. K. Hedrick and Co.	1-56	625	740	1	240.0	CE	23.3	-	15.9	-	-	76.5	Tu	Mf	C, G
Publishers Paper Co., Oregon City, Oregon	Stone & Webster	6-57	625	750	3	175.0	RW	17.6	-	5.4	15.0	-	17.5	Tu	-	G
Owens-Illinois, Inc., Waterford, Ohio	Heekin and Poorman	1957	620	740	3	355.0	Hr	33.7	-	5.5	34.5	-	38.2	Tu	-	C
Tennessee Products & Chemical Corp., Nashville, Tenn.	Ebasco	12-56	609	750	3	45.0	CE	-	-	-	-	-	-	Tu	None	G
Lone Star Cement Corp., Greenville, Md.	Stearns-Roger Co.	11-54	600	725	1	100.0	CE	9.5	2.0	4.7	30.0	-	5.0	Tu	Mf	G
Kaiser Aluminum & Chemical Corp., Ore.	Kaiser Eng. Div.	6-58	600	750	1	290.0	RW	50.4	10.5	52.3	-	4.9	73.3	Tu	-	BL
Crossett Lumber Co., Chester, Ore.	-	6-58	600	710	1	190.0	CE	30.0	-	-	-	-	39.0	Tu	-	G, B
Kraft Foods Co., Lowville, N.Y.	Kraft Engineering Dept.	5-56	600	825	1	100.0	Re	19.8	3.0	15.0	27.8	-	18.0	Tu	-	D
Kraft Foods Co., Lowville, N.Y.	Kraft Engineering Dept.	7-57	610	750	1	90.0	CE	9.3	-	7.6	34.9	1.5	4.0	Tu	Mf	SS
Koppers Co., Pittsburgh, Pa.	Pitzner & Shultz	12-57	600	750	5	60.0	RW	11.6	1.3	7.0	24.0	2.6	-	-	-	FG
Kraft Foods Co., Dunkirk, N.Y.	H. K. Ferguson	8-56	600	675	1	215.5	RW	27.3	5.4	13.7	-	4.5	236.7	Tu	F	BL
Kraft Foods Co., Memphis, Tenn.	H. K. Ferguson	11-57	600	750	1	190.0	CE	-	-	-	-	-	-	Re	Mf	DG
Kraft Foods Co., Champaign, Ill.	H. K. Ferguson	8-56	600	650	1	250.0	CE	29.0	-	18.5	17.6	-	12.0	Re	Mf	C
Kraft Foods Co., Memphis, Tenn.	H. K. Ferguson	1-55	600	750	2	300.0	RW	27.0	-	-	-	-	-	Tu	-	D

