PLAINTIFF'S EXHIBIT

RS-195

Year

Building a more powerful America

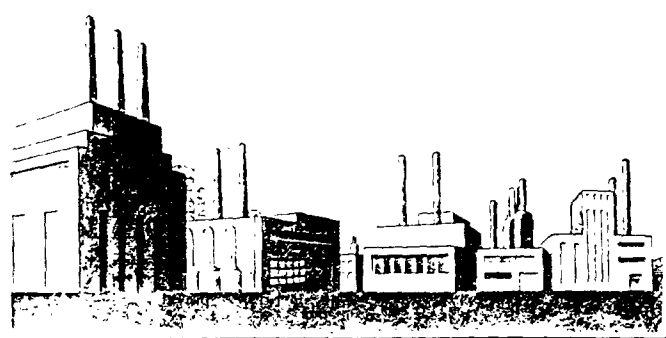
POWER

DECEMBER 1957

ONE DOLLAR

A McGRAW-HILL PUBLICATION

The new . . . MODERN PLANT SURVEY



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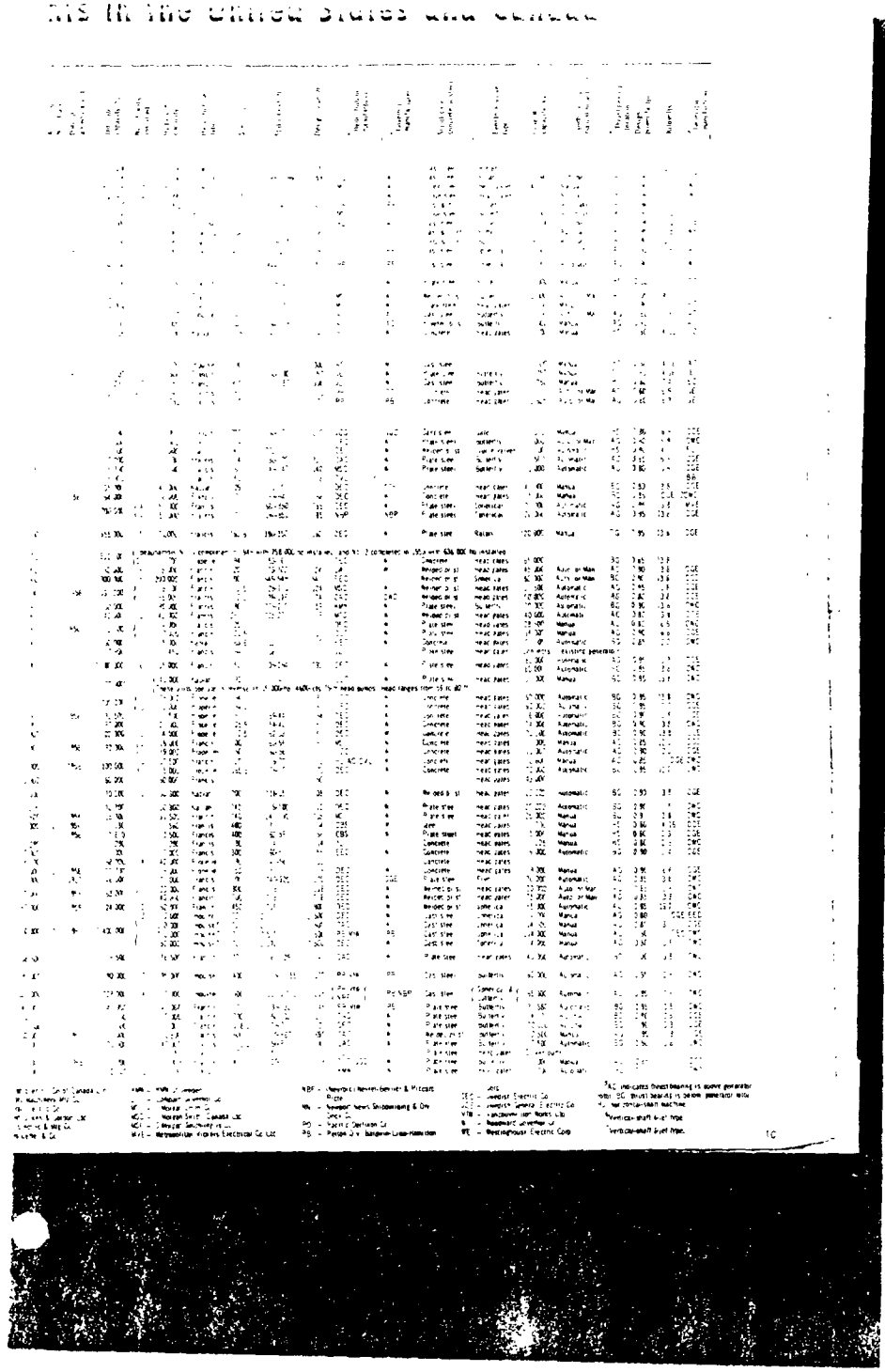
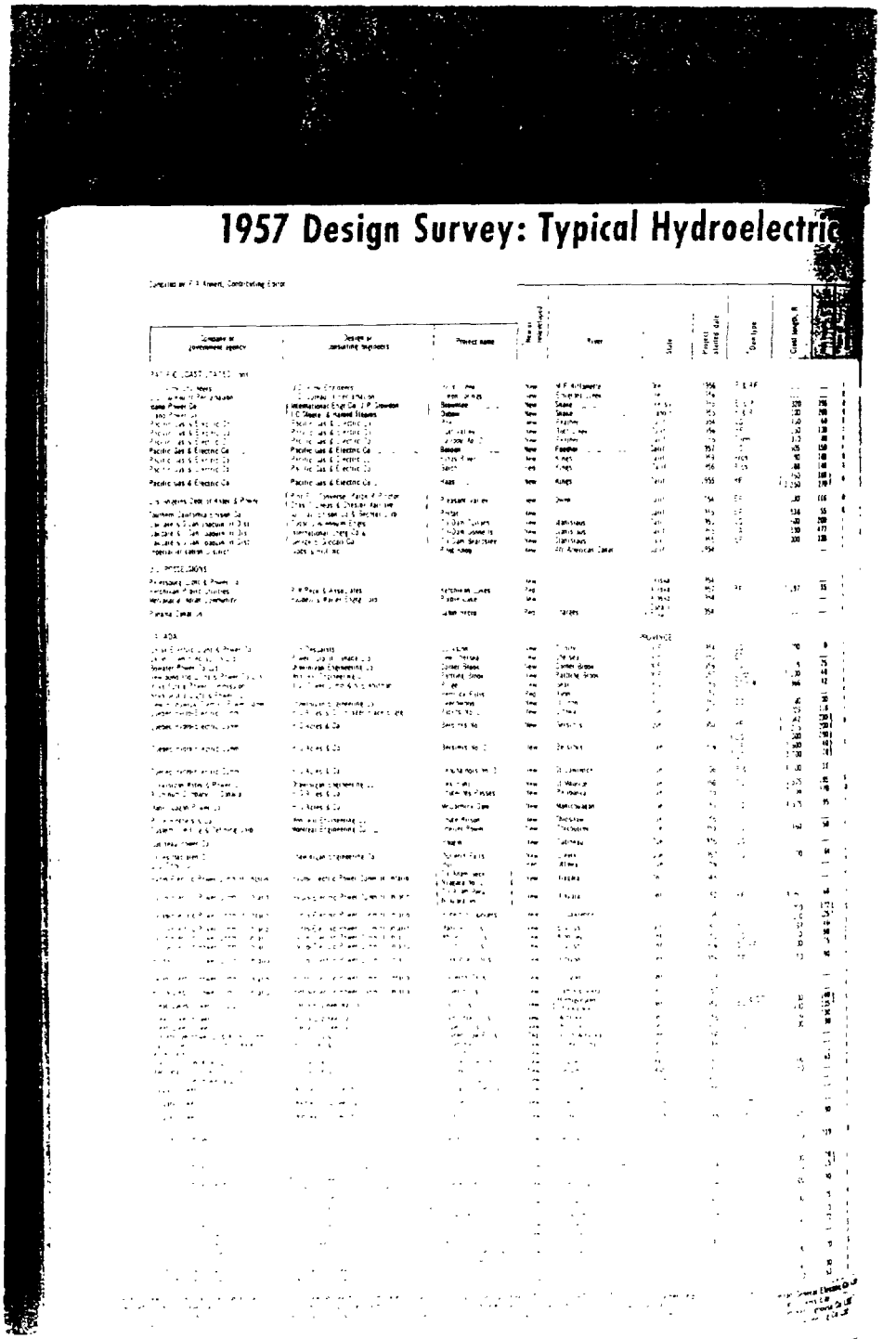


