

1950 Design Survey of Typical New

Compiled by B G A Skrotzki, Associate Editor

Compiled by B G A Skrotzky, Associate Editor					First operation, new units	Nominal pressure, psig	Nominal temperature, F	BOILERS				Superheater surface, 1000 sq ft	Furnace volume, 1000 cu ft	Heat release, 1000 Btu per cu ft per hr
Company	Location	Plant Name	Consulting Engineers	Number				Capacity, each, 1000 lb per hr	Manufacturer	Boiler, waterwall surface, 1000 sq ft				
1500 PSIG AND ABOVE														
Indiana & Michigan Electric Co.	Lawrenceburg, Ind.	Tanners Creek	Amer. Gas & Elec. Co.	1-51 ¹	2000	1050 ²	1	930	BW	31.0	95.9 ³	79.8	16.4	
Consolidated Edison Co. of N. Y.	Astoria, Queens, N.Y.	Astoria		12-52 4-53	1800	1000 ²	2	1200	BW	22.7	35.0	93.0	17.0	
Central Hudson Gas & Elec. Corp.	Danckwamter Pt., N.Y.	Danckwamter	Burns & Roe, Inc.	1-52 ¹	1650	1000 ³	1	500	CE	20.5	32.4 ³	27.2	22.5	
Jersey Central Power & Light Co.	South Amboy, N.J.	South Amboy	Burns & Roe, Inc.	12-52	1650	1000 ³	1	475	BW	15.0	37.6 ³	12.7	45.2	
Wisconsin Electric Power Co.	Glenwood Landing, N.Y.	Glenwood No. 3	Ebasco Services, Inc.	12-52	1575	1000 ³	1	795	CE	27.3	18.3 ³	102.0	10.4	
Long Island Lighting Co.	Sewaren, N.J.	Sewaren		1952	1525	1000 ³	1	750	CE	33.1		52.3	16.1	
Public Service Elec. & Gas Co.	Sewaren, N.J.	Sewaren		1951	1500	1050 ⁴	1	822	CE	18.2	59.1 ³	57.8	16.5	
1000 TO 1499 PSIG														
Toronto Edison Co.	Toledo, Ohio	Acme	G W Saarhoff	1951	1450	1000	1	650	BW	21.7	22.5	47.4	16.9	
Cincinnati Gas & Elec. Co.	New Richmond, Ohio	Clermont	Electric Advisers, Inc.	2-49	820	950	2	500	BW	39.5		49.5	16.3	
Central Illinois Publ. Service Co.	Mortonville, Ill.	Mortonville	Sargent & Lundy	3-52	1450	1000 ³	1	706	CE	36.0	70.3 ³	54.2	14.7	
Virginia Electric & Power Co.	Wheelwright, Va.	Cheslerfield	Stone & Webster	1952	1450	1000 ³	1	525	CE	29.3	43.7 ³	44.6	17.0	
Caroline Pur. & Light Co.	Lumberton, N. C.	Lumberton	Ebasco Services, Inc.	5-52	1450	1000 ³	1	750	CE	34.8	46.0	39.0	26.0	
Caroline Pur. & Light Co.	Lumberton, N. C.	Lumberton	Ebasco Services, Inc.	6-52	1450	1000 ³	1	550	CE	26.1	35.0	39.0	18.6	
Caroline Pur. & Light Co.	Goldboro, N. C.	Goldboro	Ebasco Services, Inc.	6-52	1450	1000 ³	1	550	CE	26.1	35.0	39.0	18.6	
Niagara Mohawk Pow. Corp.	Nr Albany, N. Y.	Albany	Gilbert Associates, Inc.	1952	1450	1000 ³	2	375	CE	23.8	42.0	58.0	15.8	
New York State Elec. & Gas Corp.	Johnson City, N. Y.	Johnson	Gilbert Associates, Inc.	1951	1450	1000 ³	1	560	CE	29.3	43.7 ³	44.6	17.0	
Illinois Power Co.	W. of LaSalle, Ill.	Jennings	Sargent & Lundy	10-53	1450	1000 ³	1	525	CE	28.9	35.1	9.8		
Florida Power & Light Co.	Nr Miami, Fla.	South Florida	Ebasco Services, Inc.	8-52	1450	1000 ³	1	550	CE	26.1	35.0	39.0	18.6	
Potomac Electric Power Co.	Washington, D. C.	Benning	Stone & Webster	1952	1450	1000	1	675	CE	30.7		55.4	14.4	
Duke Power Co.	Mr. Holly, N. C.	Riverbend		5-52	1300	950 ³	1	810	CE	40.5	44.3 ³	58.0	15.6	
Duke Power Co.	Mr. Holly, N. C.	Riverbend		7-52	1300	950 ³	1	810	CE	40.5	44.3 ³	58.0	15.6	
Duquesne Light Co.	Eliasm, Pa.	Eliasm		12-51	1300	950	1	860	BW	28.9	35.1	9.8		
Iowa Power & Light Co.	Des Moines, Iowa	Des Moines, No. 2	United Lt. & Ry. Serv. (Black & Veatch)	8-48 5-49 12-50	1290 400 1290	925 750 925	1 1 1	375 375 375	CE CE CE	18.0 13.5 27.1	14.5 25.2	18.4		
Texas Electric Service Co.	Fort Worth, Texas	North Main	Ebasco Services, Inc.	3-52	1250	955	1	775	CE					
Wisconsin Power & Light Co.	Sheboygan, Wis.	Edgewater	Sargent & Lundy	6-51	1250	950	1	660	BW	13.3	31.1	24.1	30.0	
Georgia Power Co.	Yates, Ga.	Yates	Southern Services, Inc.	1250	950	1	975	CE	40.9	36.2	74.0	15.4		
Columbus & S. Ohio Elec. Co.	Aurora, Minn.	Aurora	Ebasco Services, Inc.	1953	1250	950	1	650	CE	27.3		44.0	18.0	
Minnesota Power & Light Co.	Aurora, Minn.	Aurora	Ebasco Services, Inc.	3-51	1250	950	2	425	CE	15.7	16.2	31.3	17.9	
San Diego Gas & Electric Co.	San Diego, Calif.	Silver Gate	Pioneer Serv. & Engrg.	8-50	1250	950	1	575	BW	9.7	21.0	25.0	28.7	
Pennsylvania Electric Co.	Erie, Pa.	Front St.	Gilbert Associates, Inc.	7-52	1250	950	2	400	CE	19.2	25.7	25.5	19.6	
Florida Power Corp.	Oldsmar, Fla.	Boon Point	Kuljian Corp.	5-51	1250	950	1	450	BW			26.0		
Florida Power Corp.	Avon Park, Fla.	Avon Park	Kuljian Corp.	1953	1250	950	1	450	BW			26.0		
Florida Power Corp.	St. Petersburg, Fla.	Bayboro	Kuljian Corp.	7-52 12-49	1250 850	950 900	1 1	450 330	BW BW	21.9		26.0	24.3	
300 TO 999 PSIG														
Northern States Power Co.	Minneapolis, Minn.	Riverside	Pioneer Serv. & Engrg.	7-50	900	900	1	570	BW	13.5	22.9	27.5	20.0	
Northern States Power Co.	Minneapolis, Minn.	Black Dog	Pioneer Serv. & Engrg.	6-52	850	950	1	600	CE	17.4	21.0	43.3	17.6	
New York State Elec. & Gas Corp.	East Canaan, N. Y.	Rickam	Gilbert Associates, Inc.	1952	850	950	2	220	BW	24.3	3.7	12.5	22.4	
Eastern Shore Publ. Service Co.	Vienna, Md.	Vienna	United Engrs. & Constr.	4-51	850	900	1	300	BW	23.3	10.6	21.0	17.6	
Hydro-Elec. Pwr. Comm. of Ontario	Toronto, Ont.	Richard L. Meach	Stone & Webster	11-51	850	900	2	850	BW	49.1	13.3	59.6	15.5	
Hydro-Elec. Pwr. Comm. of Ontario	Windsor, Ont.	Windsor	H G Acres & Co.	9-51	850	900	2	650	BW	44.4	17.6	52.5	15.0	
Union Electric Power Co.	Venice, Ill.	Venice No. 2	Stone & Webster	10-50 12-50	850 850	900 900	1 1	900 900	BW BW	29.0 29.0	29.2 29.2	83.3 33.9	13.7	
Southern California Edison Co.	Redondo Beach, Calif.	Redondo	Stone & Webster	1949	850	900	3	400	BW	7.3	14.8	13.9	29.0	
Hartford Electric Light Co.	Hartford, Conn.	South Meadow	Stone & Webster	4-50	850	900	1	450	BW	25.7	14.4	38.4	14.7	
Public Service Co. of Colorado	Denver, Colo.	Arapahoe	Ebasco Services, Inc.	10-50 4-51	850 850	900 900	1 1	450 450	BW BW	33.1 33.1	19.8 19.8	41.9 41.9	14.3	
Alabama Power Co.	Chickasaw, Ala.	Chickasaw	Southern Services, Inc.	1952 1951	850 850	900 900	1 1	450 425	BW CE	33.1 27.2	19.8 10.5	41.9 21.2	14.3	
Mississippi Power Co.	Hattiesburg, Miss.	Eaton	Southern Services, Inc.	8-49	950	900	1	230	RS	20.2	7.9	14.8	20.2	
Mississippi Power Co.	Meridian, Miss.	Swart	Southern Services, Inc.	3-51	850	900	1	425	BW	9.9	10.4	22.2	24.3	

A - Air cooled
Ad - Arsenal Admiralty
AC - Allis-Chalmers Mfg Co
Ad - Admiralty
Adl - Admiralty, inhibited
AlB - Aluminum-bronze
AlBr - Aluminum-brass
AlAd - Antimony-Admiralty
In - Antirust
AlAd - Arsenal Admiralty

AsCu - Arsenical copper
BB - Babcock & Wilcox Co
C - Coal, bituminous
CE - Combustion Engineering-Super-heater, Inc.
CP - C. A. Parsons
CuNi - Copper-nickel
Cy - Cyclone furnace
D - Damper
DB - Dry bottom

DL - DeLaval Steam Turbine Co
EC - Erie City Iron Works
EE - English Electric
EI - Elliott Co
EV - Edge Moor Iron Works, Inc.
FB - Foster Wheeler Corp
G - Natural gas
GE - General Electric Co
H - Hydrogen cooled
Hy - Hydraulic coupling

L - Lighter
M - Motor drive
Mc - Magnetic coupling
MI - Murray Iron Works Co
Mo - Two motors per ton
MT - One motor, one turbine per ton
Mu - Muntz metal
O - Oil
P - Pulverized coal fired
Pld - Phosphorized Admiralty

Furnace bottom	Economizer surface per boiler, 1000 sq ft	Air-heater surface per boiler, 1000 sq ft	Air-heater type	F-D FANS		I-D FANS		Firing	FUEL		FEED PUMPS		TURBINES				CONDENSERS				Total boiler capacity incl new units, 1000 lb	Total generator capacity incl new units, 1000 kw
				Drive	Air-flow control	Drive	Gas-flow control		Type	Heating value, 1000 Btu per lb	Ash softening temperature, F	Drive	Flow control	Capacity, 1000 kw	Speed, rpm	Manufacturer	Backpressure, psia	No. of bleed points	Generator cooling	Surface, 1000 sq ft		
DB	16.4	251.4	Re	V	V	V	V	V	11.4	2000	2x	150	3600	GE	0.75	7	45	70	Ac	2,500	265	
DB	25.1	456.6	Re	V	V	V	V	V	11.4	2000	2x	150	3600	GE	0.75	7	70	Ac	2,500	265		
DB	13.5	83.5	Re	V	V	V	V	V	11.4	2000	2x	150	3600	GE	0.75	7	70	Ac	2,500	265		
DB	34.0	284.4	Re	V	V	V	V	V	11.4	2000	2x	150	3600	GE	0.75	7	70	Ac	2,500	265		
DB	17.9	79.8	Re	V	V	V	V	V	11.4	2000	2x	150	3600	GE	0.75	7	70	Ac	2,500	265		
DB	10.0	198.0	Re	V	V	V	V	V	12.3	2000	2x	150	3600	GE	0.75	7	45	70	Ac	2,500	265	
DB	9.3	192.0	Re	V	V	V	V	V	12.3	2000	2x	150	3600	GE	0.75	7	45	70	Ac	2,500	265	
DB	21.4	136.6	Re	V	V	V	V	V	13.0	2000	2x	150	3600	GE	0.75	7	45	70	Ac	2,500	265	
DB	14.8	149.4	Re	V	V	V	V	V	13.8	2100	2x	150	3600	GE	0.75	7	45	70	Ac	2,500	265	
DB	14.8	149.4	Re	V	V	V	V	V	13.8	2100	2x	150	3600	GE	0.75	7	45	70	Ac	2,500	265	
DB	15.4	99.3	Re	V	V	V	V	V	13.8	2100	2x	150	3600	GE	0.75	7	45	70	Ac	2,500	265	
DB	15.3	115.0	Re	V	V	V	V	V	13.8	2100	2x	150	3600	GE	0.75	7	45	70	Ac	2,500	265	
DB	14.8	149.4	Re	V	V	V	V	V	13.8	2100	2x	150	3600	GE	0.75	7	45	70	Ac	2,500	265	
DB	15.7	122.5	Re	V	V	V	V	V	15.0	2200	2x	150	3600	GE	0.75	7	45	70	Ac	2,500	265	
DB	15.8	181.6	Re	V	V	V	V	V	13.0	2100	2x	100	3600	WE	0.75	6	65	70	Ac	2,970	245	
DB	15.8	181.6	Re	V	V	V	V	V	13.0	2100	2x	100	3600	WE	0.75	6	65	70	Ac	2,970	245	
DB	22.5	175.5	Re	V	V	V	V	V	12.5	2100	3x	100	3600	WE	0.75	7	65	70	Ac	3,780	365	
DB	5.5	61.2	Re	V	V	V	V	V	9.2	1980	2x	5	3600	WE	1.0	5	35	70	Ac	1,325	35	
DB	5.6	77.5	Re	V	V	V	V	V	9.2	1980	2x	5	3600	WE	0.75	5	35	70	Ac	1,325	35	
DB	17.3	158.2	Re	V	V	V	V	V	12.3	2100	2x	60	3600	GE	1.75	4	60	70	Ac	1,550	120	
DB	25.7	297.0	Re	V	V	V	V	V	12.0	2500	2x	60	3600	AC	0.5	5	60	70	Ac	2,250	120	
DB	15.7	83.9	Re	V	V	V	V	V	11.6	2000	2x	60	3600	GE	1.75	5	60	70	Ac	2,250	120	
DB	15.6	90.0	Re	V	V	V	V	V	12.0	2200	2x	40	3600	WE	0.75	5	60	70	Ac	850	89	
DB	12.6	121.0																				