Company & Location	Consulting Engineers	STEAM TURBINES: Drive	STEAM TURBINES: Arrangement	STEAM TURBINES: Speed	STEAM TURBINES: Governor control	STEAM TURBINES: Rotor, forged or built	STEAM TURBINES: Axis, vertical or horizontal	STEAM TURBINES: Drive	STEAM TURBINES: Flow, impulse or reaction	TURBINES: Capacity, each, kW	TURBINES: Manufacturer	TURBINES: Background, psig	TURBINES: No. of bleed & extraction lines	TURBINES: Type	CONDENSERS: Surface, 1000 sq ft	CONDENSERS: No. water passes	CONDENSERS: Tube material	ELECTRICAL POWER: Source	ELECTRICAL POWER: Generator voltage, kv	ELECTRICAL POWER: Plant distribution voltage, kv	ELECTRICAL POWER: Transformer type	ELECTRICAL POWER: Switchgear, kv, amps, type	ELECTRICAL POWER: Neutral grounding	ELECTRICAL POWER: Emergency power, kw, prime mover, type	ELECTRICAL POWER: Emergency power, kw, prime mover, type
600 PSI AND OVER																									
Allegheny Ludlum Steel Corp., Dunkirk, N.Y.	Ebasco Services, Inc. (Agents)	Tu	M	-	M	D	Dr	-	M	R	125	GE	DF	2	Co	75	2	Al	GE							
St. Joseph Lead Co., Josephtown, Pa.	Kuljian Engineers	Tu	M	3600	M	D/S	Dr	Pr	23	R	52	WE	T/S	5	Co	35	2	Al/S	GE	13.8	13.8	13.8	13	13.8/2.4	4kv	13
Aluminum Co. of America, Evansville, Indiana	Ebasco Services, Inc.	Tu	M	-	M	S	De Le	Fr	Im	M	125	GE	Z	4	Co	75	2	Al	GE	13.8	4.16	13	13	13.8/2.4	4kv	13
Union Carbide Nuclear Co., Oak Ridge, Tenn.	Autocon Corp.	Tu	M	-	M	Hy	Se Le	Pr	M	R	75	GE	S	3	Co	50	2	Al	GE	13.8	4.16	13	13	13.8/2.4	4kv	13
Rhinelander Paper Co., Rhinelander, Wis.	Pitzner & Shultz	Tu	M	-	-	-	Dr	My	MT	R	7.5	WF	3600	2	Al W	-	-	-	GE	4.8	2.4	4.8	4.8	4.8	-	-
Dow Chemical Co., Freeport, Texas, Plant B	Bechtel Corp.	Tu	M	5	M	V	Dr	-	M	R	2-50 1-40	GE	3,211 P	2,2	2 At Co 1 At NC	3,13 % 1%	Ti	Al/Br	13.8/2.4	13.8	13.8	13	13.8/2.4	4kv	13	13
Dow Chemical Co., Louisiana Div., Baton Rouge, La.	Bechtel Corp.	Tu	M	-	M	D	Dr	-	M	F	MC	GE	E S	2	Cu-Ni	10	1	Al	GE 13.8	13.8	-	13	4.16	4kv	-	-
Borger, Texas Plant, Cities Service District	Fluor Engineers & Constructors	Tu	Dr	5	1	Sw	Sl	In	MT	R	35	AC	2W	-	NC	-	-	-	GE 13.8	13.8	13.8	13	13.8/2.4	4kv	13	-
Montreal River Co., Philipsburg, N.J.	Gilbert Associates, Inc.	Tu	M	-	-	-	Se	Pa	T	R	-	-	-	-	-	-	-	-	-	4.16	4.16	13	4.16	4kv	13	-
American Cyanamid Co., Bound Brook, N.J.	Ebasco Services, Inc.	Tu	M	-	-	-	Se	Hy	M	R	7.5	WE	12%	-	NC	-	-	-	-	13.8	-	A	13	-	-	-
Minneapolis-Honeywell Regulator Co., Minneapolis, Minn.	Sargent & Lundy	-	M	-	M	Hy	Se	Pr	2W	R	7.5	GE	1	-	At Cu	6	-	As Sn	13.8	4.16	4.16	4.16	4.16	-	4.16	-
Kaiser Aluminum & Chem. Corp., Chalmette Works, Chalmette, La.	Chester T. Main, Inc.	Tu	M	3600	-	-	-	Hy	M	R	32.5	AC	-	4	Co	30	2	Al	GE 13.8	13.8	-	13	13.8/2.4	4kv	-	-
American Metal Climax, Inc., Henry Mine, Fairbanks, Alaska	Sargent & Lundy	Tu	M	-	M	Hy	Se	Pr	MT	R	5	GE	20	1	At NC	-	-	-	GE 4.16	4.16	4.16	4.16	4.16	-	-	-
Olin Mathieson Chemical Corp., Saltville, Va.	Wood Corp. Eng. Dept.	Tu	M	3600	Dr	S/D Hy	Se	Pr	Im	T	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kaiser Aluminum & Chem. Corp., Gramercy, La.	Kaiser Engineers	Tu	M	-	-	S	Se	My	T	S	15.6	GE	60	1	At NC	-	-	-	GE 13.8/2.4	2.4	2.4/0.48	2.4	2.4/0.48	2.4	-	-
Aluminum Co. of America, Rockdale, Texas	Chester T. Main, Inc.	Tu	M	3600	M	D	Se	Pr	M	R	9.2	CY	1	1	Al Cu	0.5	2	Al	13.8	4.8	4.8	13	13	-	-	-
Aluminum Co. of America, Point Comfort, Tex.	Ebasco Services, Inc.	Tu	M	-	M	Hy	-	-	M	R	12.5	GE	50	1	Al	-	-	-	13	4.7	4.16	A	4.16	-	-	-
500 TO 599 PSI																										