1957 Design Survey: Typical Hydroelectric



1957 Design Survey: Typical Hydroelectric

Compiled by F. A. Annese, Contributing Editor

Company or government agency	Name of consulting engineers	Project name	State	River	Dam	Project power (kw)	Type	Crest length (ft)	Max height (ft)
NEW ENGLAND STATES									
Central Maine Power Co	Central Maine Power Co	Wyman No. 3	Maine	Kennebec	Earth	20,000		1,200	110
St. Croix Paper Co	Stone & Webster Inc	Woodland	Maine	St. Croix	Earth	4,000		1,000	30
Central Vermont Public Service Corp	Central Vermont Public Service Corp	Wilder No. 3A	Vermont	Connecticut	Powerhouse	15,000		750	38
Northern Berkshire Industries									
Consolidated Water Power Co	Stone & Webster Inc; Consolidated Water Power Co	Dewolf No. 3	Massachusetts	Connecticut	Earth	14,000	Steel	1,200	60
Consolidated Water Power Co	Stone & Webster Inc; Consolidated Water Power Co	Dewolf No. 4	Massachusetts	Connecticut	Earth	14,000	Steel	1,200	60
Consolidated Water Power Co	Stone & Webster Inc; Consolidated Water Power Co	Dewolf No. 5	Massachusetts	Connecticut	Earth	14,000	Steel	1,200	60
Consolidated Water Power Co	Stone & Webster Inc; Consolidated Water Power Co	Dewolf No. 6	Massachusetts	Connecticut	Earth	14,000	Steel	1,200	60
Consolidated Water Power Co	Stone & Webster Inc; Consolidated Water Power Co	Dewolf No. 7	Massachusetts	Connecticut	Earth	14,000	Steel	1,200	60
Consolidated Water Power Co	Stone & Webster Inc; Consolidated Water Power Co	Dewolf No. 8	Massachusetts	Connecticut	Earth	14,000	Steel	1,200	60
Consolidated Water Power Co	Stone & Webster Inc; Consolidated Water Power Co	Dewolf No. 9	Massachusetts	Connecticut	Earth	14,000	Steel	1,200	60
Consolidated Water Power Co	Stone & Webster Inc; Consolidated Water Power Co	Dewolf No. 10	Massachusetts	Connecticut	Earth	14,000	Steel	1,200	60
American Hydro Power Corp		Hydroelectric	Massachusetts	Connecticut	Earth	14,000	Steel	1,200	60
Holyoke Power Co		Holyoke	Massachusetts	Connecticut	Earth	14,000	Steel	1,200	60
MIDDLE ATLANTIC STATES									
Pennsylvania Power & Light Co	Pennsylvania Power & Light Co	Holtwood Station	Pennsylvania	Susquehanna	Earth	14,000	Steel	1,200	60
Niagara Mohawk Power Corp	Niagara Mohawk Power Corp	Niagara Falls	New York	Niagara

