1948 Design Survey of Typical Industrial and Institutional Power Plants: 200 Psi or Above

For notes on uses and limitations of this tabulation • See page 122

Compiled by J C McCabe, Associate Editor

Company	Location	Consulting Engineers	First Operation, New Units	Nominal Pressure, psi	Nominal Steam Temperature, F	BOILERS: 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	Air-Heater Surface, per Boiler, 1000 sq ft	Air-Heater Type	F-D FANS: Drive	F-D FANS: Air-Volume Control	I-D FANS: Drive	I-D FANS: Gas-Volume Control	Firing	FUEL: Type	FUEL: Heating Value, 1000 Btu per lb	FUEL: Ash-Fusion Temperature, F	FEED PUMPS: Drive	FEED PUMPS: Flow Control	TURBINES: Capacity, 1000 kw	TURBINES: Speed, rpm	TURBINES: Manufacturer	TURBINES: Steam Pressure, psig	TURBINES: No. of Bleed Points	CONDENSERS: Generator Cooling	CONDENSERS: Surface, 1000 sq ft	CONDENSERS: No. Water Passes	CONDENSERS: Tube Material	Total Boiler Capacity, 1000 lb per hr	Total Generator Capacity, Kw Units, 1000 kw
700 PSI AND ABOVE																																		
Standard Oil Co of Indiana	Whiting, Indiana	Stone & Webster	1948	1350	900	3	300	FW	21.6	30.8	13.7	75.0	Ro	Mp	V	Mp	V	P, O, G	C, O, G	....	....	TM, IT	....	10	3600	GE	400	0	A	None	..	.....	1,900	64.5
																								10	3600	AC	400	0	A					
Dow Chemical Co.	Midland, Mich.	Dow Engrs.	11-49	1250	630	2	400	BW	1.9	1.0	300.0	135.7	Ts	M	V	None[3]	None[3]	P[2]	C	12.5-14.5	2200-2500	TM, IT	S	30	3600	WH	45	2	H	None	..	.....	800	30.0
Scott Paper Co.	Chester, Pa.	Stone & Webster	11-47	975	625	1	170	CE	17.4	9.2	30.5	31.0	Ro	M	D	M	V	P	C	13.5	2500	TM, IT	R											
Socony Vacuum Oil Co.	Paulsboro, N. J.		12-48	925	750	1	300	BW	18.5			99.6	Ro	M, T	D	M, T	S	O	C	18.9		TT	R	7.5	3600	GE	1.5	2	A	6.5	2	SS	1,265	10.0
Calco Chemical Div.	Willow Island, W. Va.	Rhasco	1948	900	750	2	165	BW	9.6	5.7	35.6	88.5	Ts	M, T	S, D	M, T	D	P	C, O, G	12.0-13.0	2000	TM, IT	....										530	33.0
Monsanto Chemical Co.	Everett, Mass.		1949	900	825	1	165	RB										P	C			TM, IT	R											
Socony Vacuum Oil Co.	Paulsboro, N. J.	H A Kuljian	1948	900	750	2	125	CE	12.6	7.2	25.0	110.1	Ro	M	V	T	D	P	C			TT	R											
Texas Co.	Westville, N. J.	Jackson & Moreland	1948	900	750	3	375	FW	22.3	11.9	32.0	79.2	Ro	M	D	M	D	O, G	C, O	....	....	TM, IT	S	7.5	3600	GE	150	2	A					
																								7.5	3600	WH	1.5	2	A	7.5	2	AsCu	625	15.0
U S Navy Yard	Pensacola, Fla.	H A Kuljian	1949	900	800	4	125	....	12.8	7.2	25.0	18.0	Ts	TM, IT	V	TM, IT	D	P, O, G	C	13.5	2250	TDu		7.5	3600	WH	1.5	2	A	7.5	2	AsCu	500	30.0
																						TM, IT	R	30.0	3600	....	1.0	2	A	30.0	2	AlBr		
Penna Salt Mfg Co.	Wyandotte, Mich.	Ford, Bacon & Davis	10-46	875	825	1	225	CE	....	15.4	17.5	69.6	Ts	M	V	M	D	P	C	12.4	2000													