The Youngstown Sheet & Tube Co., E. Chicago, Ind.	Peth & Reed	Tu	M	3600	M	D	Dr	Hy	M	R	25	WE GE	-	-	At Co	30	2	Al	GE 13.8	13	4.16/2.4	13	13.8/2.4	4kv	-	-
Oxford Paper Co., Rumford, Maine	Charles T. Main, Inc.	-	-	-	-	-	-	-	-	-	10	WE	0%	1	At Co	5	2	Al	GE 13.8	13.8	13.8	-	13.8/2.4	4kv	-	-
Northern Ky. Water, Ideal	R. W. Hemphill	Tu	M	3600	M	S/D	-	Pa	M	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
American Tobacco Co., Reidsville, N.C.	-	Tu	M	-	M	S	Se	-	2W	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Standard Oil Co. (Ind.), Mandan, N.D.	Stearns-Roger Co., Denver, Colo.	Tu	M	3600	T	T	Se	-	MT	R	9.5	WE	165	-	NC	-	-	-	GE 4.16	4.16	-	4.16	4.16	4kv	4.16	-
Monsanto Chemical Co., Texas City, Texas	-	Tu	M	-	T	S	Dr	-	T	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Owens-Illinois Pulp Corp., Valdosta, Ga.	Stone & Webster Eng. Co.	Tu	M	3600	M	D	Dr	Hy	M	M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hawaiian Pineapple Co., Ltd.	R. W. Hemphill	Tu	M	3600	M	D	-	-	2W	R	4	GE	-	1	At NC	-	2	Al	GE 13.8	4.16	4.16	13	4.16	4kv	-	-
Publishers Paper Corp., Longview, Wash.	H. K. Ferguson Co.	Tu	M	3600	M	D	Dr	-	2W	R	9.3	GE	S	2	At Cu	20	2	Al	GE 13.8	4.16	4.16	13	4.16	4kv	-	-
Publishers Paper Co., Quinault, Oregon	Parker Eng. Corp.	Tu	M	3600	T	S	Se	-	T	SR	7.5	GE	-	1	At	5	2	As Cu	GE 13.8	2.4	4.16	2.4	4.16	4kv	-	-
Kaiser Aluminum & Chemical Corp., Baton Rouge, La.	-	Tu	M	3600	M	D	Dr	-	2W	R	3.4	GE	25*	-	NC	-	-	-	GE 4.16	4.16	-	4	4.16	4kv	-	-
Wyckoff & Farnham, Division of Universal Match Corp., Oakland, Calif.	-	Tu	M	3600	M	Hy	Se	Pa	M	R	4.4	WE	50	-	At	-	-	-	GE 4.16	-	-	4	4.16	4kv	-	4M
Lone Star Cement Corp., Nazareth, Pa.	J. K. Hedrick and Co.	Tu	M	3600	M	D	-	-	M	R	20	GE	-	1	NC	-	-	-	GE 13.8	13.8	13.8	13	13.8/2.4	4kv	-	4M
Publishers Paper Co., Oregon City, Oregon	Stone & Webster	Tu	M	3600	M	D	-	-	M	R	20	GE	-	1	NC	-	-	-	GE 13.8	13.8	13.8	13	13.8/2.4	4kv	-	-
Owens-Illinois, Inc., Waterford, Ohio	Heekin and Poorman	Tu	M	3600	T	S	Se	Hy	T	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tennessee Products & Chemical Corp., Nashville, Tenn.	Ebasco	Tu	M	3600	M	D	Dr	-	4M,RT	R	-	WE	17	-	Cu	5	-	-	GE 4.16	-	-	13	4.16	-	-	-
Lone Star Cement Corp., Greenville, Md.	Stearns-Roger Co.	Tu	M	3600	M	Hy	-	Hy	1M,2T	S	2.7 A	GE	40 PH	-	NC	-	-	-	GE 13	13	13	13	13	4kv	-	-
Kaiser Aluminum & Chemical Corp., Ore.	Kaiser Eng. Div.	Tu	M	3600	M	D Hy	Se	Pa	T	R	C 4	AB WE	14	-	At Cu	-	-	-	GE 4.16	4.16	-	4	4.16	4kv	-	-
Crossett Lumber Co., Chester, Ore.	-	Tu	M	3600	M	D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kraft Foods Co., Lowville, N.Y.	Kraft Engineering Dept.	Tu	M	3600	M	D	Se	-	MT	R	17.5	GE	1	-	At Co	15	2	Al/Br	GE 13.8	13.8	13.8	13	13.8/2.4	4kv	13	-
Kraft Foods Co., Lowville, N.Y.	Kraft Engineering Dept.	Tu	M	3600	M	S	Se	Pa	T	R	C 4	AB WE	14	-	At Cu	-	-	-	GE 4.16	4.16	4.16/2.4	13	4.16/2.4	4kv	13	-
Koppers Co., Pittsburgh, Pa.	Pitzner & Shultz	Tu	M	3600	M	D	M	F	Se	Pa	T	S	3	WE	100	-	-	-	-	-	-	-	-	-	-	-
Kraft Foods Co., Dunkirk, N.Y.	H. K. Ferguson	Tu	M	3600	T	V	T	SV	So	-	1M,2T	R	-	Im	65	-	NC	-	-	-	-	-	-	-	-	-
Kraft Foods Co., Memphis, Tenn.	H. K. Ferguson	Tu	M	3600	M	D	-	-	-	-	-	R	5	EW	3.5	1	-	-	-	-	-	-	-	-	-	-
Kraft Foods Co., Champaign, Ill.	H. K. Ferguson	Tu	M	3600	M	D	MT	SR	-	R	5	-	-	-	-	-	-	-	GE 13.8	2.3	GE 2.3	GE 13	GE 2.3/0.48	4kv	-	-
Kraft Foods Co., Memphis, Tenn.	H. K. Ferguson	Tu	M	3600	M	D	-	-	2W	R	1%	F 2.3	GE	1	-	A	At Co	12	2	At	GE 13.8	4.16	4.16	13	4.16/2.4	4kv	2kV