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 & waterwall	BOILERS: Surface, 1000 sq ft: Superheater	BOILERS: Surface, 1000 sq ft: Reheater	BOILERS: Surface, 1000 sq ft: Economizer
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	Mill Creek	Fluor Corporation	2	4-58	1800	1000	1000	1*	475	CE	13.2	31.4		6.3
	Irvine, Ariz	Kyrene	Bechtel Corporation	1	6-59	1800	1000	1000	1*	575	CE	14.1	–		–
Central Illinois Light Co	Champaign, Ill	Highview	Fluor Corporation	4	–	1250	950	–	1	425	CE	16.7	12.1		–
	Peoria, Ill	La Marsh	Commonwealth Associates, Inc	1	6-60	1800	1000	1000	1	950	RS	46.6	43.0		45.1
Central Power & Light Co	Corpus Christi, Texas														
Connecticut Light & Power Co	Devon, Conn	Devon	Sargent & Lundy	3	4-59	1800	1000	1000	1*	1100	BW	13.0	58.9		13.1
			United Engineers & Constructors	8	9-58	1800	1000	1000	1*	900	CE	21.0	68.5		31.3
Dallas Power & Light Co	Dallas, Texas	North Lake	Ebasco Services, Inc	1	1-60	1800	1000	1000	1*	1250	RS	40.8	53.0		41.0
				2	1-61	1800	1000	1000	1*	1200					
Delaware Power & Light Co	Indian River, Del	Indian River	United Engineers & Constructors	2	1959	1400	1000	1000	1	925	BW	17.1	33.9		21.8
	Wilmington, Del		C.F. Braun & Co		3-56	1300	950	–	3	500	RS	34.7	24.5		–
Florida Power Corporation	St. Petersburg, Fla	Higgins	Black & Veatch												
Georgia Power Co	Rincon, Ga	Georgia Power	Black & Veatch	2	11-60	1800	1000	1000	1	900	CE	15.1	60.1		16.5
Gulf Power Co	Brunswick, Ga	McManus	Southern Services, Inc	4	5-57	1350	1000	1000	1	600	RS	21.1	35.0		16.5
	Pensacola, Fla	Lynn	Southern Services, Inc	2	5-59	1800	1000	1000	1	570	FW	9.1	–		–
Houston Power & Light Co	Houston, Texas	Deepwater	Stone & Webster Engrg Corp	4	5-59	1800	1000	1000	1	542	CE	14.1	48.8		7.7
	Pasadena, Texas	Bayport	Ebasco Services, Inc	4	5-59	1800	1000	1000	1*	800	FW	13.2	14.0		24.4
				1	3-61	1900	1000	1000	1*	1020	RS	34.8	43.7		55.2
Kansas Power & Light Co	Lawrence, Kan	Lawrence	Black & Veatch												
Long Island Lighting Co	Port Jefferson, N.Y.	Port Jefferson	Ebasco Services, Inc	3	6-59	1800	1000	1000	1*	842	CE	15.9	58.7		15.6
	Holtsville, N.Y.	E. Edward F. Barrett	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
Louisiana Power & Light Co				6*	4-57	1800	1000	1000	1*	1550	RS	50.0	71.2		62.7
			Pioneer Service & Engrg Co	3	4-58	1800	1000	1000	1	950	FW	29.9	15.8		48.2
Mississippi Power Co	Hattiesburg, 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	800	CE	13.3	51.0		13.1
Northern States Power Co	St. Paul, Minn	High Bridge	Pioneer Service & Engrg Co	6	5-59	1800	1000	1000	1	1200	BW	24.9	76.2		45.4
				6	5-59	1800	1000	1000	1	1200	FW	27.7	22.8		59.6
Public Service Co. of Indiana, Inc	New Albany, Ind	New Albany	Sargent & Lundy	2	10-58	1900	1000	1000	1	1000	RS	59.9	54.7		60.4
				3	11-60	1500	1000	1000	1	1000	RS	59.9	54.7		60.4
				4	10-60	1300	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	14.0	54.0		8.4
Texas Power & Light Co	Mckinney County, Texas	Lake Creek	Pioneer Service and	2	3-59	1800	1000	1000	1*	1600	FW	36.4	21.4		59.7
Texas Power & Light Co	Rosebud, Ill	Rosebud	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	Pleasantville, N.J.	Deepwater	Turbo & 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		37.2