			12-48	875	825	1	250	CE	....	17.4	19.4	69.3	Ts	M	V	M	D	P	C	12.4	2000	TM, IT	R	9.4	3600	WE	4.5	2	A	8.5	2	AsCu	910	46.9
Longview Fibre Co.	Longview, Wash.	R C Powell	1-49	850	750	1	250	BW	17.0	....	37.4	90.1	Ts	M, T	V	T	Mp	V	O	C, W	18.4		TM, IT	R	9.4	3600	WE	1.0	2	A					
Chase Brass & Copper Co.	Waterville, Conn.		1-49	825	825	1	150	RB	36.8	10.6	10.1	80.0	Ts	M, T	V	T	D	P	C	14.0	2400	TM, IT	....	6	3600	GE	190	0	A				265	29.0
Longview Fibre Co.	Longview, Wash.	R C Powell	11-48	850	750	1	150	CE	18.4	....	....	....	....	....	....	....	....	....	....	....	....	TM, IT	R										265	12.5
General Aniline & Film	Hawesmer, N. Y.	Baker & Spencer	1-49	765	700	2	165	CE	13.7	....	....	75.0	Ts	M, T	D	M, T	D	P	C	16.2	2650	TM, IT	R	10.0	3600	GE	1.5	1	A	5.0	2	PAd	365	25.0
Oxford Paper Co.	Rumford, Me.	C. T. Main.	1-48	750	745	1	250	CE	20.7	10.3	12.8	99.3	Ts	M	V	M	D	P	C	13.0	2200	TM, IT	R										315	
		H. S. Ferguson.	1-48	750	725	1	250	CE	17.6	....	....	....	....	....	....	....	....	....	....	....	....	TM, IT	S	7.5	3600	GE	150	0	A	....	....	....	800	15.0
Monsanto Chemical Co.	Springfield, Mass.		1947	700	750	1	200	FW	6.0	4.4	27.8	....	....	....	....	....	....	....	....	....	....	TM, IT	R										200	
Northern Paper Mills	Green Bay, Wis.			700	650	1	100	BW	9.7	5.9	22.0	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	100	
Textile Machine Wks.	Wyomissing, Penna.		1949	700	650	3	75	BW	6.9	3.9	22.0	....	Ts	TM	D, V	Mp, IT	S, D	P, O	C, O	12.5	....	TM, IT	S, R	....	....	....	....	....	....	....	....	....	220	
600 TO 699 PSI																																		
Norton Co.	Worcester, Mass.	Bill & Warrington	6-48	690	750	1	80	RB	15.1	3.2	18.9	75.0	Ro	M	S, V	M	S, D	P	C	13.6-13.9	2750-2950	GM, IT	....	2.5	3600	GE	3.0	1	A	....	....	.....	220	3.0
						2	50	RB	11.3	3.2	25.0	75.0	Ro	M	S, V	M	S, D	P	C	13.6-13.9	2750-2950			0.3	3600	AC	3.0	1	A					
Standard Oil Co of N. J.	Linden, N. J.	Standard Oil Development	1-50	685	750	1	350	BW	23.7	15.3	18.7	93.0	Ts	M	V	T	S	O, G[4]	C	18.0		TM, IT	R	7.5	3600	WE	1.0	1	A	10.0	2	Ad	1,250	57.5
R J Reynolds	Winston-Salem, N. C.	J E Sirrine	12-48	675	750	1	250	CE	15.6	....	18.7	75.0	Ts	M	V	M	D	P	C	14.0	2150												500	
River Raisin Paper Co.	Monroe, Mich.	Cummins & Barnard	1-48	675	750	1	150	WI	19.5	....	22.3	....	....	....	....	....	....	....	....	....	....	TM, IT	R	7.5	3600	WH	30	1	A	....	....	....	300	
Tide Water Assoc Oil Co.	Bayonne, N. J.		1-48	650	750	1	150	BW	11.2	6.5	22.0	90.0	Ts	M	S, D	T	S	O, G	C	18.0	....	TM, IT	S, R	3.4	3600	GE	150	0	A	....	....	....	700	10.0
Elliott Co.	Jeannette, Penna.		1-49	650	825	2	90	BW	9.8	3.9	25.0	75.0	Ts	M	D	M	D	S[5]	C	13.7	....	TM, IT	R										180	10.0
Hamersley Mfg Co.	Garfield, N. J.		2-48	650	700	2	80	BW	7.6	3.1	25.0	75.0	Ts	M	D	M	D	O, P	C, O	18.3	....	TM, IT	R										160	