AC – Allis-Chalmers Mfg. Co.
Ad – Admiralty
ADI – Industrial Aluminum
AF – Automatic Electric
Al – Aluminum
Al/Br – Aluminum Bronze
An – Ammonite
As – Asbestos

As/Cu – Asbestos Copper
B – Brass
Bab – Babbitt
BF – Brown Fintube Co.
BL – Black Lignum
Br – Bronze
Ra – Ramelson & Wilcox Co.

B&W – Babcock-Wilcox & Galena-Signal-Oil Co.
C – Coal, bituminous
CB – Cone bronze
CE – Combustion Engineering Inc.
CEL – Combustion Engineering Superheater Ltd.
CG – Coke oven gas
Ch – Chickering
Cu/Ni – Copper Nickel

Cy – Cyclone firing
D – Distillate Oil
De – Deaerator
Di – Differential
Dr – Dry type
Dw – Dual-flow
E – Electrostatic
EC – Erie City Iron Works

El – Elliott Co.
EM – Electric Machinery Mfg. Co.
Ex – Expander
FW – Foster Wheeler Corp.
G – Gas
GE – General Electric Co.
GP – Generators and gas engines
Gr – Ground

Hydraulic
ite Ingot Co. Ltd
Kerner Co.
Lignum
Motor driven
Regenerative Cooling
Mechanical

NC – Non Condensing
O – Oil
Ov – Overfeed
Pn – Pneumatic
PP – Pulverized powder
Pr – Propri
R – Regulator

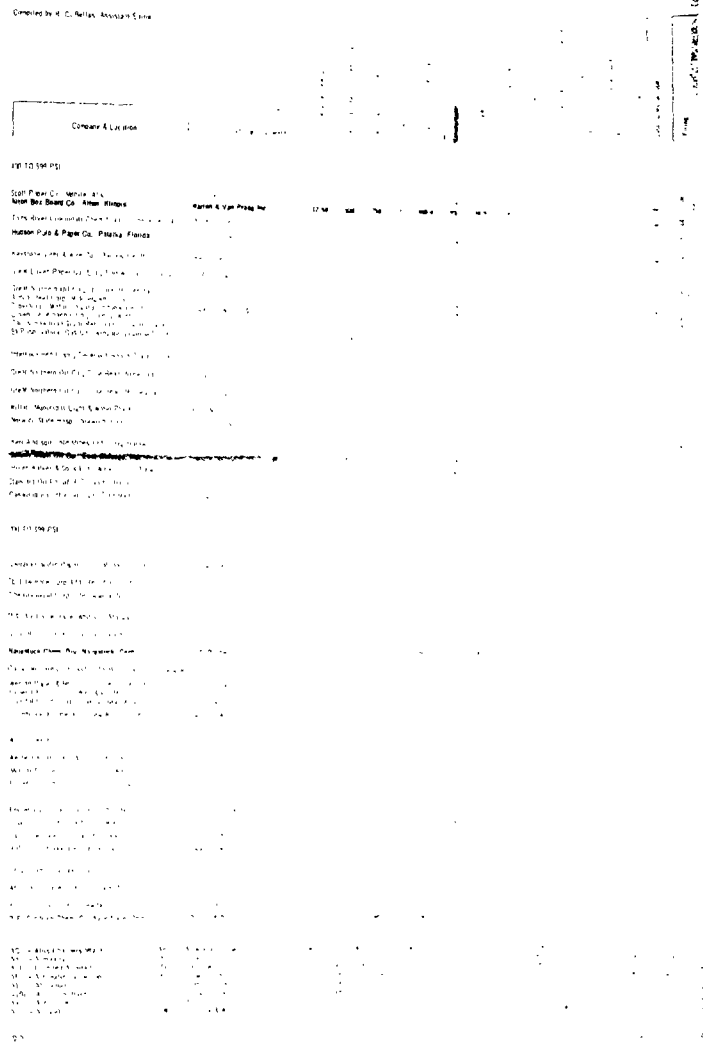
Re – Regenerative
RS – Riley Stoker Corp.
S – Spreader stoker
SC – Steam coil
Se – Secondary
So – Saturated
SS – Superheater

T – Turbine drive
VG – Vaporizing grate stoker
Tu – Tubular
Ut – Union Iron Works
V – Vane control
Va – Henry Vogt Machine Co.
W – Steel

WE – Westinghouse Electric Corp.
Wh – Waste heat
W – Brown Boiler Co.
Wo – Worthington Corp.
1 – All types D, Cy, G
2 – Rv2
3 – 100% Pulver. co. fl.