				2*	12-57	1450	1000	1000	1*	1000	BW	15.8	98.5		16.8
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												
Iowa Public Service Co	Waterloo, Iowa	Maynard	Ebasco Services, Inc	2	10-58	1450	1000	1000	1*	630	CE	12.5	33.9		8.7
Kentucky Utilities Co	Central City, Ky	Green River	Sargent & Lundy	2	10-58	1450	1000	–	1*	460	RS	32.6	27.7		0
Minnesota Power & Light Co	Duluth, Minn	Clay Boswell	Ebasco Services, Inc	4	7-59	1450	1000	1000	1*	750	BW	16.9	37.4		26.9
Otter Tail Power Co	Fergus Falls, Minn	Hoot Lake	Quinn & Moe, Inc	2	9-59	1450	1000	1000	1*	500	RS	16.6	30.1		25.7
				2	9-59	1450	1000	1000	1	420	CE	8.4	–		–
El Paso Electric Co	El Paso, Texas	Rio Grande	Stone & Webster Engrg Corp	2	6-58	1450	1000	1000	1	350	BW	8.7	10.8		4.6
Florida Power & Light Co	Cutler, Fla	Dave Johnston	Ebasco Services, Inc	1	10-58	1450	1000	1000	1*	750	BW	12.7			
Pacific Power & Light Co	Kilgore, Wyo	W. Paul Smith	Commission and Power	4	9-58	1450	1000	1000	1	600	CE	9.9	16.8		8.3
Public Service Co. of Colorado	Denver, Colo	Cherokee	Ebasco Services, Inc	1	7-57	1450	1000	1000	1**	850	BW	28.9	46.2		27.9
	Canon, Colo	Canon	Stearns-Roger Mfg Co	2	4-59	1450	1000	1000	1**	852	BW	36.4	38.7		20.6
				1	7-57	1450	950	900	–	715	BW	17.5	8.9		0
Southwestern Gas & Electric Co	Mooringsport, La	Lieberman	Sargent & Lundy	4	5-59	1450	1000	1000	1*	725	CE	23.0	32.7		10.4
Southwestern Public Service Co	Amarillo, Texas	Station B		1	6-60	1450	1000	1000	1**	800	CE	–	–		–
Texas Electric Co	Fort Worth, Texas	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*	525	CE	13.6	19.8		5.0
Upper Peninsula Power Co	Houghton, Mich	Houghton Station	Sargent & Lundy												
Utah Power & Light Co	Castle Gate, Utah	Carbon	Gibbs & Hill, Inc	1*	9-57	1450	1000	1000	1**	575	BW	12.1	36.8		10.9
	Price, Utah	Price River	General Corp	2	1-57	1450	1000	1000	1	565	CE	37.2	47.9		10.2
Virginia Electric & Power Co	Portsmouth, Va	Clifford Kiser	Sargent & Lundy	3	5-59	1450	1000	1000	1*	350	BW	8.6	13.5		6.5
Wisconsin Power & Light Co	Cassville, Wis	Cassville	Sargent & Lundy	1*	5-59	450	900	–	1*	300	FW	25.3	4.2		0
Wisconsin Public Service Corp	Weston, Wis	Weston	Gilbert Associates, Inc	1	1-58	1700	900								
Alaska Electric Light & Power Co	Juneau, Alaska	Deepwater	Fluor & Hill, Inc	2	1957	1775	750		1*	550	CE	9.6	11.0		0
Hawaiian Electric Co., Ltd	Honolulu, Hawaii	Honolulu		3	1957	1250	750		1	185	BW	7.5	18.3		0
Kauai Electric Co	Lihue, Hawaii	Kapaa	Dillingham Corp	2	1957	1250	750		1	185	BW	7.5	18.3		0
Mississippi Power Co	Gulfport, Miss	Watson	Stone & Webster Engrg Corp	1	1960	1450	1000	1000	1*	650	BW	8.5	–		0
Public Service Co. of New Mexico	Albuquerque, N.M.	Reeves	Burns & McDonnell Engr Co	2	1960	1450	950	950	1*	650	FW	8.5	–		0
Southern California Edison Co	Long Beach, Calif	Long Beach	Combustion Engineering Inc	1	10-58	1250	950	950	1*	475	FW	4.1	4.2		0
	Redondo Beach, Calif	Redondo	Combustion Engineering Inc	3	12-59	1250	950	950	1	470	FW	17.9	14.5		0
Texas Electric Service Co	Fort Worth, Texas	Handley	Burns & McDonnell Engr Co	1	9-58	1450	1000	1000	1*	625	Riley	33.4	38.7		0
Central Power & Light Co	Rates, Texas	F.L. Hayes	Sargent & Lundy	1	1-59	1450	1000	1000	1*	450	BW	32.5	15.8		0