			10-48																					2.5	3600	GE	25	0	A					
Lederle Laboratories	Pearl River, N. Y.		1-48	650	750	1	90	RB	11.9	4.3	21.1	75.0	Ts	TM, IT	S, D, V	T	S, V	S[6](100)	C, CA, O	12.7	2500	TM, IT	R										150	
Monsanto Chemical Co.	Monsanto, Ill.		1-48	650	750	2	180	BW	13.5	5.0	28.0	75.0	Ts	M, T	D	T	S	TG(312)	C	11.0	2060	TT	S										360	10.0
Shell Oil Co. Inc.	Dow Park, Texas		1-48	650	750	4	250	BW	20.7	12.2	29.1	75.0	Ts	M, T	D	T	D	O, G	C			GM, IT	R	30.0	3600	AC	200	0	A				1,000	30.0
Spring Cotton Mills	Grace, S. C.	Robert & Co.	1-48	650	750	2	150	BW	10.7	9.0	21.6	75.0	Ts	M	D	M	D	P	C, O	13.9	2400	TM, IT	R	15.0	3600	WE	....	2	A	32.5	2	AdBr	300	15.0
Consolidated Paper Co.	Shawinigan Falls, Que.	H G Acres.	1-49	650	750	1	150	CE	....	....	....	75.0	Ts	M	V	M	Hy	P	C	13.0	2200	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Consolidated Paper Co.	Three Rivers, Que.	H G Acres.	1-49	650	750	1	150	CE	....	....	....	75.0	Ts	M	V	M	Hy	P	C	13.0	2200	....	....	....	....	....	....	....	....	....	....	....	....	....	....
U S Industrial Chemicals	Baltimore, Md.	Burns & Roe.	6-50	650	700	1	350	CE	28.5	25.8	14.7	75.0	Ts	T	S	T	S	P	C, O	12.7	1950	TT	S										460	14.0
Ecusta Paper Corp.	Pisgah Forest, N. C.	C T Main.	1-49	625	750	3	85	RB	9.8	....	....	75.0	Ts	M	V	M	D	P	C	14.0	2600	TM, IT	R	3.0	3600	GE	2.0	1	A				298	11.0
																								4.0	3600	GE	3.0	1	A					
Esso Standard Oil Co.	Baltimore, Md.	Standard Oil Development Co.	5-48	625	750																			4.0	3600	We	1.0	1	A	4.0	2	Ad		
Gardner-Richardson Co.	Middletown, Ohio		1948	625	750	1	110	CE	14.5	7.4	20.0	75.0	Ts	M	V	M	D, Hy	P	C	12.5	2100	TM, IT	R	4.0	3600	GE	55	0	A				220	6.0
General Electric Co.	Erie, Penna.		11-48	625	825	1	150	CE	12.4	5.6	28.6	75.0	Ts	M	V	M	D, D	S6(302)	C	13.4	1950	M	R										300	
Ohio Oil Co.	Robinson, Ill.	A G McKee	11-48	625	750	2	150	CE	13.2	8.5	25.0	75.0	Ts	M, Mp	D	M, Mp	D	P	C, O, G	10.8	2000	TDu, TM, IT	S	8.0	3600	12	1.0	1	A	4.75	3	Ad	350	10.0
Sherwin-Williams Co.	Chicago, Ill.	Schmidt, Gardner & Erickson	1-48	700	700	3	75	BM	7.8	3.2	30.2	75.0	Ts	T	S, D	T	S, D	TG(302)	C	12.5	....	TM, IT	S, R											
Ansco Film Div.	Binghamton, N. Y.	Baker & Spencer	1-47	650	750	3	50	CE	5.5	2.6	24.0	75.0	Ts	M	V	M	V	TG(300)	CA, O	12.0	....	TM, IT	R	6.0	3600	GE	0.5	1	A				150	6.0
																								6.0	3600	GE	0.5	1	A					
Carbide & Carbon Chem Corp.	Texas City, Texas.	Ford, Bacon & Davis	1-49	650	700	4	156	BW				75.0	Ts	T	D	T	D	O	C	0.98		ST	R	11.5	3600	GE	85	1	A				1,100	32.0
Cora Products Refining Co.	Argo, Ill.	Sargent & Lundy	1-49	650	750	3	250	BW	23.5	10.4	19.1	75.0	Ts	M	D	M	D	P, Ma	C	11.8	1950	TT	S, R	15.0	3600	AC	20	1	A				1,584	39.0