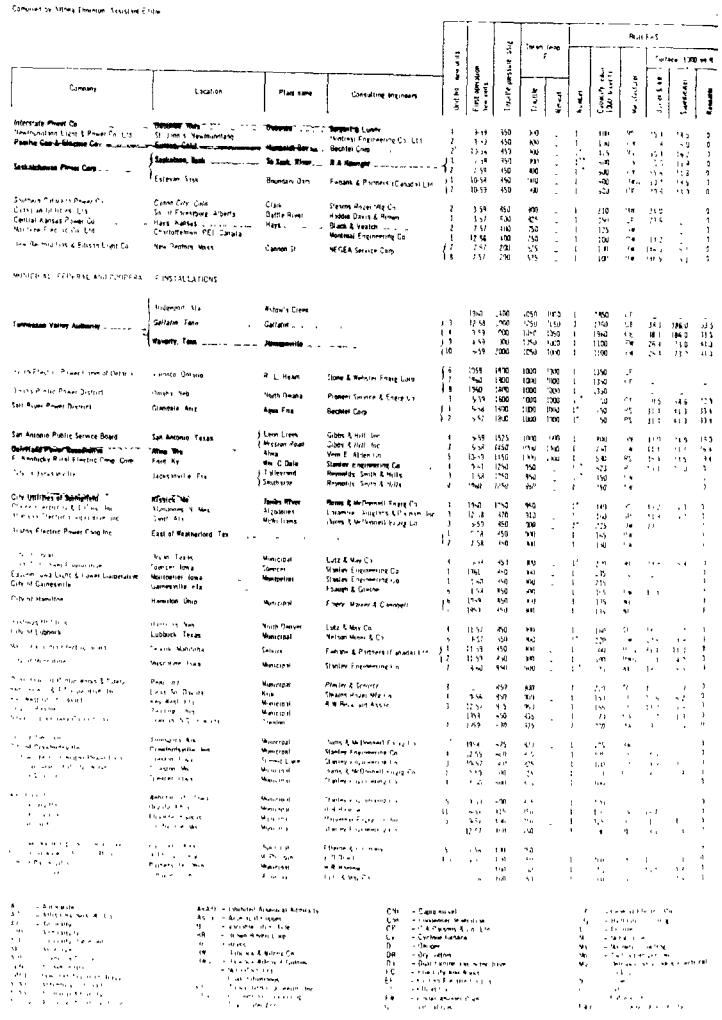
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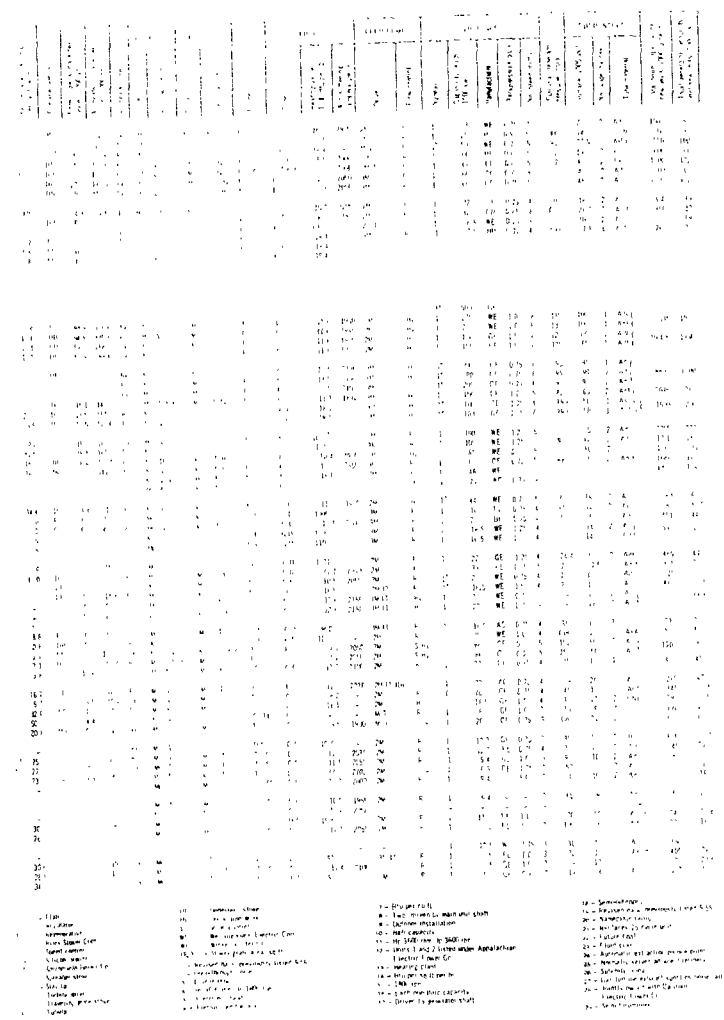
1957 Design Survey: Typical Industrial, stitutional Plants, Above 200 psi