- ¹⁰ - Two-section heater
- ¹¹ - 8 ft per cu ft
- ¹² - 2 fans
- ¹³ - Extraction at 313 psig
- ¹⁴ - Also 1500 rpm
- ¹⁵ - Pressurized furnace
- ¹⁶ - H-p 3600, L-p 1800 rpm
- ¹⁷ - Used equipment to meet critical conditions
- ¹⁸ - Coke-oven gas

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Company	Location	Plant Name	Consulting Engineers	First operation, new units	Nominal pressure, psi	Nominal steam temperature, F	BOILERS					Finance volume 1000 cu ft	Heat release, 1000 Btu per cu ft per hr
							Number	Capacity, each, 1000 lb per hr	Manufacturer	Boiler, waterwall surface, 1000 sq ft	Superheater surface, 1000 sq ft		
Minnesota Power & Light Co.	Duluth, Minn.	V. L. Hubbard	Ebasco Services Inc.	5-51	350	900	1	350	EC	3.3	21.5		
Florida Power & Light Co.	Nr. Paloma, Fla.	Paloma	Ebasco Services Inc.	1951	350	900	1	350	EC				
Worcester County Elec. Co.	Worcester, Mass.	Worcester St.	United Engrs. & Const.	10-50	350	900	1	325	HW	35.1	11.2	20.0	19.5
El Paso Electric Co.	Nr. El Paso, N.M.	Rio Grande	Stone & Webster	2-51	350	900	1	335	HW	23.1	6.7	14.4	32.1
West Texas Utilities Co.	Junction, Texas	Lake Palestine	Sargent & Lundy		350	900	1	250	BW	17.7			
Otter Tail Power Co.	Ottawa, Minn.	Ottawa	J. F. Pritchard & Co.	11-50	350	900	1	160	CH	20.8	5.7	12.3	19.6
Central Illinois Light Co.	Peoria, Ill.	R. S. Wallace	Commonwealth Ass. Inc.	2-52	810	900	1	600	HS	39.9	26.7	57.2	14.5
	Essexville, Mich.	J. C. Hedrick	Commonwealth Ass. Inc.	11-49	800	875	2	600	HW	22.2	15.6	25.6	19.0
Consumers Power Co.	Comstock, Mich.	B. E. Morrow	Commonwealth Ass. Inc.	8-49	800	875	1	600	HW	22.2	15.6	25.6	19.0
	Mustregon, Mich.	B. C. Cobb	Commonwealth Ass. Inc.	8-50	350	900	1	600	HW	18.4	16.4	40.6	22.4
Arkansas Power & Light Co.	Nr. Hot Springs, Ark.	Lake Catherine	Ebasco Services Inc.	3-50	350	900	2	450	CH/HS	23.8	7.5	21.0	29.3
	Tecumseh, Kan.	Tecumseh	Black & Veatch	3-49	850	900	1	280	CH/HS				
				7-51	850	900	1	250	CH/HS				
				4-50	850	900	3	270	CH/HS				
The Kansas Power & Light Co.	Hutchinson, Kan.	Hutchinson, No. 2	Black & Veatch	7-51	350	900							
	Lawrence, Kan.	Lawrence	Black & Veatch	1-52	350	900	1	350	CE	19.2		20.2	21.2
600 TO 799 PSIG													
Iowa Public Service Co.	Sioux City, Iowa	Kirk		3-51	700	750	1	90	BW			4.1	29.6
	Pueblo, Colo.	Pueblo	Pioneer Serv. & Engrg.	6-49	650	900	1	185	BW	16.5	7.5	14.4	17.7
Southern Colorado Power Co.	Rocky Ford, Colo.	Rocky Ford	Stearns-Roger Mfg. Co.	4-51	600	350	1	100	BW	10.3	5.0	5.4	23.8
Maine Public Service Co.	Caribou, Maine	Caribou	Stone & Webster	11-50	600	325	1	90	CE	10.3	2.3	5.5	22.6
Western Colorado Power Co.	Montrose, Colo.	Montrose		2-51	600	325	1	70	HS	10.6		4.5	23.0
Mt. Carmel Public Utility Co.	Mt. Carmel, Ill.			12-51	600	325	1	80	CE	9.8		4.5	24.9
UNDER 600 PSIG													
Southern Power Co. Service Co.	Sunray, Texas	Moore County	Stearns-Roger Mfg. Co.	10-50	450	750	1	225	CE	20.7		10.0	29.0
Saskatchewan Power Corp.	Estevan, Sask.	Estevan	R. E. Harvengt	2-51	415	750	2	100	CE	10.6		4.7	37.0
Otter Tail Power Co.	Crookston, Minn.	Crookston	J. F. Pritchard & Co.	12-49	400	825	1	75	HS	11.4	1.5	4.8	22.7
Montana-Dakota Utilities Co.	Moorehead, S.D.	Moorehead	Stearns-Roger Mfg. Co.	11-50	400	750	2	30	BW	7.2		2.7	28.2
Iowa Public Service	Carroll, Iowa	Carroll	Black & Veatch	10-51	400	750	2	60	HS	8.8	1.5	4.0	19.6
Central Kansas Power Co.	Calby, Kansas	Calby		6-51	400	750	1	75	BW	8.9		3.1	31.0
Northern States Power Co.	Fargo, N.D.	Fargo	Pioneer Serv. & Engrg.	9-49	400	750	1	75	VO	10.5	1.3	4.2	25.0
Iowa Southern Utilities Co.	Centerville, Iowa	Centerville	Federal Engrg. Co.	2-49	200	500	1	100					
	Ottumwa, Iowa	Ottumwa	Federal Engrg. Co.	10-49	200	550	1	100					
Pacific Power & Light Co.	Yakima, Wash.	Stm Mfg. Plant	J. Donald Kroecker	10-50	150	540	2	18	BW	2.0			
MUNICIPAL AND COOPERATIVE PLANTS													
Bozard St. Public Utilities	Kansas City, Kansas	Quindaro No. 2	Burns & McDonnell	5-51	875	910	1	300	BW	22.9	9.9	20.0	21.4
Central Power Electric Coop. Inc.	Valdaira, N.D.	M. J. Heat	Vern E. Alden Co.	9-51	350	900	2	230	CE	22.2	6.6	17.5	19.0
Dairymond Power Cooperative	Alma, Wis.	Alma	Vern E. Alden Co.	12-50	350	900	1	230	HS	22.3	7.3	1.5	21.7
	Cassville, Wis.	E. J. Straneman	Vern E. Alden Co.	12-50	350	900	1	230	HS	22.3	7.3	1.5	21.7
City of Muscatine	Muscatine, Iowa		Stanley Engrg. Co.	11-49	650	325	1	160	BW	19.2	2.1	5.3	32.0
Corn Belt Power Cooperative	Pumbolat, Iowa	Pumbolat	Stanley Engrg. Co.	3-50	610	325	2	70	EW	10.3	2.3	5.3	21.0
Southern Western Federated Pwr. Coop.	Creston, Iowa	Creston	Stanley Engrg. Co.	2-51	600	325	2	100		2.3	7.0	4.7	27.0
Brazos R. v. Transmission Elec. Coop.	Belton, Texas	Boo Page	Laramore & Douglass	3-50	600	325	1	115		17.1	3.9		
City of Grand Rapids	St. Marks, Fla.	St. Marks	Rennolds, Smith & Mills	10-51	600	325	3	35	BW	8.2		2.8	
City of Lafayette	Lafayette, La.		Barnard & Burk	6-51	600	325	2	60	BW	6.5	1.7	2.1	25.8
Minnesota Power Cooperative	Grand Forks, N.D.	Franklin P. Wood	Ellerbe & Co.	12-49	600	315	12	135	HS	17.5		7.8	25.3
Dept. of Municipal Service	Avondale, Mich.		Emery, Markest, Emery	5-51	600	300	1	140	BW	9.5		4.0	25.0
Water, Gas & Electric Dept.	Sanville, Va.	Sanville	Chas. T. Main, Inc.	6-49	600	750	1	35	HS	11.0	0.5	5.3	29.2
Manitowac Public Utilities	Manitowac, Wis.			3-51	450	750	1	150	HS	15.3		8.4	25.0
Greenville Utilities Commission	Greenville, N.C.	Greenville	M. C. Olsen		450	750	3	30	CE				
Borough of Chambersburg	Chambersburg, Pa.		A. C. Reed Assoc.	12-50	450	750	2	30	EW				
City Water & Light Dept.	Ottawa, Kansas		Black & Veatch		450	750	2	50	HS	7.5			
City of Jackson	Jackson, Minn.		Priest & Smith	2-50	450	750	1	45	HS	7.2		2.7	
Borough of Elm	Elm, Pa.			1-50	450	750	1	18	LI			1.6	25.0
Department of Utilities	Fremont, Nebraska		Lutz & May	10-50	400	325	1	90	VI			1.0	30.0
Orville Municipal Utilities	Orville, Ohio	N. V. St.	H. R. Madlow	9-49	400	750	1	50	HS				
City of Colorado Springs	Colorado Springs, Colo.		Lutz & May	12-49	150	400	750	1		14.7	2.3		25.4
Water & Light Department	Thomasville, Ga.			1951	400	750	1	58	BW	6.3			27.7
City of Cedar Falls	Cedar Falls, Iowa		Stanley Engrg. Co.	9-50	400	750	1	72	VI	3.3	1.6	3.0	25.0
Franklin Light & Power Plant	Franklin, Ind.		Emery, Markest, Emery	10-49	375	720	1	110	BW	12.5		5.0	
City of Newburn	Newburn, Sask.			5-49	300	720	1	25	BW	2.7		1.2	
City of Medicine Hat	Medicine Hat, Alberta			1-49	270	550	1	70	BW	3.6	0.5	1.4	23.8

1 - Air cooled
11d - Arsenical Admiralty
1C - Allis-Chalmers Mfg Co
4d - Admiralty
1dl - Admiralty, inhibited
11B - Aluminum-bronze
11Br - Aluminum-brass
11Ad - Antimony-Admiralty
1A - Anthracite
11d - Arsenical Admiralty

11C - Arsenical copper
BT - Babcock & Wilcox Co
C - Coal, bituminous
CE - Combustion Engineering-Superheater, Inc.
CP - C. A. Parsons
Cu - Copper-nickel
Cy - Cycloane furnace
D - Damper
DS - Dry bottom

DL - DeLaval Steam Turbine Co
EC - Erie City Iron Works
EE - English Electric
EL - Elliott Co
EM - Edge Moor Iron Works, Inc.
F - Foster Wheeler Corp.
G - Natural gas
GE - General Electric Co
H - Hydrogen cooled
Hy - Hydraulic coupling

L - Lignite
M - Motor drive
Ma - Magnetic coupling
MI - Murray Iron Works Co
Mo - Two motors per ton
MT - One motor, one turbine per ton
Mu - Muntz metal
C - Oil
P - Pulverized coal fired
P1d - Phosphorized Admiralty