Boston Edison Co	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
California Electric Power Co	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Central Illinois Light Co	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Central Power & Light Co	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Connecticut Light & Power Co	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Dallas Power & Light Co	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Delaware Power & Light Co	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Florida Power Corporation	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Georgia Power Co	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Gulf Power Co	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Houston Power & Light Co	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Kansas Power & Light Co	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Long Island Lighting Co	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Louisiana Power & Light Co	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Mississippi Power Co	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Montaup Electric Co	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Northern States Power Co	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Public Service Co. of Indiana, Inc	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Rochester Gas & Electric Corp	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Texas Power & Light Co	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Texas Power & Light Co	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Savannah Electric & Power Co	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Atlantic City Electric Co	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Central Louisiana Electric Co., Inc	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Columbus & Southern Ohio Electric Co	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Florida Power & Light Co	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Iowa Power & Light Co	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Iowa Public Service Co	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Kentucky Utilities Co	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Minnesota Power & Light Co	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Otter Tail Power Co	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
El Paso Electric Co	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Florida Power & Light Co	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Pacific Power & Light Co	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Public Service Co. of Colorado	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Southwestern Gas & Electric Co	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Southwestern Public Service Co	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Texas Electric Co	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Tucson Gas, Electric Light & Power Co	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Upper Peninsula Power Co	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Utah Power & Light Co	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Virginia Electric & Power Co	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Wisconsin Power & Light Co	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Wisconsin Public Service Corp	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Alaska Electric Light & Power Co	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Hawaiian Electric Co., Ltd	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Kauai Electric Co	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Mississippi Power Co	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Public Service Co. of New Mexico	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Southern California Edison Co	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Texas Electric Service Co	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Central Power & Light Co	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000