El Paso Natural Gas Co.	Oil Center, N. Mex.		12-47	600	750	3	75	BW	5.9	....	23.2	75.0	Ts	T	S	T	S	O	C	1.09		TM, IT	R	3.0	3600	We	1.0	1	A				225	3.0
Glatfelter Co.	Spring Grove, Penna.	H M Wilson	1-48	600	648	1	115	RB	13.9	6.3	18.4	75.0	Ts	M	V	M	S, D	P	C	13.8	2150	TT	R	6.0	3600	WE	3.0	0	A	6.5	2	Ad	105	15.0
																								4.0	3600	WE	4.5	1	A					
Procter & Gamble Mfg.	Kansas City, Kan.	H K Ferguson	9-48	650	650	2	58	BW	7.0	1.3	44.8	75.0	Ts	T	D	T	D	O, O	C	1.09		ST	S	3.0	3600	GE	150	0	A				224	3.8
S D Warren Co.	Cumberland Mills, Me.	Bill & Warrington	1-49	650	750	1	150	CE	13.4	13.0	23.6	75.0	Ts	M	V	M	V	P	CA	11.9	1800	ST	....	4.0	3600	GE	165	0	A				400	12.0
West Virginia Pulp & Paper	Covington, Va.		1949	650	750	1	250	FW	20.2	16.1	23.6	75.0	Ts	M	S	T	S, D	S6(316)	C	12.5	2300	....	....	4.0	3600	WE	1.0	2	A	13.0	2	Ad	1,200	47.5
	Meehanicville, N. Y.		1948	650	750	1	150	FW	15.3	13.4	24.1	75.0	Ts	M	S	M	Hy	P	CA	11.9	2000	....	....	7.5	3600	WE	1.0	2	A				450	15.0
	Williamsburg, Penna.		1947	650	750																			7.5	3600	WE	1.0	2	A	7.0	2	Ad		
Weyerhaeuser Timber Co.	Springfield, Oregon	United Engineers	1-48	650	675	3	85	BW	13.5	6.4	21.0	75.0	Ts	M	D	M	D	H[7], O	W, O	4.5	....	TM, IT	R	9.0	3600	WE	1.0	1	A	4.8	4	Ad	120	10.0
																								7.5	3600	WE	1.0	1	A	7.9				
																								5.0	3600	WE	150	1	A	6.3				
E I Du Pont de Nemours	Orange, Texas		10-47	560	750	2	150	BW	14.3	7.4	30.4	75.0	Ts	T	S, V	T	S	O	C	1.09														
			10-48	560	750	1	150	BW	14.3	7.4	30.4	75.0	Ts	T	S, V	T	S	O	C	1.09		ST	S	10.0	3600	GE	30	1	A					15.0
Halifax Paper Co. Inc.	Roanoke Rapids, N. C.	J E Sirrine	1-48	550	725	1	150	CE	18.0	....	18.7	75.0	Ts	M	D	M	Hy	BL	BL	6.5		TM, IT	R											
Ohio Boxboard Co.	Rittman, Ohio	H M Wilson	7-48	500	668	1	120	BW	14.5	5.2	23.7	75.0	Ts	M	D	M	D	TG(323)	C	10.2	2100	T	S	6.0	3600	GE	1.0	1	A	6.5	2	Ad	240	15.0
400 TO 499 PSI																																		
Westinghouse Elec Corp.	Mansfield, Ohio		10-47	465	650	1	70	BW	6.7	....	....	....	....	....	....	....	....	UF(204)	C	12-13.0	2300-2500	....	....	....	....	....	....	....	....	....	....	....	190	0.5
Bakelite Corp.	Bound Brook, N. J.	Francisco & Jacobus	9-47	450	650	1	140	AW	16.0	5.3	30.0	75.0	Ts	T	V	MT	S	UF(267)	C	13.7	2600	T	S											
Capital City Prod Co.	Columbus, Ohio	A M Kinney	1-48	450	841	3	47	BW	....	2.1	30.0	....	....	T	D	T	S	S5(99)	C	12.0	2200	ST	S										270	
Clemson Agric College	Clemson, S. C.		1-48	450	850	1	50	CE	10.3	1.6	25.3	75.0	Ts	M	D	M	S	O	C			TT	R	0.1	1800	GE	3.0	1	A				2,000	
Downington Paper Co.	Downington, Penna.	A C Wood	1-49	450	700	2	120	BW	10.3	4.8	25.0	75.0	Ts	M	D	M	S	P	C, O	11.4	2700	TM, IT	R										295	0.4
Emery Industries, Inc.	Cincinnati, Ohio	Wm Carlton & Assoc.	1948	450	650	1	125	BW	10.6	7.5	25.0	75.0	Ts	M	V	M	Hy	P	C, O	11.4	2700	TM, IT	S										295	0.4