STEAM CENTRAL-STATION INSTALLATIONS

Furnace bottom	Economizer surface per boiler, 1000 sq ft	Air-heater surface per boiler, 1000 sq ft	Air-heater type	F-D FANS		I-D FANS		Filing	Type	FUEL		FEED PUMPS		TURBINES				CONDENSERS			Total boiler capacity incl. new units, 1000 lb	Total generator capacity incl. new units, 1000 kw		
				Drive	Air-flow control	Drive	Gas-flow control			Heating value, 1000 Btu per lb	Ash-heating temperature, F	Drive	Flow control	Capacity, 1000 kw	Speed, rpm	Manufacturer	Backpressure, psig	No. of bleed points	Generator cooling	Surface, 1000 sq ft			No. water passes	Tube material
DB	51.6			M	V	M	V	P	C	13.4	2000	2M, 1T		30*	3600	WE	0.5	4	X	20.0	1	Ad	1325	120
DB	0	61.7		M	V	M	V	P	C	18.3	2500	3M		30*	3600	GM	1.25	5	X	30.0	1	Ad	350	30
DB	0	61.7		M	V	M	V	P	C	12.6	2500	2M		30*	3600	GM	0.75	5	X	30.0	1	Ad	1120	75
DB	34.1			M	V	M	V	P	C	11.5	1063	2M		30*	3600	GE	0.75	4	X	19.0	1	Ad	1074	107
DB	34.1			M	V	M	V	P	C	10.3	1063	1M, 1T		20*	3600	GE	0.75	4	X	18.0	1	Ad	586	35
DB	6.1	17.2		M	V	M	V	P	C	6.6	2000	2M, 1T		15	3600	GE	1.0	4	X	16.0	1	Ad	160	15
DB	10.5	127.5		M	V	M	V	P	C	12.5	1950	2M		60*	3600	WM	0.5	4	X	45.0	2	Ad	2440	210
DB	34.6	60.1		M	V	M	V	P	C	12.5	2300	2M		60*	3600	WM	0.75	4	X	42.5	2	Ad	3100	290
DB	20.4	111.0		M	V	M	V	P	C	12.5	2300	1M		60*	3600	WM	0.75	4	X	42.5	2	Ad	1950	180
DB	0	66.6		M	V	M	V	P	C	12.5	2300	1M		60*	3600	WM	0.75	5	H	42.5	2	Ad	1800	180
DB	0	0		M	V	M	V	P	C	10.5	1050	2M, 1T		40*	3600	AC	0.75	4	H	27.5	1	Ad	900	88
DB	0	0		M	V	M	V	P	C	11.5	1900	1M, 1T		30*	3600	WE	0.75	4	H	27.5	2	AsCu	950	82
DB	0	0		M	V	M	V	P	C	11.5	1900	1M		30*	3600	WE	0.75	4	H	27.5	2	AsCu	1300	82
DB	0	0		M	V	M	V	P	C	10.0	1000	2M, 1T		20*	3600	GE	0.75	4	H	27.5	2	AsCu	810	40
DB	0	0		M	V	M	V	P	C	10.0	1000	2M, 1T		20*	3600	GE	0.75	4	H	27.5	2	AsCu	810	40
DB	0	0		M	V	M	V	P	C	10.0	1000	2M, 1T		20*	3600	GE	0.75	4	H	27.5	2	AsCu	810	40
DB	0	0		M	V	M	V	P	C	10.0	1000	2M, 1T		20*	3600	GE	0.75	4	H	27.5	2	AsCu	810	40
DB	0	0		M	V	M	V	P	C	10.0	1000	2M, 1T		20*	3600	GE	0.75	4	H	27.5	2	AsCu	810	40
DB	0	0		M	V	M	V	P	C	10.0	1000	2M, 1T		20*	3600	GE	0.75	4	H	27.5	2	AsCu	810	40
DB	0	0		M	V	M	V	P	C	10.0	1000	2M, 1T		20*	3600	GE	0.75	4	H	27.5	2	AsCu	810	40
DB	0	0		M	V	M	V	P	C	10.0	1000	2M, 1T		20*	3600	GE	0.75	4	H	27.5	2	AsCu	810	40
DB	0	0		M	V	M	V	P	C	10.0	1000	2M, 1T		20*	3600	GE	0.75	4	H	27.5	2	AsCu	810	40
DB	0	0		M	V	M	V	P	C	10.0	1000	2M, 1T		20*	3600	GE	0.75	4	H	27.5	2	AsCu	810	40
DB	0	0		M	V	M	V	P	C	10.0	1000	2M, 1T		20*	3600	GE	0.75	4	H	27.5	2	AsCu	810	40
DB	0	0		M	V	M	V	P	C	10.0	1000	2M, 1T		20*	3600	GE	0.75	4	H	27.5	2	AsCu	810	40
DB	0	0		M	V	M	V	P	C	10.0	1000	2M, 1T		20*	3600	GE	0.75	4	H	27.5	2	AsCu	810	40
DB	0	0		M	V	M	V	P	C	10.0	1000	2M, 1T		20*	3600	GE	0.75	4	H	27.5	2	AsCu	810	40
DB	0	0		M	V	M	V	P	C	10.0	1000	2M, 1T		20*	3600	GE	0.75	4	H	27.5	2	AsCu	810	40
DB	0	0		M	V	M	V	P	C	10.0	1000	2M, 1T		20*	3600	GE	0.75	4	H	27.5	2	AsCu	810	40
DB	0	0		M	V	M	V	P	C	10.0	1000	2M, 1T		20*	3600	GE	0.75	4	H	27.5	2	AsCu	810	40
DB	0	0		M	V	M	V	P	C	10.0	1000	2M, 1T		20*	3600	GE	0.75	4	H	27.5	2	AsCu	810	40
DB	0	0		M	V	M	V	P	C	10.0	1000	2M, 1T		20*	3600	GE	0.75	4	H	27.5	2	AsCu	810	40
DB	0	0		M	V	M	V	P	C	10.0	1000	2M, 1T		20*	3600	GE	0.75	4	H	27.5	2	AsCu	810	40
DB	0	0		M	V	M	V	P	C	10.0	1000	2M, 1T		20*	3600	GE	0.75	4	H	27.5	2	AsCu	810	40
DB	0	0		M	V	M	V	P	C	10.0	1000	2M, 1T		20*	3600	GE	0.75	4	H	27.5	2	AsCu	810	40
DB	0	0		M	V	M	V	P	C	10.0	1000	2M, 1T		20*	3600	GE	0.75	4	H	27.5	2	AsCu	810	40
DB	0	0		M	V	M	V	P	C	10.0	1000	2M, 1T		20*	3600	GE	0.75	4	H	27.5	2	AsCu	810	40
DB	0	0		M	V	M	V	P	C	10.0	1000	2M, 1T		20*	3600	GE	0.75	4	H	27.5	2	AsCu	810	40
DB	0	0		M	V	M	V	P	C	10.0	1000	2M, 1T		20*	3600	GE	0.75	4	H	27.5	2	AsCu	810	40
DB	0	0		M	V	M	V	P	C	10.0	1000	2M, 1T		20*	3600	GE	0.75	4	H	27.5	2	AsCu	810	40
DB	0	0		M	V	M	V	P	C	10.0	1000	2M, 1T		20*	3600	GE	0.75	4	H	27.5	2	AsCu	810	40
DB	0	0		M	V	M	V	P	C	10.0	1000	2M, 1T		20*	3600	GE	0.75	4	H	27.5	2	AsCu	810	40
DB	0	0		M	V	M	V	P	C	10.0	1000	2M, 1T		20*	3600	GE	0.75	4	H	27.5	2	AsCu	810	40
DB	0	0		M	V	M	V	P	C	10.0	1000	2M, 1T		20*	3600	GE	0.75	4	H	27.5	2	AsCu	810	40
DB	0	0		M	V	M	V	P	C	10.0	1000	2M, 1T		20*	3600	GE	0.75	4	H	27.5	2	AsCu	810	40
DB	0	0		M	V	M	V	P	C	10.0	1000	2M, 1T		20*	3600	GE	0.75	4	H	27.5	2	AsCu	810	40
DB	0	0		M	V	M	V	P	C	10.0	1000	2M, 1T		20*	3600	GE	0.75	4	H	27.5	2	AsCu	810	40
DB	0	0		M	V	M	V	P	C	10.0	1000	2M, 1T		20*	3600	GE	0.75	4	H	27.5	2	AsCu	810	40
DB	0	0		M	V	M	V	P	C	10.0	1000	2M, 1T		20*	3600	GE	0.75	4	H	27.5	2	AsCu	810	40
DB	0	0		M	V	M	V	P	C	10.0	1000	2M, 1T		20*	3600	GE	0.75	4	H	27.5	2	AsCu	810	40
DB	0	0		M	V	M	V	P	C	10.0	1000	2M, 1T		20*	3600	GE	0.75	4	H	27.5	2	AsCu	810	40
DB	0	0		M	V	M	V	P	C	10.0	1000	2M, 1T		20*	3600	GE	0.75	4	H	27.5	2	AsCu	810	40
DB	0	0		M	V	M	V	P	C	10.0	1000	2M, 1T		20*	3600	GE	0.75	4	H	27.5	2	AsCu	810	40
DB	0	0		M	V	M	V	P	C	10.0	1000	2M, 1T		20*	3600	GE	0.75	4	H	27.5	2	AsCu	810	40
DB	0	0		M	V	M	V	P	C	10.0	1000	2M, 1T		20*	3600	GE	0.75	4	H	27.5	2	AsCu	810	40
DB	0	0		M	V	M	V	P	C	10.0	1000	2M, 1T		20*	3600	GE	0.75	4	H	27.5	2	AsCu	810	40
DB	0	0		M	V	M	V	P	C	10.0	1000	2M, 1T		20*	3600	GE	0.75	4	H	27.5	2	AsCu	810	40
DB	0	0		M	V	M	V	P	C	10.0	1000	2M, 1T		20*	3600	GE	0.75	4	H	27.5	2	AsCu	810	40
DB	0	0		M	V	M	V	P	C	10.0	1000	2M, 1T		20*	3600	GE	0.75	4	H	27.5	2	AsCu	810	40
DB	0	0		M	V	M	V	P	C	10.0	1000	2M, 1T		20*	3600	GE	0.75	4	H	27.5	2	AsCu	810	40
DB	0	0		M	V	M	V	P	C	10.0	1000	2M, 1T		20*	3600	GE	0.75	4	H	27.5	2	AsCu	810	40
DB	0	0		M	V	M	V	P	C	10.0	1000	2M, 1T		20*	3600	GE	0.75	4	H	27.5	2	AsCu	810	

1950 Design Survey of Typical Industrial and

Compiled by J. C. McCabe, Associate Editor

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Company	Location	Consulting Engineers	First operation, new units	Nominal pressure, psi	Nominal steam temperature, F	BOILERS				Furnace volume, 1000 cu ft	Heat release, 1000 Btu per cu ft per hr	Furnace bottom	Economizer surface, per boiler, 1000 sq ft
						Number	Capacity, each, 1000 lb per hr	Manufactures	Heating surface, 1000 sq ft				
600 PSI AND ABOVE													
Carnegie-Illinois Steel Corp.	Chicago, Ill.	United Engrs & Constr Corp.	1951	1025	900	1	650	RS	75.1	49.0	17.5	DB	12.0
Imperial Irrigation Distr.	El Centro, Calif.	Gibbs & Hill	1952	760	900	1	300	BW	28.4	11.1	19.8	DB	11.0
Macon Kraft Co.	Macon, Ga.		1949	350	750	2	150	BW					
Wack Molding Co.	Arlington, Va.		1949	800	518	1	12	BW	2.0				
Gulf Oil Corp.	Toledo, Ohio		1948	725	605	2	70	BW	7.4				
Pacific Mills, Ltd.	Ocean Falls, B. C.		1948	725	750	1	175	BWG	15.6	7.0	19.7	DB	3
Fraser Paper, Ltd.	Wadsworth, W. Va.	Stone & Webster	5-50	700	750	1	150	BWG		9.3	19.0		
American Boxboard Co.	Filer City, Mich.	Carroll, Bechtel & Langtry	5-50	675	750	1	125	BW	11.8			DB	
American Cyangnia Co.	Pearl River, N. Y.		1950	675	750	1	85	BW	14.1	5.3	22.7		
Central Sova Co.	Decatur, Indiana	Sargent & Lundy	1950	675	760	1	80	BW	7.9	3.4	27.2		5.2
National Container Corp.	Intargon, Mich.	Helmick, Edesbury & Lutz	1949	575	700	1	47	CE	13.9				1.7
Carnegie-Illinois Steel Corp.	Gary, Indiana	United Engrs & Constr Corp.	9-49	650	825	3	250	RS	79.6	18.0	19.9	DB	4.7
Continental Oil Co.	Ponca City, Okla.		1-50	650	750	1	90	Vo	9.8	4.8	27.9		0
Fibreboard Products, Inc.	East Antioch, Calif.	Leland S. Rosener	1949	350	750	2	160	BW	15.2			DB	
H J Heinz Co.	Pittsburgh, Pa.		1950	650	730	2	70	CE	7.8	3.0			4.6
Thilman Pulp & Paper Co.	Kaukaung, Wis.	Pfister & Schultze	1949	650	700	1	90	BW	3.3	4.5	24.0		2.2
Carnegie-Illinois Steel Corp.	Rankin, Pa.		4-50	525	750	1	300	RS	119.3	23.0	19.9	DB	0
Jefferson Chemical Co.	Port Neches, Texas		1949	625	760	3	85	FW	12.1	4.8	23.7	DB	0
Riegel Paper Co.	Acme, N. C.	J E Sirrine	1951	625	725	1	52	CE					
Tennessee Eastman Corp.	Kingsport, Tenn.		1949	620	710	3	150	BW	18.9	8.1	26.4		7.3
American Boxboard Co.	Filer City, Mich.	Carroll, Bechtel & Langtry	5-50	615	750	1	125	BW	11.8		21.5	DB	
Meatara Corp.	Meatara, Oregon		1950	600	680	1	100	RS	18.5	9.7	18.2		3
West Virginia Pulp & Paper	Charleston, S. C.		1950	600	700	1	325	FW	26.6	17.5	26.0	DB	22.8
West Virginia Pulp & Paper	Lux, Md.		1949	600	700	1	103	BW	22.5				5.2
West Virginia Pulp & Paper	Lux, Md.		1950	600	700	1	103	BW	22.5	15.2		ST	5.2
300 - 599 PSI													
Minneapolis Street Rwy.	Minneapolis, Minn.		1949	525	850	1	160	BW	17.7	9.1	26.2		3.4
Dow Chemical Co.	Freeport, Texas		1-51	500	750	1	250	RS	24.6	11.3	34.2	DB	0
Huason Pulp & Paper Corp.	Palatka, Fla.	J E Sirrine	1951	500	750	1	60	BW	3.4	2.5		DB	
New York & Pennsylvania Co.	Johnsonburg, Pa.		1950	500	Set	1	85	CE	3.4	2.5		DB	
Pabst Brewing Co.	Milwaukee, Wis.	Stone & Webster	1-50	500	575	3	68	EM	12.7	3.2	26.9	DB	3.9
St. Joseph Lead Co.	Josephtown, Pa.		1950	500	700	3	8	BW					
Tulsa Water Works	Tulsa, Okla.	G F Phillips & Assoc.	4-50	500	750	1	34	UI	4.7		28.0		0
W T Carter & Brother, Lumber	Camden, Texas	H E Boyer, Jr.	1950	475	580	2	35	Vo	5.4		18.7		
J I Case Co.	Pocine, Ill.		1949	475	750	1	100	MI	7.9		35.5		2.7
Crossett Paper Mills	Crossett, Ark.		1949	475	700	1	89	CE	22.1			ST	2.8
Florida State Hospital	Chattahoochee, Fla.	Reynolds, Smith & Mills	3-50	475	575	1	60	BW					
International Paper Co.	Corinth, N. Y.		1950	475	700	1	80	CE	11.3	3.1	33.3	DB	4.9
Miller Brewing Co.	Milwaukee, Wis.	A G Behling	1950	475	700	2	40	MI	7.0	2.7	22.0	DB	
Standard Oil & Gas Co.	Andrews County, Texas		1949	475	712	3	40	BW					
Sumnerland Paper Co.	Kalamazoo, Mich.		1950	475	650	1	100	MI	11.5	5.3	24.6	DB	6.4
Lee Rubber & Tire Co.	Conshohocken, Pa.		1950	460	700								
Harvard Brewing Co.	Lowell, Mass.	C T Wain, Inc.	1949	450	353	2	21	BW	2.8				
Huason Pulp & Paper Corp.	Palatka, Fla.	J E Sirrine	1951	450	725	1	113	BW	13.7			ST	4.9
International Paper Co.	Georgetown, S. C.		1949	450	675	1	200	BW	17.6	13.0	20.0		2.9
Magnolia Petroleum Co.	Beaumont, Texas		9-50	450	675	1	175	CE	15.9	8.4	27.3	DB	
Magnolia Petroleum Co.	Rush Springs, Okla.		1950	450	690	2	25	Vo					
John Morrell Co.	Sioas Falls, S. D.	Helmick, Edesbury & Lutz	1950	450	700	1	100	BW	10.4	9.2			
National Container Corp.	Jacksonville, Fla.		4-50	450	700	1	75	CE	20.0				2.3
Niagara Alkali Co.	Niagara Falls, N. Y.		1950	450	421	1	65	BW	6.3				
Quaker State Oil Refining	Emmerton, Pa.		1950	450	525	1	60	BW		2.5		DB	
Riegel Textile Corp.	Ware Shoals, S. C.		1950	450	535	1	120	RS	16.8	7.8		DB	0
Sareckies Sugar Co.	Sareckies, Calif.		7-50	450	600	1	175	CE	15.3	7.3	30.0		
Celina Searic Acid Co.	Celina, Ohio		1948	425	Set	1	12	BW					
Fletcher Paper Co.	Alpena, Mich.	Cummins & Barnard	425	700	1	45	MI	6.2	2.4	26.7	DB	3.6	
Congoleum-Nairn Inc.	Keary, N. J.		1949	420	710	1	60	BW	7.0	2.7	20.0	DB	
American Coating Mills	Vadlerown, Ohio	B M Baxter	1949	400	600	1	55	BW	6.1				3.8
Dept of Public Works	Chicago, Ill.		1952	400	648	4	45	EW	7.5	2.3			0
Liberty Powder Co.	Wt. Braddock, Pa.		1949	400	371	2	17	BW	2.8			DB	0
Lone Star Steel Co.	East Texas, Texas			400	750	1	100	RS				DB	
				400	750	3	100	BW	50.0	25.0		DB	