1957 Design Survey of Typical New Steam Central-Station Installations





1957 Design Survey: Typical Industrial,

Compiled by R C Bellas, Assistant Editor

Company & Location	Consulting engineers	First operation, new units	Nominal steam pressure, psig	Nominal 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	ELECTRICAL POWER: Plant distribution voltage	ELECTRICAL POWER: Transformer	ELECTRICAL POWER: Switchgear relay protection	ELECTRICAL POWER: Neutral grounding	Total boiler capacity including new units, 1000 lb per hr	Total generator capacity including new units, 1000 kw
175 TO 200 PSIG																		
Sicks Breweries Ltd, Lethbridge, Ont.		8-56	200	385	2	25	F&L	O,G	–	–	–	PP	0.22	O	Ov	–	50	–
Imov & Co, Beachmont, Ont.		5-57	200	366	2	25	FW	#	Hy	Co	AC	DP	0.44	O	Ov	–	50	–
Shell Oil Co of Canada Ltd, Shellburn, Vancouver	Swanson Wright & Co, Eng, Ltd.	1-58	200	485	1	50	BWG	O	–	–	–	–	3.31	O	–	–	180	–
Jones & Laughlin Steel Corp, Aliquippa, Pa.	Kaiman Corp	2-57	200	510	1	68	BW	TG	–	–	–	–	–	–	–	–	–	–
Courtaulds Canada Ltd, Cornwall, Ont.		4-57	200	388	2	115	BW	O	–	–	–	–	–	–	–	–	550	–
Convair, Div of Gen'l Dynamics, Palmdale, Cal		11-56	200	Sat	4	35	K	O	–	–	–	PP	0.48	O As	Ov	Pr,Se	140	–
Ford Motor Co, Mt. Clemens, Mich	Austin Co	3-58	185	Sat	2	25	WI	O,G	–	–	–	PP	0.48	As	–	–	50	–
Chevrolet-St. Louis, St. Louis, Mo.	Bodey, Benjamin & Woodhouse	10-58	180	Sat	4	150	WI	NG G	Pn	–	–	–	–	–	–	–	–	–
Euclid Div, G M C, Hudson, O.		2-58	175	Sat	2	40	CE	O,G	–	–	–	PP	0.48	Dr	Air	Se	80	–
N. J. State Prison Farm, Leesburg, N. J.	Philip H. Doppenheimer	–	175	378	2	14	BW	O	–	–	–	PP	–	–	–	–	28	–
Rochester Products Div, G M C, Rochester, N. Y.		8-55	175	280	1	60	BW	TG	–	–	–	PP	0.44	O,Gr	Ov,Gr	Se	154	–
[redacted]		3-57	175	368	1	15	FW	O	–	–	–	–	–	–	–	–	–	–
Newberry State Hospital, Newberry, Mich.	E R Little Associates, Inc	4-56	175	–	3	42.5	WI	TG	Pn	WC	Wa	DP	–	O	Ov	–	120	–
Fisher Body Div, G M C, Mansfield, O.		11-56	175	377	1 2	50 80	BW	TG	Pn	–	–	PP	13.5	O	Ov	Pr	220	–
151 TO 174 PSIG																		
New Jersey Zinc Co (of Pa.), Gloucester, N. J.	Gilbert Associates, Inc	4-58	170	575	1	100	CE	O	–	–	–	PP	–	–	–	–	190	–
[redacted]		–	170	–	1 2 1 3	20 42 40 30	BW FW BW BW	O,C BL	–	WC	GE	PP	–	O	Ov	Se	184	–