Gaylord Container Corp.	Bogalusa, La.		1949	450	710	1	100	CE				75.0	Ts	T				BL	BL														235	0.2
Great Lakes Paper Co. Ltd.	Fort William, Ontario	Stadler-Hunter Co.	6-48	450	850	1	150	CE	12.1	6.0	32.0	75.0	Ts	M	V	M	Hy	P	C	11.6-12.9	2000												1,100	40.0
Hudson Pulp & Paper Corp.	Augusta, Me.		10-47	450	750	1	150	BW	14.1	7.5	30.4	75.0	Ts	M	D, V	M	D	O	C	17.0													150	9.0
Huron Milling Co.	Harbor Beach, Mich.		9-48	450	800	1	75	WI	9.0	3.3	23.2	75.0	Ts	M	V	M	D	S5(178)	C	13.5	2450	TM, IT	R	1.5	3600	GE	150	0	A				150	
Keystone Steel & Wire Co.	Bo Hartonville, Ill.		10-48	450	750	1	150	CE	14.3	9.9	25.0	75.0	Ts	M	D	M	D	S5(440)	C	10.0	....	Em, IT	S, R										330	3.8
			1-49																												480	5.8
Merck & Co. Inc.	Rahway, N. J.	Lockwood Greene	10-48	450	650	1	80	FM	13.8	3.1	30.3	75.0	Ts	T	S	T	S	UF(209)	C	14.5	2560	TT	....	10.0	3600	GE	1.0	1	A	10.0	2	.....	390	20.8
Minnesota & Ontario Paper Co.	International Falls, Minn.		1-49	450	650	1	50	B		2.8	30.0	....	....	T	D	M	S, D	W	W	8.0		TM	R	2.5	3600	GE	1.0	2	A	0.5	2	Ad	200	0.4
Ontario Pulp Mills Co.	Montreal, Que.		11-48	450	660	2	90	BWO	5.0	1.3	30.0	75.0	Ts	M	D	M	D	TG	C, O	13.0	2100	ST, IT	R	2.0	1800	Wo	1.0	2	A	1.0	1	SI	700	25.0
																																	60	3.0

A —Air cooled
AdBr —Admiralty brass
AlBr —Aluminum brass
AC —Allis-Chalmers Mfg Co
AsCu —Arsenical copper
Ad —Admiralty
AJ —Ames Iron Works
B —J P Badenhausen
Bl —Blaw-Knox Co
BL —Black liquor
BW —Babcock & Wilcox Co
BWO —Babcock-Wilcox & Goldie-McCulloch Ltd
C —Coal, bituminous
CA —Coal, anthracite
CE —Combustion Engineering Co
Cu Ni —Copper nickel
D —Damper
DB —Dry bottom
Du —Duplex pump
EC —Erie City Iron Works
El —Elliott Co
EM —Edge Moor Iron Works
FW —Foster Wheeler Corp
G —Gas
GE —General Electric Co
H —Hydrogen cooled
HB —Heilman Boiler Works
HF —Heated fuel
Hy —Hydraulic coupling
K —Motor drive
Ma —Magnetic coupling
WI —Murray Iron Works Co
Mp —Two motors per fan
MT —One motor, one turbine
O —Oil
Pulverized-fuel firing
Raymond admiralty
Ro —Rotator
Regenerative
Riley Stoker Corp
Rotary sectional
Spreader stoker
ST —Stag tan
T —Turbine drive
Ts —Terry Steam Turbine Co
TG —Traveling-grate stoker
TT —Titusville Iron Works Div
Tu —Tubular
UF —Underfeed stoker
UI —Union Iron Works
V —Vane control
Ve —Henry Vogt Machine Co
W —Wood
WB —Wm Bros Boiler & Mfg Co
WE —Westinghouse Electric Corp
WI —Wickes Boiler Co
Wo —Worthington Pump & Machy
[1]—Heat release in cyclone furnace only
[2]—Pressurized furnace
[3]—Cyclone burners, 2 per boiler
[4]—Also acid sludges, soda tar
[5]—Meter for one unit, others as described
[6]—Tar also burned
[7]—Coke breeze
[8]—Btu per cu ft
(150)—Stoker grate area, sq ft