f - Air-cooled
 Ad - Arsenical Admiralty
 AC - Allis-Chalmers Mfg Co
 AsCs - Arsenical copper
 Ad - Admiralty
 At - Ames Iron Works
 An - Anthracite
 Bi - Bigelow Co
 BL - Black liquor
 Br - Brass

BF - Babcock & Wilcox Co
 BFC - Babcock & Wilcox, Goldie - McCullough
 C - Coal, bituminous
 CB - Cleaver-Brooks Co
 CE - Combustion-Engineering-Super-heater, Inc.
 CuNi - Copper-nickel
 CT - Canadian Vickers, Ltd
 D - Damper

DB - Dry bottom
 DL - DeLaval Steam Turbine Co
 Ds - Duplex pump
 E - Electrostatic
 EC - Erie City Iron Wks
 EI - Elliott Co
 EW - Edge Moor Iron Wks, Inc
 FW - Foster Wheeler Corp
 G - Gas
 GE - General Electric Co

H - Hydrogen cooled
 HF - Haged Fuel
 Hy - Hydraulic coupling
 Ke - E Keeler Co
 V - Motor drive
 Va - Magnetic coupling
 Me - Mechanical
 MT - One motor, one turbine per fan
 Mu - Muntz metal
 O - Oil

1000

- Oe - Maschinen Fabrik Oerlikon
- P - Pulverized-fuel firing
- Pl - Plate
- R - Regulator
- RS - Riley Stoker Corp
- S - Speed control
- SE - Skinner Engine Co
- SS - Screenshot stoker
- ST - Steam Tap

- T - Turbine drive
- T_c - Terry Steam Turbine Co
- T_u - Tubular
- UF - Underfeed stoker
- U₁ - Union Iron Works
- V - Vane control
- V_o - Henry Vogt Machine Co
- W - Wood
- WH - Waste heat

28 ~ Wm. Bros. Boiler & Mfg Co
 30 ~ Westinghouse Electric Corp
 31 ~ Wickes Boiler Co
 32 ~ Worthington Pump & Machy Corp,
 Moore Steam Turbine Division
 33 ~ Wood waste
 34 ~ Blast-furnace gas
 35 ~ Fuel oil
 36 ~ Flat gate
 37 ~ Steam-heated

- 5 - Gas-air heater
- 6 - Blast-furnace, natural and coke-oven
gasses
- 7 - Bagasse
- 8 - Pitch
- 9 - Steam engines
- 10 - Coke breeze
- 11 - From zinc-concentrator roasting

(150) - Stoker grate area, sq ft

1950 Design Survey of Typical Industrial and

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Company	Location	Consulting Engineers	First operation, new units	Rated pressure, psi	Nominal steam temperature, F	Number	Capacity, each, 1000 lb per hr	Manufacturer	Heating surface, 1000 sq ft	Furnace volume, 1000 cu ft	Heat release, 1000 Btu per cu ft per hr	Furnace bottom	Economizer surface, per boiler, 1000 sq ft
Sonoco Products Co.	Hartsville, S. C.		400										
Canadian National Rwy.	Montreal, Que.		1949	280	493	1	15	FW	2.4	3.9	27.3	DB	
						1	90	FW	10.6	5.8	19.0	DB	
Carthage Fabrics Corp.	Carthage, N. C.		1950	375	410	1	3.6	CE	0.25				
Pure Oil Co.	Marland, Wyo.		11-49	375	30	3	24	EC	3.5	1.0	22.5	DB	
Southwest Gas Producing Co.	Dubboch, La.		1949	260	536	3	60	Vo					
Marinette Paper Co.	Marinette, Wis.		1950	350	500	1	50	BW	7.9	2.6			
Sarco Co.	Bethlehem, Pa.		1949	350	500	1	3.5	IB	0.4	2.1	36.0	DB	
Gypsum Lime & Alabastine Ltd.	Winnipeg, Man.	W M Bird	2-50	325	400	1	30	FW	4.6	1.5	26.2		
American Seating Co.	Grand Rapids, Mich.	Hamilton, Weaver & Ward	1950	300	600	1	60	Wi	8.1	1.0	25.4		
Connecticut State Hospital	Middletown, Conn.	Fletcher Thompson	5-51	300	455	4	40	BI	6.1	1.8	29.0		
Cooperative Refinery Assn.	Coftayville, Kan.		1950	300	464	1	50	EC	6.9	2.4	28.0	DB	
Great Falls Bleachery & Dye Wks.	Somersworth, N. H.		4-50	300		3	25	Wi	2.5	0.6	55.7		
Manitoba State Training	Manitoba, Can.	Hurley & Capocerato	11-50	300	456	3	30	BI	4.3	1.4	18.0		
Shell Oil Co.	Elk City, Okla.		1950	300	406	3	18.5	Vo	3.2	1.1	22.5		
J P Stevens & Co.	Cheraw, S. C.	J E Sirrine	1950	300	500	1	80	CE	9.4				
Texas Gulf Sulphur Co.	Marland, Wyo.		1950	300	403	2	50	BW	6.0				
						2	40	FW	3.8				
Torrance State Hospital	Torrance, Pa.	H F Lent	1950	300	266	1	45	BW	6.9	1.9	24.5		
United States Rubber Co.	Los Angeles, Calif.		8-50	300	500	1	70	BW	7.4	2.2	28.0		
Univ of Oklahoma	Oklahoma City, Okla.	Collins	1949	300		2	10	AI					
Walker Bros	Conshohocken, Pa.		1950	300	500	1	14	FW	1.7				
250 TO 299 PSI													
Bethlehem Steel Co.	Steelton, Pa.		4-50	275	500	1	150	EC	21.1	10.5	14.8	DB	
California Co.	Mica, La.		1949	275	406	2	33	BW					
Marathon State Hospital	Macedonia, Ohio	Beiswinger & Macn	5-50	275	401	2	30	BW					
Indiana Form Bureau Refinery	Mr Vernon, Ind.		1950	275	406	1	22	Vo	3.2				
Liquid Carbonic Co.	Cincinnati, Ohio		6-50	275	475	1	17	EC	3.1	1.0	22.5	DB	
Studebaker Corp.	Saginaw, Ind.		1948	275	520	1	210	FW	22.3	9.7	29.1		
Texas State College for Women	Denton, Texas		1-49	275	509	2	32	Vo	5.6				
Univ of Connecticut	Storrs, Conn.	Hubbard, Lawless & Blakely	1950	275	500	2	35	BI	5.0	1.9	24.0		
Liquid Carbonic Co.	Indianapolis, Ind.		1950	270	480	1	15	CE					
Hughes Tool Co.	Houston, Texas	Strauss, Frank Co.	1950	255	474	2	21	BW	2.9				
American Can Co.	Milwaukee, Wis.		6-50	250	500	2	50	EC	6.9	2.3	30.0	DB	
American Hide & Felt Co.	Newark, N. J.	Geo London	1950	250	500	1	45	CE	6.2	1.8	20.7	DB	
Armco Steel Co.	Ashland, Ky.		1950	250	488	3	70	BW	10.0		25.0		
Atlanta Water Wks.	Atlanta, Ga.		1949	250	538	1	44	BW					
Aurora Gasoline	Detroit, Mich.		10-50	250	500	1	35	BI	5.0	1.8	26.0		
P Ballantine & Sons	Newark, N. J.		1949	250	366	1	60	BW	7.3				
Barton Salt Co.	Hutchinson, Kan.		1951	250	500	1	39	BW	6.2				
Beaver Wood Fibre Co. Ltd.	Thorold, Ont.		1-51	250	500	2	65	FW					
Burnhardt Brewery	Akron, Ohio	R W Barger	1949	250		2	27	Vo	4.4	1.5		DB	
Certain-Teed Products Corp.	York, Pa.		1948	250	500	1	50	EC					
Consumers Heating Co.	Klamath Falls, Ore.		1-50	250	500	1	25	RS	3.6	1.9	19.7	DB	
Creston Print Wks.	Fletcher, N. C.	J E Sirrine	1-50	250	500	50	BW	6.8	2.3				
Du Quoin Packing Co.	Du Quoin, Ill.	Ferris & Hamig	10-49	250	500	1	17	EC	3.0	0.7	25.0	DB	
Farmers Union Central Exch.	Laurel, Mont.		1950	250	500	1	75	Vo	10.1	4.1	21.3		
Field Packing Co.	Owensboro, Ky.	A M Kinney	1949	250	416	1	27	CE					
Ford Motor Co.	Hamburg, N. Y.	Fairbrother & Michls	1950	250	500	3	40	CE	6.1	1.7	30.9	DB	
Ganic Mfg Co.	Gonic, N. H.	Harrison G White	1948	250	500	1	30	BW	4.4				
Great Northern RR.	Grand Forks, N. D.		5-50	250	381	1	29	WB	4.0	1.1	35		
Hackensack Water Co.	Oradell, N. J.		1951	250	507	2	30	CE	5.8	1.7	24.0		
Hanes Dye & Finishing Co.	Winston-Salem, N. C.	W O Sprinkle	7-48	250	500	1	40	BW	7.1				
Johns Manville Prod Corp.	Richmond, Ind.		1950	250	500	1	18	CE	3.2	0.7		DB	
Juice Industries Div.	Dunedin, Fla.	B C Skinner	1950	250	500	1	60	CE					
Kalamazoo Vegetable Parchment	Espanola, Ont.		2-50	250	450	1	100	CE	11.1				
Kansas State College	Mannattan, Kan.		1950	250	500	2	50	CE	6.8	1.7	40.5	DB	
Kerr Bleaching & Finishing Wks.	Concord, N. C.		1949	250	397	1	60	BW	7.9	2.4	30.0		
Kingdon & Co.	Richmond, Va.	Allen J Saville, Inc.	1950	250	324	1	33	BW	4.8	1.1	39.7		
Charles Lachman Co.	Phoenixville, Pa.	C T Main	1950	250	500	3	22	CE	3.9				
Lima-Hamilton Corp.	Lima, Ohio		1950	250	500	2	75	CE	8.9	3.7	25.7		
Long Lac Pulp & Paper Co.	Terrace Bay, Ont.	Stadler, Hunter & Co.	1948	250	500	3	85	FW	12.4	5.6	18.1	DB	
Luxens Steel Co.	Coatesville, Pa.		1950	250	500	2	23	FW	29.2				
Lula Factory Inc.	Belle Rose, La.		10-50	250	490	1	43	CE	5.9	1.5			
Lynchburg State Colony	Colony, Va.		1950	250	500	1	21	CE					
Manson State Hospital	Palmer, Mass.	E C Brown Co.	5-50	250	500	1	36	EC	4.3	0.9	53.0	DB	
National Vulcanized Fibre Co.	Newark, Del.		1949	250	500	1	27	CE	4.0	1.0	35.0		
National Watercraft Papers	Camden, N. Y.		1950	250	500	1	21.6	CE	3.2				
Neville Co.	Pittsburgh, Pa.		1949	250	400	1	16	CB					
N. Y. Butchers Dressed Meat	New York, N. Y.		7-50	250	500	2	50	CE	6.8		31.3		
N. Y. Central System	Elkhart, Ind.		1948	250	500	1	17.3	CE	3.1				