Aluminum Co of America, Lafayette, Ind.		2-58	165	–	1	60	BW	TG	Pn	–	–	PP	–	O	–	–	220	–
Ford Motor Co, Highland Park, Mich.	Drago Corp	4-58	165	Sat	4	50	K	O,G	–	–	–	PP	0.48	O	Ov,Gr	–	200	–
Anderson Prichard Oil Corp, Arkansas Div, Ken.		1-57	165	375	2	50,75	EC	O,G	–	–	–	–	–	–	–	–	–	–
Dunlop Tire & Rubber Co, Buffalo, N. Y.	Clark C Hinds	11-57	165	604	2	46.5	BW	TG	Me	–	–	PP	2.2	O	–	–	350	–
Mohawk Paper Mills, Inc, Cohoes, N. Y.		–	160	375	1	36	K	SS	Me	WC	GE	PP	0.60	O	Ov	Pr,Se	70	–
Mohawk Paper Mills, Inc, Waterford, N. Y.		–	160	375	1	35	K	SS	Me	WC	GE	PP	0.60	O	Ov	Pr,Se	70	–
Detroit Bd of Education, Poe-Edmonson plant	Snyder & McLain	10-57	160	Sat	2	10	K	UF	Me	–	–	PP	0.22	O	–	–	20	–
Westinghouse Elec Corp, Hampton, S. C.		–	160	Sat	1	65	CE	O	–	–	–	PP	4.16	O	Ov	Pr,Se	125	–
26 TO 150 PSIG																		
Textile Division, Ashton, N. Y.	Clark C Hinds	3-57	150	366	1	35	WI	UF	Me	–	–	PP	–	–	–	–	–	–
Bell Aircraft Corp, Buffalo, N. Y.	Clark C Hinds	1-57	150	366	2	35	WB	O	–	–	–	PP	–	–	–	–	–	–
Aero Products Dept, Allison Div, G M C, Indianapolis, Ind.		4-58	150	355	2 1	35 45	BW CE	O,G	–	–	–	PP	0.44	Dr	Ov	–	95	–
Industrial Division, Wisconsin Tissue Mills, Ohio, Inc, Fairmont Div, Essex, Liverpool, O.		12-56 12-56	150 150	355 365	2 1	36 100	AI CE	O,G O,G	–	–	–	PP PP	0.4 0.24	O O	Ov –	Se –	122 133	–
Detroit Edison Co, Trenton Channel plant, Trenton, Mich.	Sargent, Douglass & Baldwin	–	150	Sat	2	200	CE	SC,O	Pn	–	–	PP	0.48	As	Ov,Gr	Pr	400	–
Detroit Edison Co, Delray plant, Detroit, Mich.	H K Ferguson	10-57	150	Sat	3	167	WI	PC	Pn	–	–	PP	0.48	As	Ov,Gr	Pr	350	–
Buick Motor Div, G M C, La Grange, Ill.	Schmidt, Garden & Erickson	4-58	150	416	2	150	BW	TG	Pn	–	–	PP	0.48	Dr	Ov	Pr	300	–
Fisher Body Div, G M C, Pontiac, Mich.		–	150	365	1	120	BW	O,G	Pn	–	–	PP	0.48	O	Ov,Gr	Se	180	–
Chevrolet Div, G M C, Parma, O.	F. R. Abrams & Associates	2-57	150	–	1	35	BW	O	–	–	–	PP	–	–	–	–	–	–
Chevrolet-Saginaw Div, Gen. Motors, Rochester, N. Y.	Albert Kahn Associates	10-57	150	Sat	1	40	BW	O	Pn	–	–	PP	0.48	–	Ov	Pr,Se	135	–
Fairchild Engine & Airplane Corp, Hagerstown, Md.		1-56	150	Sat	2	30	BW	TG	Pn	–	–	–	–	–	–	–	70	–
Bay State Abrasives Prod Co, Westboro, Mass	Kenneth Warrington	–	150	360	1	25	HS	O	–	–	–	PP	–	–	–	–	25	–