A - Air cooled
Ad - Arsenal Admiralty
AC - Allis-Chalmers Mfg Co
AcCo - Arsenal copper
Ad - Admiralty
Al - Ames Iron Works
Aa - Anthracite
Br - Bigelow Co
BL - Black liquor
Br - Brass

BF - Babcock & Wilcox Co
BWC - Babcock & Wilcox, Goldie McCullough
C - Coal, bituminous
CB - Cleaver-Brooks Co
CE - Combustion-Engineering-Super-heater, Inc
CuNi - Copper-nickel
CY - Canadian Vickers, Ltd
D - Damper

DB - Dry bottom
DL - DeLaval Steam Turbine Co
Du - Duplex pump
E - Electrostatic
EC - Erie City Iron Wks
EI - Elliott Co
EW - Edge Moor Iron Wks, Inc
FW - Foster Wheeler Corp
G - Gas
GE - General Electric Co

H - Hydrogen cooled
HF - Hogged Fuel
Hy - Hydraulic coupling
Ke - E Keeler Co
M - Motor drive
Ma - Magnetic coupling
Me - Mechanical
MT - One motor, one turbine per fan
Mu - Muntz metal
O - Oil

Institutional Power Plants: 200 Psi and Above

Air-heater surface, per boiler, 1000 sq ft	Air-heater type	F-D FANS		I-D FANS		Firing	FUEL		FEED PUMPS		TURBINES					CONDENSERS				Total boiler capacity incl new units, 1000 lb	Total generator capacity incl new units, 1000 kw			
		Dust collectors	Drive	Air-volume control	Drive		Gas-volume control	Type	Heating value, 1000 Btu per lb	Ash fusion temperature, F	Drive	Flow control	Capacity, 1000 kw	Speed, rpm	Manufacturer	Backpressure psi	No. of bleed pits	Generator cooling	Surface, 1000 sq ft			No. water passes	Tube material	
9.1	T-C	SS			SS					1M 1T	R		10.0	3600	GE	35	1	A				285	14	
19.1	T-C	SS			SS					1M 1T	R											105		
2.5	T-C	SS			SS					1M 1T	S	0.7	3600	GE			A					180	14	
13.6	T-C	SS			SS					2M 1T	S											115		
13.6	T-C	SS			SS					2M	S											30		
13.6	T-C	SS			SS					1T	S											145	3.0	
17.5	T-C	SS			SS					1M 1T	R				25			1.6	2	Ad		400		
18.2	T-C	SS			SS					1M 1T		0.9	227	SE	18		A					75	0.9	
13.5	T-C	SS			SS					1M 1T	R											80		
12.8	T-C	SS			SS					2T	S											230		
18.2	T-C	SS			SS					1M 1T	S	0.5		SE	5							120	0.5	
18.2	T-C	SS			SS					2T	S											130		
18.2	T-C	SS			SS					1M												20		
18.2	T-C	SS			SS					2T												14		
17.5	T-C	SS			SS					2T	S											56		
10.6	T-C	SS			SS					1M 1T	R	0.5	5000	W	5		A					105	1.0	
10.6	T-C	SS			SS					1M 1T												50		
11.1	T-C	SS			SS					2M		1.0	3600	M			1	A	1.3	2	Co	1050	1.6	
11.1	T-C	SS			SS					2M												64	2.5	
11.1	T-C	SS			SS					2M	R											15		
18.4	T-C	SS			SS					1M 1Du	R											100		
18.4	T-C	SS			SS					1T	R											746		
18.4	T-C	SS			SS					1T	R											150		
18.4	T-C	SS			SS					2T												98	0.5	
12.1	T-C	SS			SS					1M 1T 1Du S	R		3600	WE								54		
12.1	T-C	SS			SS					1M 2Du	S											80		
4.5	T-C	SS			SS					1M 1T	R											50		
13.5	T-C	SS			SS					1M 1T	R													
17.9	T-C	SS			SS							0.4		EL								37		
17.9	T-C	SS			SS																	120		
17.9	T-C	SS			SS					1M 1T		0.8	3600	GE	10	0	A					65	1.9	
6.7	T-C	SS			SS					2T												120		
18.5	T-C	SS			SS					1M 1Du	R											38		
12.5	T-C	SS			SS					1Du	R											70		
11.6	T-C	SS			SS					1M 1T	R	1.3	5000	W	3.5	1	A					150	2.2	
14.5	T-C	SS			SS					1M 2T	R	2.0	3600	WE	5	0	A					350	5.1	
13.5	T-C	SS			SS					2M	R											228	3.6	
12.8	T-C	SS			SS					2Du	R											50		
12.8	T-C	SS			SS					1M 2Du	R		1750	T										
12.8	T-C	SS			SS					1M 1T	R											300	1.8	
12.8	T-C	SS			SS					2M 1T	R													
12.8	T-C	SS			SS					1M 1T	R													
4.1	T-C	SS			SS					2T	S											135		
18.5	T-C	SS			SS																			
18.4	T-C	SS			SS					2Du	R											21.6		
18.4	T-C	SS			SS					2Du	R											28		
18.4	T-C	SS			SS					1M 1T 1Du	R											100		
18.4	T-C	SS			SS					3Du	R											47.5		

O - Maschinen Fabrik Oerlikon
 P - Pulverized-fuel firing
 PI - Plate
 R - Regulator
 RS - Riley Stoker Corp
 S - Speed control
 SE - Skinner Engine Co
 SS - Spreader stoker
 ST - Slog Top

T - Turbine drive
 T₂ - Turry Steam Turbine Co
 T₃ - Tubular
 UF - Underfeed stoker
 UI - Union Iron Works
 V - Vane control
 V₂ - Vane control
 W - Waste heat

FB - Wm Bras Boiler & Mfg Co
 FE - Westinghouse Electric Corp
 FI - Wickes Boiler Co
 Fo - Worthington Pump & Machy Corp
 FF - Wood waste
 1 - Blast-furnace gas
 2 - Furnace coal
 3 - Flue gas
 4 - Steam-heated

5 - Gas-air heater
 6 - Blast-furnace, natural and coke-oven gases
 7 - Bagasse
 8 - Pitch
 9 - Steam engines
 10 - Coke breeze
 11 - From zinc-concentrator roasting
 (150) - Stoker grate area, sq ft

1950 Design Survey of Typical Industrial and

Compiled by J C McCabe, Associate Editor

Company	Location	Consulting Engineers	First operation, new units	Nominal pressure, psi	Nominal steam temperature, F	BOILERS				Forces volume, 1000 cu ft	Heat release, 1000 Btu per cu ft per hr	Forces bottom	Evaporator surface, 1000 sq ft
						Number	Capacity, each, 1000 lb per hr	Manufacturer	Heating surface, 1000 sq ft				
Northampton State Hospital	Northampton, Mass.	E C Brown Co.	5-50	250	Ser	1	35	Wm	4.6	0.9		DB	
Owens-Corning Fiberglass	Newark, Ohio		1949	250	Ser	1	40	Wm	0.8				
L W Packard Co.	Ashland, N.H.	G H Perkins	11-49	250	Ser	1	30	Wm	5.0	1.6	25.0		
Pure Carbonic Inc.	Chicago, Ill.	R N Palmquist	1948	250	Ser	1	30	Wm					
Raleigh State Hospital	Raleigh, N.C.	Wiley & Wilson	1951	250	Ser	2	50	Wm	16.8		30.0	DB	0
Remington Arms Co.	Ilion, N.Y.		1948	250		2	25	Wm					
Revere Copper & Brass	Detroit, Mich.		1950	250		2	25	Wm	7.9				
Rockford Ohio Forge	Rockford, Ill.	Lockwood Greene	1950	250		2	30	Wm					
Safety Car Mfg & Ltg Co.	New Haven, Conn.		1949	250	Ser	1	5	Wm					
Shelmar Products Co.	Mt Vernon, Ohio	Relax Spangle	1948	250	Ser	1	30	Wm	3.9	1.2	33.5	DB	0
Spaulding Fibre Co.	Tonawanda, N.Y.		1949	250	Ser	2	32.5	Wm					
Sargeant Electric Co.	North Adams, Mass.	F P Sheiden & Sons	1949	250	Ser	3	25	Wm					
Standard-Cosco-Thatcher Co.	Rossville, Ga.		1-50	250	Ser	1	15	Wm					
Susquehanna Mills, Inc.	Sunbury, Pa.	Franklin Engrg	1948	250	Ser	2	35	Wm	5.5		25.0	DB	
United Chemical & Organic Products	Calumet City, Ill.		1949	250	Ser	1	40	Wm	6.2				
United Rayon Mills	Elkhart, Ind.		1949	250	Ser	1	20	Wm					
United States Rubber Co.	Naugatuck, Conn.		1949	250	Ser	3	35	Wm	5.5	1.6	26.5		0
U S Vanadium Corp.	Rifle, Colo.		1950	250	Ser	1	15	Wm					
Univ of Florida	Tallahassee, Fla.		1948	250	Ser	1	31	Wm	3.9				
Univ of Houston	Houston, Texas		1950	250	Ser	2	27	Wm	3.9				
Univ of Kentucky	Lexington, Ky.	Practor & Ingles	1950	250		2	60	Wm	7.8	2.7			
Univ of Maryland	College Park, Md.	Egli & Gamp	1948	250	Ser	1	100	Wm	12.4	5.4	22.0	DB	
Univ of Oregon	Eugene, Ore.	J. Donald Kroecker	10-50	250	Ser	3	35	Wm	6.9	1.9	22.7		
Upper Snake River Valley Dairy Assn.	Idaho Falls, Idaho	Power Engrg Co.	1948	250	Ser	1	23	Wm	3.9				0
Western Gypsum Co.	Sigurd, Utah		1948	250	Ser	1	40	Wm	5.7				
200 TO 249 PSI													
Brown Knitting Co.	Warsaw, N.Y.		1949	240	Ser	1	22	Wm	2.6	0.9	27.6		
Ross & Roberts, Inc.	Stratford, Conn.		11-49	230	Ser	1	5	Wm					
Budd Co.	Detroit, Mich.		1949	225	Ser	1	120	Wm	11.5	6.3			
Carnell Duplicator Elec Corp.	New Bedford, Mass.		1949	225	Ser	1	15	Wm	2.4				
Dan River Mills	Danville, Va.	United Engrs & Constructors Corp.	9-50	225	Ser	1	100	Wm	14.5	7.1	17.5	DB	
Esso Standard Oil Co.	Everett, Wash.		1950	225	Ser	3	80	Wm	8.6	4.0	25.0	DB	2.3
Massachusetts Inst of Tech.	Cambridge, Mass.	Jackson & Mansel	11-50	225	Ser	2	70	Wm	8.4	3.1	28.6		2.6
McCarthy Chemical Co.	Winnie, Texas		1948	225	Ser	3	70	Wm					
Minnesota State Hospital	Fergus Falls, Minn.		1950	225	Ser	1	28	Wm	4.0	1.4			
Ohio State Univ.	Columbus, Ohio	Sargent & Lundy	1951	225	Ser	1	80	Wm	6.7	4.4	24.2	DB	3.0
Villanova College	Villanova, Pa.	Gilbey & O'Malley		220	Ser	2	30	Wm	5.5	1.5	28.5		0
Dominion Alkali & Chem Co.	Beaumont, Texas		1949	213	Ser	1	18	Wm					
Howard Smith Paper Mills, Ltd.	Montreal, Quebec		1948	213	Ser	1	15	Wm					
American Forge Co.	Niles, Calif.		1948	200	Ser	1	24.6	Wm					
Beicher Oil Co.	Miami, Fla.		1949	200	Ser	1	17	Wm	2.1				
Bowser, Inc.	Fort Wayne, Ind.		1949	200	Ser	2	25	Wm	3.9		30.0		
Briggs Mfg Co.	Youngstown, Ohio		1950	200	Ser	1	74	Wm	7.6	2.7			
Buffalo State Hospital	Buffalo, N.Y.		1950	200	Ser	4	53.5	Wm	8.3				
Canadian Pacific Ry.	Montreal, Que.		1950	200	Ser	2	20	Wm					
Celina Stearic Acid Co.	Celina, Ohio		200		Ser	1	18	Wm					
Crown Zellerbach Co.	West Linn, Oregon		200		Ser	2	120	Wm	10.0	5.0	35.5		0
Dalhousie Univ.	Halifax, Nova Scotia	Engrg Serv Co.	1950	200	Ser	2	15	Wm	13.6	6.0	33.5		0
O Norman Barry Memorial Hosp.	Westville, Ind.		1950	200	Ser	3	40	Wm	6.0	1.3			
East Mineral Co.	Eaton, Pa.		10-49	200	Ser	1	21	Wm	3.5	1.0	26.0	DB	
Grier Carbide Co.	Lowell, Mass.		1948	200	Ser	2	17	Wm					
Girard College	Philadelphia, Pa.		1949	200	Ser	1	28	Wm	2.5				
Hotel Dennis	Atlantic City, N.J.	Pennell & Wiltberger	9-50	200	Ser	1	14	Wm					
International Harvester Co.	West Pullman, Ill.	E K Moore	1950	200	Ser	1	60	Wm	8.4	2.4	31.0		
Winnipeg-St. Mary's Hosp.	Winnipeg, Minn.	Tait, King & Dav	1948	200	Ser	2	25	Wm	4.0				
Moore Lake State Hospital	Moore Lake, Minn.		1950	200	Ser	1	24	Wm	3.5	1.1	27.5		0
Morgan Dyeing & Bleaching Co.	Rochelle, Ill.	E H Cassan	1949	200	Ser	1	30	Wm					
New York & Pennsylvania Co.	Lock Haven, Pa.		1949	200	Ser	1	70	Wm	8.5	3.2	30.9		
New York & Pennsylvania Co.	Willsboro, N.Y.		3-50	200	Ser	2	8	Wm	4.1				
Oswego Falls Corp.	Fulton, N.Y.	Burns & Roe	1950	200	Ser	1	50	Wm	6.9	2.2	28.1	DB	1.1
Paraffine Co.	Metuchen, N.J.		1950	200	Ser	2	40	Wm					
Reeves Mfg Co.	Dover, Ohio	Paul Prince & Assoc.	1949	200	Ser	2	40	Wm	5.8	1.8	29.0	DB	
Rice Island Refining Corp.	Rice Island, Ind.		1950	200	Ser	1	36	Wm	5.3	2.1	25.0		
St Joseph's Hospital	Lancaster, Pa.		9-50	200	Ser	3	13.5	Wm	2.5	0.5			
St Peter State Hospital	St Peter, Minn.	Tait, King & Dav, Inc.	1-50	200	Ser	1	28	Wm	5.0	1.3	28.0	DB	
Sears Roebuck & Co.	Seattle, Wash.	H W Beecher		200	Ser	2	22	Wm	5.5				
A G Spaulding & Bros, Inc.	Chicago, Mass.		11-50	200	Ser	1	16	Wm					
State Penitentiary	Jefferson City, Mo.	Fitzpatrick & Nash	2-50	200	Ser	2	28	Wm	2.8	0.7	31.5	DB	0
Stauffer Chemical Co.	Niagara Falls, N.Y.		1949	200	Ser	1	45	Wm	6.8				
Sun-Citrus Products Co.	Haines City, Fla.			200	Ser	1	25	Wm					
U S Dept of Interior	Rifle, Colo.		1950	200	Ser	1	15	Wm	2.5	0.7	29.3		
U S Tobacco Co.	Chicago, Ill.		1948	200	Ser	1	40	Wm	6.5				
Univ of Alberta	Edmonton, Alta.		1950	200	Ser	2	50	Wm					
Univ of Toronto	Toronto, Ont.	H G Acres	1951	200	Ser	2	75	Wm	8.0	4.1	27.7		
Walla Walla College	Walla Walla, Wash.	E F Cross	1949	200	Ser	2	20	Wm	6.2	0.6		DB	
West Linn Supply Co.	Springfield, Mass.		1948	200	Ser	1	22	Wm	3.3				
Western Milk Co.	Rochester, N.Y.		1949	200	Ser	1	4	Wm					
Westinghouse Elec Corp.	Hyde Park, Mass.		1950	200	Ser	2	30	Wm	3.7	1.0			0

Institutional Power Plants: 200 Psi and Above

Air-heater surface, per boiler, 1000 sq ft	Air-heater type	F-D FANS		I-D FANS		Firing	Type	FUEL		FEED PUMPS		TURBINES				CONDENSERS			Total boiler capacity incl new units, 1000 lb	Total generator capacity incl new units, 1000 kw		
		Drive	Air-volume control	Drive	Gas-volume control			Heating value, 1000 Btu per lb	Ash-fusion temperature, F	Drive	Flow control	Capacity, 1000 lb	Speed, rpm	Manufacturer	Backpressure, psi	No. of bleed pits	Generator cooling	Surface, 1000 sq ft	No. water passes	Tube material		
.....	Me	MT	S V	MT	S D	UF	SS(137)	14.0	.....	1M 1T	S, R	.....	.....	.....	.....	.....	.....	.....	.....	.....	165	.....
.....	Tu	Me	M	.....	.....	O	SS(306)	13.7	2400	3M 1T	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	80	.....
0	Me	M	O	M	Hy	SS	SS(70)	12.7	.....	1M 1T	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	125	1.0
.....	Tu	Me	O	MT	O	O	SS(86)	12.0	2200	3D	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	44	.....
0	O	MT	O	.....	O	UF	SS	13.3	2100	1M, 1D	1MT R	.....	.....	.....	.....	.....	.....	.....	.....	.....	90	.....
.....	Me	T	S	T	S, D	SS	UF	13.5	.....	2M 1T	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	45	.....
.....	Me	M	O	M	O	TG(180)	SS	11.0	.....	1M 1T	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	70	.....
0	Me	M	Hy	M	Hy	SS(50)	SS	18.3	.....	3T	S, R	0.2	3600	MI	4	1	.....	.....	.....	.....	85.6	1.5
.....	Tu	Me	V	M	.....	SS	SS	12.0	.....	1M 1T	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	24	.....
.....	Me	T	.....	.....	.....	SS	SS	12.0	.....	2T	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	105	.....
.....	Me	T	S	MT	D	G	SS	1.0	.....	1M 2T	Hy	.....	.....	.....	.....	.....	.....	.....	.....	.....	13	.....
.....	Me	T	S	T	S	SS(152)	SS	13.5	2400	4T	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	111	.....
11.5	Tu	Me	MT	MT	D	P	SS	1.1	.....	2M 2T	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	54	.....
.....	Tu	Me	M	S	M	S	HF	4.5	.....	1M 2T	.....	1.5	3600	W	1.0	1	A	1.7	2	Ad	269	.....
.....	Me	M	V	M	.....	SS(108)	SS	12.5	2500	2D	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	200	.....
.....	Me	M	O	M	.....	SS	SS	13.2	2240	1T, 1D	S, R	.....	.....	.....	.....	.....	.....	.....	.....	.....	105	3.0
.....	Me	M	O	M	.....	SS	SS	12.5	2240	1T, 1D	S, R	.....	.....	.....	.....	.....	.....	.....	.....	.....	23	.....
.....	Me	M	O	M	.....	SS	SS	12.5	2240	1T, 1D	S, R	.....	.....	.....	.....	.....	.....	.....	.....	.....	40	.....
15.9	Tu	Me	MT	D	T	.....	SS	13.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	250	.....
8.6	Tu	Me	M	V	M	D	UF	14.0	2700	1M 3T	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	428	12.9
6.6	Tu	Me	M	V	M	D	UF	14.2	2700	2D	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	240	.....
.....	Me	M	O	M	O	O	SS	18.1	.....	1M 3T	S	.....	.....	.....	.....	.....	.....	.....	.....	.....	190	2.7
.....	Me	M	O	M	O	O	SS	1.0	.....	3T	S	.....	.....	.....	.....	.....	.....	.....	.....	.....	210	.....
.....	Me	M	O	M	O	O	SS	13.8	.....	1D, 1M, 1T	.....	0.9	1200	MI	5	1	A	.....	.....	.....	48	0.9
0	Me	M	O	M	O	O	SS(182)	12.0	2200	1T	R	5.0	3600	GE	.....	1	A	6.0	2	M	465	14
0	Me	M	O	M	O	O	TG(179)	11.7	.....	2D	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	60	.....
.....	Me	M	O	M	O	O	UF(26)	14.0	.....	1M, 1D	S, R	.....	.....	.....	.....	.....	.....	.....	.....	.....	36	.....
.....	Me	M	O	M	O	O	SS	14.0	.....	1M	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	38	.....
.....	Me	M	O	M	O	O	SS(72)	14.0	2800	1M 1T	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	50	.....
.....	Me	M	O	M	O	O	SS	18.0	.....	2T, 1D	.....	1.3	3600	.....	10	A	.....	.....	.....	.....	74	.....
.....	Me	M	O	M	O	O	SS	18.0	.....	2T, 1D	.....	1.3	3600	.....	10	A	.....	.....	.....	.....	214	1.3
.....	Me	M	O	M	O	O	SS	18.0	.....	2T, 1D	.....	1.3	3600	.....	10	A	.....	.....	.....	.....	280	.....
15.0	Tu	Me	T	S	T	S	WW, O	4-8.0	.....	3T	S	.....	.....	.....	.....	.....	.....	.....	.....	.....	410	.....
.....	Me	M	O	M	O	O	SS	12.0	2200	1T	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	30	.....
.....	Me	M	O	M	O	O	SS	12.0	2200	1T	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	120	1.2
.....	Me	M	O	M	O	O	SS	12.0	2200	1T	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	60	.....
.....	Me	M	O	M	O	O	SS	12.0	2200	1T	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	60	.....
.....	Me	M	O	M	O	O	SS	12.0	2200	1T	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	60	.....
.....	Me	M	O	M	O	O	SS	12.0	2200	1T	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	60	.....
.....	Me	M	O	M	O	O	SS	12.0	2200	1T	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	60	.....
.....	Me	M	O	M	O	O	SS	12.0	2200	1T	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	60	.....
.....	Me	M	O	M	O	O	SS	12.0	2200	1T	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	60	.....
.....	Me	M	O	M	O	O	SS	12.0	2200	1T	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	60	.....
.....	Me	M	O	M	O	O	SS	12.0	2200	1T	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	60	.....
.....	Me	M	O	M	O	O	SS	12.0	2200	1T	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	60	.....
.....	Me	M	O	M	O	O	SS	12.0	2200	1T	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	60	.....
.....	Me	M	O	M	O	O	SS	12.0	2200	1T	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	60	.....
.....	Me	M	O	M	O	O	SS	12.0	2200	1T	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	60	.....
.....	Me	M	O	M	O	O	SS	12.0	2200	1T	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	60	.....
.....	Me	M	O	M	O	O	SS	12.0	2200	1T	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	60	.....
.....	Me	M	O	M	O	O	SS	12.0	2200	1T	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	60	.....
.....	Me	M	O	M	O	O	SS	12.0	2200	1T	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	60	.....
.....	Me	M	O	M	O	O	SS	12.0	2200	1T	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	60	.....
.....	Me	M	O	M	O	O	SS	12.0	2200	1T	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	60	.....
.....	Me	M	O	M	O	O	SS	12.0	2200	1T	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	60	.....
.....	Me	M	O	M	O	O	SS	12.0	2200	1T	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	60	.....
.....	Me	M	O	M	O	O	SS	12.0	2200	1T	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	60	.....
.....	Me	M	O	M	O	O	SS	12.0	2200	1T	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	60	.....
.....	Me	M	O	M	O	O	SS	12.0	2200	1T	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	60	.....
.....	Me	M	O	M	O	O	SS	12.0	2200	1T	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	60	.....
.....	Me	M	O	M	O	O	SS	12.0	2200	1T	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	60	.....
.....	Me	M	O	M	O	O	SS	12.0	2200	1T	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	60	.....
.....	Me	M	O	M	O	O	SS	12.0	2200	1T	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	60	.....
.....	Me	M	O	M	O	O	SS	12.0	2200	1T	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	60	.....
.....	Me	M	O	M	O	O	SS	12.0	2200	1T	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	60	.....
.....	Me	M	O	M	O	O	SS	12.0	2200	1T	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	60	.....
.....	Me	M	O	M	O	O	SS	12.0	2200	1T	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	60	.....
.....	Me	M	O	M	O	O	SS	12.0	2200	1T	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	60	.....
.....	Me	M	O	M	O	O	SS	12.0	2200	1T	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	60	.....
.....	Me	M	O	M	O	O	SS	12.0	2200	1T	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	60	.....
.....	Me	M	O	M	O	O	SS	12.0	2200	1T	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	60	.....
.....	Me	M	O	M	O	O	SS	12.0	2200	1T	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	60	.....
.....	Me	M	O	M	O	O	SS	12.0	2200	1T	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	60	.....
.....	Me	M	O	M	O	O	SS	12.0	2200	1T	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	60	.....
.....	Me	M	O	M	O	O	SS	12.0	2200	1T	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	60	.....
.....	Me	M	O	M	O	O	SS	12.0	2200	1T	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	60	.....
.....	Me	M	O	M	O	O	SS	12.0	2200	1T	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	60	.....
.....	Me	M	O	M	O	O	SS	12.0	2200	1T	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	60	.....
.....	Me	M	O	M	O	O	SS	12.0	2200	1T	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	60	.....
.....	Me	M	O</																			