AC – Allis-Chalmers Mfg Co
Af – Ames Iron Works
Ag – Askania
BL – Black Liquor
BW – Babcock & Wilcox Co
BWG – Babcock & Wilcox, Goldie McCulloch
C – Coal, Bituminous
CB – Clarage-Brooks Co
CE – Combustion Engineering, Inc.
Co – Condensing
CB – Common Bridge Co Ltd
Di – Differential
Dr – Dry Pipe
EC – Erie City Iron Works
FW – Foster Wheeler Corp
FWL – Foster Wheeler Limited
G – Gas
GE – General Electric Co
GP – Generates own power
Gr – Ground
Hy – Hydraulic
JI – Joseph Ingles Co, Ltd
K – Keeler Co
Me – Mechanical

;titutional Plants, 200 psi and Below

Company & Location	Consulting Engineers	First operation, new units	Nominal steam pressure, psig	Nominal steam temperature, F	BOILERS: Number	BOILERS: Capacity each, 1000 lb per hr	BOILERS: Manufacturer	BOILERS: Firing	BOILERS: Ash handling	TURBINES: Type	TURBINES: Manufacturer	ELECTRICAL POWER: Source	ELECTRICAL POWER: Plant distribution voltage	ELECTRICAL POWER: Transformer type	ELECTRICAL POWER: Switchgear relay protection	ELECTRICAL POWER: Neutral Grounding	Total boiler capacity on hand, new units, 1000 lb per hr	Total generator capacity on hand, including new units, 1000 kw
[illegible] Planned Central Mfg		–	25	353	1	40	BW	OS	–	–	–	PP	0.44	O	Ov	Se	120	–
[illegible]	– [illegible] & Co	57	22	354	2	30	EC	TC	Pn	–	–	PP	–	–	–	–	–	–
[illegible]	[illegible] & Co	[illegible]	150	353	2	30	EC	TC	Pn	–	–	PP	–	–	–	–	120	–
[illegible]	– [illegible] & Heater	[illegible]	2	353	2	40	CE	T	–	–	–	PP	–	–	–	–	120	–
[illegible]		5-57	125	–	2	20	CE	OS	–	–	–	PP	0.48	–	Ov Gr	–	–	–
[illegible]		[illegible]	125	354	3	30	FWL	SS	Pn	–	–	PP 3Ø	2.3	O Gr	Ov Gr	–	90	–
[illegible]		–	125	–	1	27	FW	A	–	–	–	PP	–	–	–	–	100	–
[illegible] Field, Miller Fla.																		
[illegible] Co. Ltd. Gas [illegible] Macclesfield		7-57	450	350	3	35	JI	C	–	–	–	PF	0.23	O	Ov	Pr	33	–
[illegible]	F. [illegible] Harder	[illegible]	25	344	1	35	M	C	–	–	–	PP	0.20	Dr	–	–	50	–
[illegible]	–	–	125	340	2	30	FW	O	–	–	–	PP	0.44	–	–	–	20	–
[illegible]	Watson & Starr	10-57	125	340	2	30	M	O	–	–	–	PP	0.20	O	Ov	Se	60	–
[illegible]		–	125	340	3	10.17	EC	OS	–	–	–	PP	0.46	O	–	Se	–	–
					1	27	BW											
[illegible]		1-57	125	340	2	24	BW	S-W	–	–	–	PP	0.44	O	–	–	60	–
[illegible]		[illegible]	125	320	3	35	VC	UF	Pn	–	–	PP	–	–	–	–	105	–
[illegible]		4-57	125	340	3	20	TI	TC	–	–	–	PP	–	–	–	–	60	–
[illegible]	Rockwell	[illegible]	125	–	3	30	BW	SS	Me	–	–	PP	0.44	O	Ov, Gr	Se	90	–
[illegible]	Baine & Meyers	3-57	125	340	2	34.5	CE	TC	Pn	–	–	–	–	–	–	–	34.5	–
[illegible]		–	125	340	4	20	TI	C	–	–	–	PF	–	O	Ov	Pr, Se	80	–
[illegible]	Dana, Hewins & Associates	–	125	–	1	22	WI	TC, SS	Pn	–	–	PP	0.20	O, Dr	Ov	Se	75	–
					1	35	EC											
[illegible]					1	35	EC											
[illegible]	H. G. Balcom Engineering	–	125	353	3	15	Ov	UF	Pn	–	–	PP	0.20	O, Dr	Ov, Gr	Pr, Se	60	–
[illegible]	J. A. Evans	3-56	125	–	2	12	BW	OS	–	–	–	PP	0.44	O	Ov	Pr, Se	22	–
[illegible]																		
[illegible]																		
Base Co.		–	125	–	2	20	–	OS	–	–	–	PP	–	–	–	–	40	–
[illegible]		9-57	125	350	1	25	JI	UF	Me	–	–	PP	2.3	O	Ov	–	40	–
[illegible]	F. [illegible] Oppenheime	[illegible]	125	347		19	BA	O	–	–	–	PP	–	–	–	–	44	–
[illegible]		[illegible]	[illegible]	–		15	OS	UF	–	–	–	–	–	–	–	–	–	–
[illegible]	– [illegible] Ferguson Co	[illegible]	[illegible]	Sat	2	60	BW	TG	Pn	–	–	PP	–	O	Ov	–	140	–
[illegible]		6-57	100	–	2	20	OS	O	–	–	–	–	–	–	–	–	–	–
[illegible]		4-57	100	340	1	10	BW	UF	Me	–	–	PP	0.22	O	Ov	–	–	–
[illegible]																		
[illegible]																		
[illegible] Mining Co. [illegible] Steam & [illegible]		–	100	335	3	35	FW	UF	Me	–	–	CP PP	2.3	O	Ov	Pr	66	–
[illegible] Mining Co. [illegible] Steam & [illegible]		–	100	335	3	35	FW	UF	–	–	–	CP PP	2.3	O	Ov	Pr	66	–
[illegible]	Base [illegible]	–	600	350	3	25	T	O C	–	Co	Ws	CP, PF	13.8	O	Ap	Pr, Se	64.5	–
[illegible]	[illegible]	–	500	34	2	12	BA	C	–	–	–	PF	4.16	C	–	Pr, Se	–	–
[illegible]	[illegible]	[illegible]	300	–	3	25	CE	C	–	–	–	PP	0.48	O	Ov	–	–	–
[illegible]	[illegible]	–	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	–	–	–	–	–	–	–	–	–	–
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Sargent & Lundy	[illegible]	600	825	[illegible]	[illegible]	BW	O	Pn	–	–	–	–	–	–	–	120	–
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible] Assistant Editor

[illegible] condensing
[illegible]

P – Pulverized
PS – Pulverized Spreader Stoker
Se – Secondary
Sp – Spreader Boiler Co
St – Stirling Boiler Co
Stoker

TC – Traveling Plate Stoker
T – Underfeed Stoker
UF – Underfeed Stoker
UI – Union Iron Works
Vc – Henry Vogt Machine Co

W – Wood
WS – William Bros Boiler & Mfg Co
Wx – Wickes Boiler Co
Wc – Worthington Corp
[illegible] – All types, Dr, Ov, Gr