1950 Design Survey of Typical Industrial and

Compiled by J C McCabe, Associate Editor			First operation new units	Nominal pressure, psi	Nominal steam temperature, F	BOILERS		Firing	TURBINES				Total boiler capacity incl new units 1000 lb	Total generator capacity incl new units 1000 kw	
Company	Location	Consulting Engineers				Number	Capacity, each 1000 lb per hr		Capacity, each 1000 lb per hr	Speed, rpm	Manufacturer	Backpressure psi			No. of bleed pits
161 TO 199 PSI															
Westmariana Hospital Assn.	Greensburg, Pa.	E. D. Tucker	1950	196	338	1	11	UI	UF/56)						
Canadian National Ry.	No. Satterloro, Sask.		1949	192	327	1	6							24	
Canadian National Ry.	Hudson Bay Junction, Sask.		1949	192	327	1	6								
Canadian National Ry.	Drumheller, Alta.		1949	192	327	1	6								
York Knitting Mills	Woodstock, Ont.		1950	192	353	2	6	CV	UF						
U.S. Penitentiary	McNeil Island, Wash.		1949	185	480	1	13.8	Bw	AN	1.0	4500	Mo	1.0	1	44.9 2.1
Cane Co.	Chicago, Ill.	Sargent & Lundy	1949	180	373	1	75	KE	SS(166)						
Flintkote Co.	East Rutherford, N.J.	R. R. Imsensee	1950	180	440	1	30	RS						50	
Roanoke Mills Co.	Roanoke Rapids, N.C.		1950	180	340	2	40	RW	SS					30	
U.S. Veterans Administration	Sawtelle, Calif.		2-50	180	375	2	50	UI	O.G.					117	
Zion's Co-op Mercantile Inst.	Salt Lake City, Utah		1950	180	460	1	18.5	UI	O.G.	1.0	200	SE	5.0	1	30 1.0
Delaware, Lackawanna & Western RR	Hoboken, N.J.		1950	175	378	1	60	FW	O					240	
Noranda Mines	Dallas, Pa.		1948	175	340	1	18	IB	TG						
U.S. Plywood Corp.	Noranda, Que.		10-51	175	525	1	22.5	JI	WH						
W. J. Jette Co.	Orangeburg, S.C.	Lockwood Greene	1950	175	340	1	17	BW	WW						
Episcopienne Corp.	Montreal, Que.		1950	171	340	2	18	CV	O						
Shupe & Dohme Inc.	Ottawa, Ont.		1950	170	340	2	24	CV	O						
National Institutes of Health	North Wales, Pa.		1950	170	340	2	40	CE	O						
	Bethesda, Md.		1952	165	340	3	150	EM	O					450	
151 TO 160 PSI															
Acton Rubber Co.	Actonville, Que.		1950	160	340	1	15	CV	UF						
Adelphi Academy	Holly, Mich.	R. Cole	1949	160	363	1	12.5	WB	O					25	
Allied Kid Co.	Wilmington, Del.		1949	160	331	1	17	BW	O						
Allis Chalmers Mfg. Co.	West Allis, Wis.	F. G. Schmid	1950	160	470	1	175	RS	P	7.4	3600	AC		572	12
Arkport Dairies	Arkport, N.Y.		1950	160	340	1	20	EC	O						
Aron Canning Co.	Stockton, Calif.		1949	160	340	1	30	EC	O						
Babcock & Wilcox Co.	Alliance, Ohio		1949	160	353	2	25	BW	UF					50	
Barley Meter Co.	Cleveland, Ohio		1948	160	340	1	10	BW	UF						
Ballantine Brewing Co.	Newark, N.J.		1949	160	350	2	35	BW	O					90	
Beaucher Falls Mfg. Corp.	Beaucher Falls, Ont.		1951	160	340	1	23	WB	O	0.2	200	SE	12	22	3.9
Brigham Young Univ.	Grosse Pointe, Mich.		1950	160	340	1	11	EC	O						
Brown & Williamson Tobacco Corp.	Provo, Utah	Earl Gritton	2-50	160	340	1	21	UI	P						
Butler Cnty Memorial Hospital	Petersburg, Va.		2-50	160	340	1	20	RS	TG						
Butler & Ullman, Inc.	Butler, Pa.	Fosdick-Meimer	1950	160	338	2	20	BW	UF					40	
H. F. Byrd, Inc.	Hadley, Mass.		1948	160	324	1	16.5	BW	UF						
	Berryville, Va.		1949	160	340	1	16	EC	O						
Carlisle Tire & Rubber Co.	Carlisle, Pa.		1950	160	340	1	16	EC	SS					26	
Chicago Natural History Museum	Chicago, Ill.		1950	160	338	2	20	BW	TG					50	
Chicago Pneumatic Tool Co.	Franklin, N.Y.		1949	160	338	2	20	BW	SS					50	
Chicago Screw Co.	Bellwood, Ill.		1949	160	338	3	16.5	BW	O					50	
City of Baltimore Airport	Baltimore, Md.		1949	160	340	2	25	EC	O					19.5	
City of Chicago	Chicago, Ill.		7-50	160	347	3	29	WB	O					50	
Coca Cola Co.	Baltimore, Md.		1949	160	338	1	16	BW	O						
Concord Steam Corp.	Concord, N.H.		1-50	160	340	1	25	RS	O					50	
Cops of Engineers	Albuquerque, N.M.	Black & Veatch	1949	160	338	2	33	BW	O.G.						
Cuyahoga Soap Co.	Cleveland, Ohio		1950	160	338	1	9	BW	UF						
Davidson College	Davidson, N.C.	Wm. Wallace II	1950	160	340	1	20.8	CE	UF						
Denver Sewer Pipe & Clay Co.	Denver, Colo.		1950	160	358	1	27	BW	SS						
M. H. Dietrick Co.	Aurora, Ill.		1949	160	353	1	15	BW	O.G.						
Diamond Pwr. Specialty Co.	Lancaster, Ohio	Austin Co.	1950	160	338	2	6	BW	UF					12	0
Doctors Hospital	New York, N.Y.		1949	160	338	2	17	BW	O					26	
Durham High School	Durham, N.C.		1950	160	353	1	16	BW	UF						
Euclid Road Machinery Co.	Euclid, Ohio	Mayer & Valentine	1950	160	340	2	20	EC	UF					40	
Export Leaf Tobacco Co.	Richmond, Va.		1948	160	340	1	36	EC	O					90	
Export Leaf Tobacco Co.	Wilson, N.C.		1950	160	340	2	14	EC	O						
Warren Featherbone Co.	Three Oaks, Mich.		1949	160	353	1	13	BW	UF						
Forest Products Treating Co.	Dallas, Ore.		1949	160	340	2	16	EC	SS					22	
Galla Winery	Modesto, Calif.	G. E. Rahm	9-50	160	340	1	26	BI	O.G.						
General Electric Co.	Bridgeville, Pa.		1949	160	338	1	12	BW	UF					26	
General Electric Co.	Circleville, Ohio		1949	160	340	2	25	EC	UF					50	
Glen Raven Cotton Mills	Glen Raven, N.C.		1949	160	340	1	20	EC	O						
Goodrich Sash & Door Co.	Leavenworth, Kan.		1949	160	353	1	10	BW	WW					0	
Greenwood Mills	Greenwood, S.C.	McPherson & Co.	1950	160	344	2	10	BW	UF						
Grinnell Corp.	Providence, R.I.		1949	160	312	1	20	BW	O						
A. Gross & Co.	Newark, N.J.		1949	160	340	1	35	RS	SS					5	
Hamilton Mfg. Co.	Columbus, Ind.		1950	160	340	1	24	Y6	TG						
Harding Carriers, Ltd.	Brentford, Ont.		10-50	160	125	1	15	FW	UF					30	
Houdaille-Hershey Corp.	Decatur, Ill.		1949	160	338	2	15	BW	O.G.					56	
Inaquis Beverage Corp.	Buffalo, N.Y.		3-50	160	340	2	21	UI	SS					42	
Ithaca Gun Co., Inc.	Ithaca, N.Y.		1950	160	320	1	10	BW	TG						
Kraft Foods, Inc.	Kendallville, Ind.		1949	160	340	2	16	EC	O					22	
Lancaster General Hospital	Lancaster, Pa.		1949	160	340	2	16	EC	UF						
Lana O'Lakes Creamery	Marshfield, Wis.		1949	160	340	2	20	EC	SS					40	
Lana O'Lakes Creamery	Whitetail, Wis.		1949	160	340	3	50	EC	SS					22	
Lehigh Valley Farmers Co-op	Allentown, Pa.		1948	160	350	2	11	UI	TG						
Libby-McNair-Libby	Grainlev, Calif.		1949	160	340	1	32	EC	O						

AC - Allis-Chalmers Mfg Co	C - Coal, bituminous	D - Damper	FF - Foster
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Institutional Power Plants: Below 200 Psi

Compiled by J. C. McCabe, Associate Editor

Company	Location	Consulting Engineers	First operation, new units	Nominal pressure, psi	Nominal steam temperature, F	Number	Capacity, each, 1000 lb per hr	Manufacturer	Firing	Capacity, 1000 kw	Speed, rpm	Manufacturer	Back pressure, psi	No. of bleed pits	Total boiler capacity incl. new units, 1000 kw	Total generator capacity incl. new units, 1000 kw
Libby-McNeil-Libby	Sunnyvale, Calif.		1948	160	Sat	1	19	MM							59.7	
Liberty Motors Mills, Inc.	Gibsonville, N. C.		1949	160	Sat	1	32	MM								
Liebmann Breweries, Inc.	Brooklyn, N. Y.		1949	160	450	1	50	MM								
Lincoln Electric Co.	Euclyd, Ohio		1950	160	Sat	1	36	MM								
Locke Insulator Corp.	Baltimore, Md.		1949	160	353	1	23	MM								
Loyola Univ.	Chicago, Ill.		1949	160	358	1	26	MM								
Lucky Lager Brewing Co.	Azusa, Calif.		1950	160	353	2	18	MM								
Manning, Maxwell & Moore	Stratford, Conn.		1949	160	358	1	16	MM								
Marvount Hospital	Garfield Heights, Ohio		1949	160	353	2	13.5	MM								
McLouth Steel Co.	Trenton, Mich.		1949	160	353	2	31	MM								
Memorial Hospital	Houston, Texas		1950	160	Sat	2	17.3	MM								
Mills College	Oakland, Calif.	Hudson & Gray	1950	160	338	1	25	MM								
Mohawk Paper Mills	Conover, N. Y.		1949	160	Sat	1	25	MM								
Monarch Laundry	Chicago, Ill.	E. Casson	1949	160	Sat	1	30	MM								
Mr. St. Mary's Hospital	Niagara Falls, N. Y.	J. Fruchtbau	1949	160	Sat	2	20	MM								
St. Sinai Hospital	Minneapolis, Minn.		1950	160	Sat	2	20	MM								
Victor Macpherson Co.	Greenville, S. C.	J. P. Stevens & Co.	1949	160	353	2	18	MM								
Woor Barn Hotel	Waukesha, Wis.		1950	160	344	1	13	MM								
Niles Glass Works	Niles, Ohio		1949	160	353	1	36	MM								
North Carolina College	Durham, N. C.		1950	160	Sat	2	30	MM								
North Texas State College	Denton, Texas	Yandell, Cowan, Love Engr. Co.	1949	160	Sat	2	9	MM								
Norwalk State Hospital	Norwalk, Calif.		1949	160	Sat	1	33	MM								
Oakland County Service Ctr.	Pontiac, Mich.	Hyde & Babbie	1949	160	Sat	1	23	MM								
Ohio Rubber Co.	Long Beach, Calif.		1950	160	Sat	1	26	MM								
Oregon State Hospital	Seaside, Ore.	Thos. Taylor	1950	160	353	1	26	MM								
Pacific Colony State Hospital	Spadra, Calif.		1949	160	220	1	20	MM								
Pacific Lumber Agency	Sumner, Wash.		1949	160	Sat	1	6	MM								
Pacific States Cast Iron Pipe Co.	Provo, Utah		1949	160	Sat	2	10	MM								
Peralta Hospital	Oakland, Calif.	Garthorne Buonaccorsi, Murry	1950	160	Sat	2	14	MM								
Pesco Products Co.	Bedford, Ohio		1950	160	Sat	2	40	MM								
Peter Paul Inc.	Newark, Conn.		11-50	160	Sat	2	9	MM								
Pilgrim State Hospital	Brenwood, N. Y.		1949	160	370	1	70	MM								
Polyclinic Hospital	Cleveland, Ohio		1949	160	Sat	2	8	MM								
Providence Memorial Hospital	El Paso, Texas		1950	160	Sat	2	10	MM								
Quaker Maid Co.	Stamoaale, Ohio		1949	160	Sat	1	27	MM								
Revere Copper & Brass	Baltimore, Md.		1949	160	353	2	15	MM								
Revere Copper & Brass	Rome, N. Y.		1950	160	353	1	38	MM								
Rich Ladder Mfg. Co.	Cincinnati, Ohio		1949	160	358	1	10	MM								
Rockwell Mfg. Co.	Freeport, Ill.		1949	160	338	2	10	MM								
Rosedale Knitting Co.	Reading, Pa.	Wertz Engr.	1948	160	344	2	10	MM								
St. Francis Convent	Mishawaka, Ind.		1950	160	338	2	17.5	MM								
St. John's Hospital	Brooklyn, N. Y.	Egan, Freund & Canabell	1949	160	Sat	1	14	MM								
St. Joseph Hospital	Memphis, Tenn.	T. J. O'Brien	1949	160	344	2	15	MM								
St. Vincent's Hospital	Birmingham, Ala.	J. A. Evans	1950	160	Sat	2	8	MM								
San Bernardino County Hospital	San Bernardino, Calif.	Stockley & Bamford	1949	160	344	3	15	MM								
San Jacinto Granaries	Houston, Texas		1949	160	Sat	1	20	MM								
San Lorenzo Nurseries	Los Angeles, Calif.		1949	160	Sat	1	30	MM								
Selbach Hotel	Louisville, Ky.		1950	160	Sat	1	30	MM								
Self Memorial Hospital	Greenwood, S. C.		1950	160	344	2	10	MM								
Shaw Univ.	Raleigh, N. C.		1949	160	Sat	2	12	MM								
T. S. Summs & Co., Ltd.	St. John, New Brunswick		1950	160	Sat	1	11.5	MM								
Southern Baptist Theological Seminary	Louisville, Ky.		1948	160	366	1	28.5	MM								
Spalding Laundry Dry Cleaning	Spokane, S. C.		1949	160	352	1	13.8	MM								
Spartan Mills	Stanton, Calif.	G. E. Rahm	1949	160	Sat	1	36	MM								
Stanford Univ.	Huntsville, Texas		1950	160	Sat	1	20	MM								
Texas Prison System	Birmingham, Ala.		1948	160	Sat	1	5.2	MM								
Turkey Hotel	Albuquerque, N. M.	Black & Veatch	1950	160	350	4	60	MM								
U. S. Atomic Energy Comm.	Albuquerque, N. M.		1949	160	353	3	13.6	MM								
U. S. Veterans Admin.	Fort Payne, Ind.		1949	160	Sat	1	27	MM								
U. S. Veterans Admin.	Hot Springs, S. D.		1949	160	358	25	WB	MM								
U. S. Veterans Admin.	Iowa City, Ia.		1950	160	Sat	3	16	MM								
U. S. Veterans Admin.	Lexington, Ky.		1950	160	Sat	3	26.4	MM								
U. S. Veterans Admin.	Little Rock, Ark.		1950	160	Sat	3	6.9	MM								
U. S. Veterans Admin.	Manchester, N. H.		1949	160	Sat	3	12	MM								
U. S. Veterans Admin.	Omaha, Neb.		1950	160	Sat	3	6.9	MM								
U. S. Veterans Admin.	Phoenix, Ariz.		1950	160	Sat	3	10	MM								
U. S. Veterans Admin.	Polar Bluff, Me.		1950	160	Sat	1	8	MM								
U. S. Veterans Admin.	Portland, Ore.		1950	160	Sat	3	16	MM								
U. S. Veterans Admin.	St. Cloud, Minn.		1949	160	337	2	25	MM								
U. S. Veterans Admin.	Spokane, Wash.		1949	160	338	1	11	MM								
U. S. Veterans Admin.	Walla Walla, Wash.		1950	160	Sat	3	12	MM								
Univ. of Alabama	University, Alabama		1949	160	Sat	1	27.5	MM								
Univ. of Idaho	Bozeman, Idaho	Earl Gritton	1948	160	353	2	23	MM								
Univ. Of Maryland	Princess Anne, Md.	James Posey	1950	160	Sat	2	13.5	MM								
Utah Canning Co.	Opden, Utah		1950	160	353	1	12	MM								
Washington State Pen.	Walla Walla, Wash.	C. C. Moore	1949	160	347	1	30	MM								
Wilberforce College	Wilberforce, Ohio	R. S. Curl & Assoc.	10-50	160	350	1	10	MM								
150 TO 199 PSI																
Evanson Estate	Boston, Mass.		11-49	155	Sat	1	15	MM								
Alben Dories	Philadelphia, Pa.		8-50	150	Sat	2	8.5	MM								
Allied Mills, Inc.	Perrysburg, Va.		1948	150	360	1	5.0	MM								

O - Oil
 P - Pulverized-fuel firing
 R - Regulator
 RS - Riley Stoker Corp.
 S - Speed control
 SE - Skinner Engine Co.
 SS - Spreader stoker
 T - Turbine drive
 TC - Traveling-grate stoker
 TI - Titusville Iron Works Div.
 UF - Underfeed stoker
 UI - Union Iron Works
 V - Valve control
 VK - Vickers Kester Co.
 Vo - Henry Vogt Machine Co.
 F - Wood
 FH - Waste Heat
 FB - Wm. Bras Boiler & Mfg. Co.
 FE - Westinghouse Electric Corp.
 Fi - Wickes Boiler Co.
 Fo - Worthington Pump & Machy Corp, Moore Steam Turbine Division
 FF - Wood waste
 (150) - Stoker grate area, sq ft
 (1) - Gas-engine driven

Industrials and Institutionals: Below 200-Psi

Compiled by J. C. McCabe, Associate Editor

Company	Location	Consulting Engineers	First operation new units	Nominal pressure, psi	Nominal steam temperature, F.	BOILERS			Filing	TURBINES					Total boiler capacity incl new units, 1000 lb.	Total generator capacity incl new units, kw
						Number	Capacity, each, 1000 lb per hr	Manufacturing		Capacity 1000 kw	Speed, rpm	Manufacturer	Backpressure psi	No. of blades psi		
Balentine Packing Co.	Greenville, S. C.		1950	150	2	5.8	CB	O								
Ballers Oil Co.	Wethersfield, Conn.		2-50	150	Ser	1	5.0	BI	O							
W. B. Beach	Petersburg, Va.		1950	150	Ser	1	9.5	BI	O							
Breyer Ice Cream Co.	Long Island City, N. Y.		1949	150	Ser	1	8.5	BI	O							
Bridgeport Industrial Serv.	Shelton, Conn.		10-50	150	Ser	1	9.0	CB	O							
Brown & Williamson Tobacco	Lexington, Ky.		12-48	150	36	16	JI	CB	O							
Bensus Hatch	Waterbury, Conn.		7-49	150	Ser	2	7	BI	O							
Burney Bros. Bakery	Chicago, Ill.		1950	150	Ser	3	5.8	CB	O							
Canadian Car & Foundry Co.	Montreal, Canada		1950	150	Ser	1	40	FW	SS						94	
Canadian Car & Foundry Co.	Montreal, Canada		1949	150	Ser	1	40	FW	SS							
Canadian Pacific Rwy.	Winnipeg, Manitoba		1950	150	Ser	1	40	FW	SS						100	
Capitol Record, Inc.	Los Angeles, Calif.		1950	150	350	1	6.9	CB	O							
Canorian Co.	Sherbrooke, Que.		1950	150	Ser	1	36	CV	C							
Chrysler Corp.	Detroit, Mich.		1950	150	Ser	1	5	CB	O							
Commercial Solvents Corp.	Terre Haute, Ind.		1950	150	Ser	2	25	WI	O							
Conglomerate-Norm Co.	Cedarhurst, Md.		1950	150	Ser	3	35	RS	SS						135	
Crawley's Milk Co.	Patterson, N. J.		1948	150	Ser	1	5.2	CB	O							
Dept. of Justice	Kingston, Ontario		1950	150	465	1	21	JI	UF							
Dickinson County Hosp.	Iron Mountain, Mich.		1950	150	Ser	2	5.8	CB	O							
Dornbecher Mfg. Co.	Parramatta, Ore.		1948	150	358	1	4.5	RS	O	HF	0.5	3600	AC	5	100	0.5
Dairy Maidens Dairies	Eau Claire, Wis.		1948	150	Ser	1	5.2	CB	O							
Elliott Hospital	Manchester, N. H.	R. D. Kimball	11-49	150	Ser	1	3.0	BI	O							
Elmira Reformatory	Elmira, N. Y.		1949	150	266	4	16	BW	UF(96)	1.0	4500	W	4	0	64	1.6
Falstaff Brewing Corp.	St. Louis, Mo.		1949	150	Ser	1	48	BW	TC(110)							
Falls City Creamery Co.	Falls City, Neb.		1948	150	Ser	1	5.2	CB	O							
Filkin Hospital	Neptune, N. J.		11-49	150	Ser	1	7.5	BI	O							
Florida Tar & Creosote Corp.	Tampa, Fla.		1948	150	366	1	4.3	CB	O							
Ford Motor Co.	Cleveland, Ohio	Fairbrother, Michls.	1951	150	Ser	1	60	WI	TC						360	0
Ford Motor Co.	Cincinnati, Ohio	Fairbrother, Michls.	1950	150	Ser	3	25	WI	UF						75	0
Gladstone, McBean & Co.	Glenade, Calif.		1948	150	Ser	1	17	CB	O							
Interlake Tissue Mills Co.	Merritt, Ont.		1950	150	416	1	33	FW	SS							
Jaliet Arsenal	Jaliet, Ill.		1950	150	Ser	2	5.8	CB	O							
Keller State Street Restaurant	Albany, N. Y.	A. E. Offner	1-51	150	Ser	2	4	BI	O							
Lane Star Brewing Co.	San Antonio, Tex.		1949	150	Ser	1	16	EC	O							
Martin Rockwell Corp.	Plainville, Conn.		8-50	150	Ser	1	14	BI	O							
M. McLaughlin & Co.	Danbury, Conn.		11-49	150	Ser	1	7.5	BI	O							
Michigan Milk Producers	Imley City, Mich.		5-50	150	Ser	2	12	BI	C							
Mohican Hotel	New London, Conn.		8-49	150	Ser	1	4	BI	O							
Neo-Groove Printing Co.	Weehawken, N. J.		1950	150	Ser	3	8.7	CB	O							
Northern Engraving & Mfg.	La Crosse, Wis.		1950	150	Ser	4	5.8	CB	O							
Norlage Laundry	Brooklyn, N. Y.		9-50	150	Ser	1	8.5	BI	O							
Perkins Institution	Watertown, Mass.	Hall's French	8-50	150	Ser	4	8.5	BI	O							
Power & Combustion Inc.	Baltimore, Md.		6-50	150	Ser	1	4	BI	O							
Reilly Tar & Chemical Co.	Farmington, N. Va.	M. R. Harner	1949	150	Ser	1	17	CB	G							
Ridgeview Farms Dairy	Chicago, Ill.		1949	150	Ser	1	6.9	CB	O						9	
St. Joseph's Hospital	St. Joseph, Mich.		1950	150	Ser	3	7	CB	O							
St. Lawrence State Hosp.	Ogdensburg, N. Y.		9-51	150	365	4	40	TI	SS	1.0	1200	W			160	1.0
Schott's Memorial Hospital	Warren, Iowa		1950	150	Ser	2	7	CB	O							
Stokely Foods, Inc.	Indianapolis, Ind.		1949	150	Ser	1	70	RS	SS(126)							
Swedish American Hospital	Rockford, Ill.		1950	150	Ser	2	8.7	CB	O							
Truett Hospital, Baylor Univ.	Dallas, Texas		1950	150	Ser	12	5	EC	G							
United Shoe Machv. Corp.	South Middletown, Mass.		9-50	150	Ser	1	11	BI	O							
United States Rubber Co.	Manchester, N. H.		1949	150	365	2	2	CB	O							
Van Rostre Co., Inc.	Bryson City, N. C.		1950	150	Ser	1	8	EC	C							
Verona Chemical Co.	Newark, N. J.		1950	150	Ser	2	5.8	CB	O							
Winnabago State Hospital	Winnabago, Wis.	Gates, Mae & Weiss	11-50	150	Ser	3	12	UI	UF							
R. L. Ziegler, Inc.	Tuscaloosa, Ala.		9-50	150	Ser	1	7.5	BI	O							
(149 PSI AND BELOW)																
Beatty Bros. Ltd.	Fergus, Ont.	Taylor Engr.	12-49	145	355	1	40	FW	SS(129)							
Van Rostre, Inc.	Athens, Tenn.		1949	140	Ser	1	5	CE	SS(30)							
All Steel Equipment, Inc.	Aurora, Ill.		1949	125	Ser	2	12	CB	O							
Alloy Metal Sales, Ltd.	Toronto, Ont.		1949	125	Ser	1	4	JI	UF							
American Can Co.	Charlton, Ont.		11-50	125	Ser	2	20	JI	O							
Canadian National Rwy.	Marneadwyne, Ontario		1950	125	Ser	2	9	SS								
Carol-May Finishing Co.	Concord, N. C.		1948	125	Ser	1	4.3	CB	O							
Dayton State Hospital	Dayton, Ohio	Carl Larimer	1950	125	Ser	1	17.5	UI	UF							
Dept. of Public Wks.	Smith Falls, Ont.		1950	125	Ser	3	25	JI	SS							
Honeoye Falls Cream Prod.	Honeoye Falls, N. Y.		1948	125	Ser	1	6	CB	O							
Johnson Steel & Wire Co.	Worcester, Mass.		1948	125	Ser	1	5.2	CB	O						15	
M. E. Koontz Creamery, Inc.	Baltimore, Md.	Lester Gardner	1948	125	Ser	1	18	O								
Reliance Electric & Engrg Co.	Ashabula, Ohio		1948	125	Ser	1	10.5	CB	O							
Southern Cotton Oil Co.	Memphis, Tenn.		1948	125	Ser	3	33	CE	G							
U. S. Veterans Admin.	Rutland Heights, Mass.		1948	125	Ser	1	4.3	CB	O						26	
Thomas Young Greenhouses	Bound Brook, N. J.	P. H. Oppenheimer	1949	125	Ser	3	15	UF								
Shapiro Rock Stone Tchns. Coll.	Shapiro Rock, Pa.	Rust Engr.	1951	120	Ser	2	20	UF								
Bridgeport Pipe & Engrg. Co.	Bridgeport, Conn.	Fletcher Thompson	11-50	100	Ser	4	6.5	BI	O							
Canadian Car & Foundry	Montreal, Canada		1-50	100	Ser	1	15	JI	O						18	
Cravenette Co. of U.S.A.	Hoboken, N. J.		100	250	Ser	1	16	CB	O							
Cycleward Cement Prod.	Trenton, Mich.	Giffels & Voller	100	292	Ser	2	6	CB	O							
Douglas & Lomax Co.	Detroit, Mich.	C. S. Harrison	100	Ser	1	20	FW	UF								
Hallinger Gold Mines	Tombins, Ont.		1949	100	388	1	7	CB	O							
Reliance Electric & Engrg Co.	Ashabula, Ohio		1948	100	Ser	1	7	CB	O							
Warren Petroleum Co.	Waynesville, Okla.	Dresser Engr.	10-49							2.0	327	El				