A – Anthracite
AC – Allis-Chalmers Mfg Co
Ad – Admiralty
AdD – Admiralty D
Adl – Admiralty, Inhibited
Al – Aluminum
AlR – Aluminum Bronze
AlBr – Aluminum Brass
AlBrI – Inhibited Aluminum Brass
AsAd – Arsenical Admiralty
AsAd – Arsenical Admiralty
AsAlR – Arsenical Aluminum Bronze

AsAdI – Inhibited Arsenical Admiralty
AsCu – Arsenical Copper
B – Variable-pitch blade
BB – Brown Boveri Corp
Br – Brass
BW – Babcock & Wilcox Co
BWL – Babcock Wilcox & Goldie-McCulloch Ltd
C – Coal, bituminous
CE – Combustion Engineering Inc
CES – Combustion Engineering-Superheater Ltd

CN – Cupro-nickel
Con – Condenser operation
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 fan
MV – Metropolitan-Vickers Electrical Co Ltd
N – None
O – Oil
P – Pulverized
PA – Proportioned Admiralty

Pl – Plate
R – Regulator
Rb – Rotary drive
RS – Riley Stoker Corp
S – Speed control
SB – Silicon Bronze
SB – Springfield Boiler Co
SS – Spreader stoker
ST – Stag tail
T – Turbine drive
TG – Traveling grate stoker
Tu – Tubular

UF – Underfeed stoker
US – United Iron Works
V – Vane control
WE – Westinghouse Electric Corp
WS – Wickes Boiler Co
(B23) – Steam plate area, sq ft
r – Reversed data previously listed & SS
2 – Cross-through boiler
3 – Double reheat
4 – Hp 3600 rpm to 1800 rpm
4 – Pressured standard
6 – Evaporators furnace

– Blower coal
a – Two dynamatic main gear units
c – Common installation
hc – Half capacity
m – Hp 3600 rpm, 6, 3600 rpm
n – Units 1 and 2 listed under Appalachian Electric Power Co
ra – Heating plant
re – Regular coal burning
rs – 1800 rpm
rw – East riverside capacity
s – Driven by generator shaft

– Turbine-generator
– Reheat coal burning
– Nuclear fuel
– Electric power
– Fuel cost estimates per plant
– Reliability of plant statement
– Substation
– Gas turbine exhaust supplies boiler air
– Identical units in Cardinal
Electric power
– New boilers

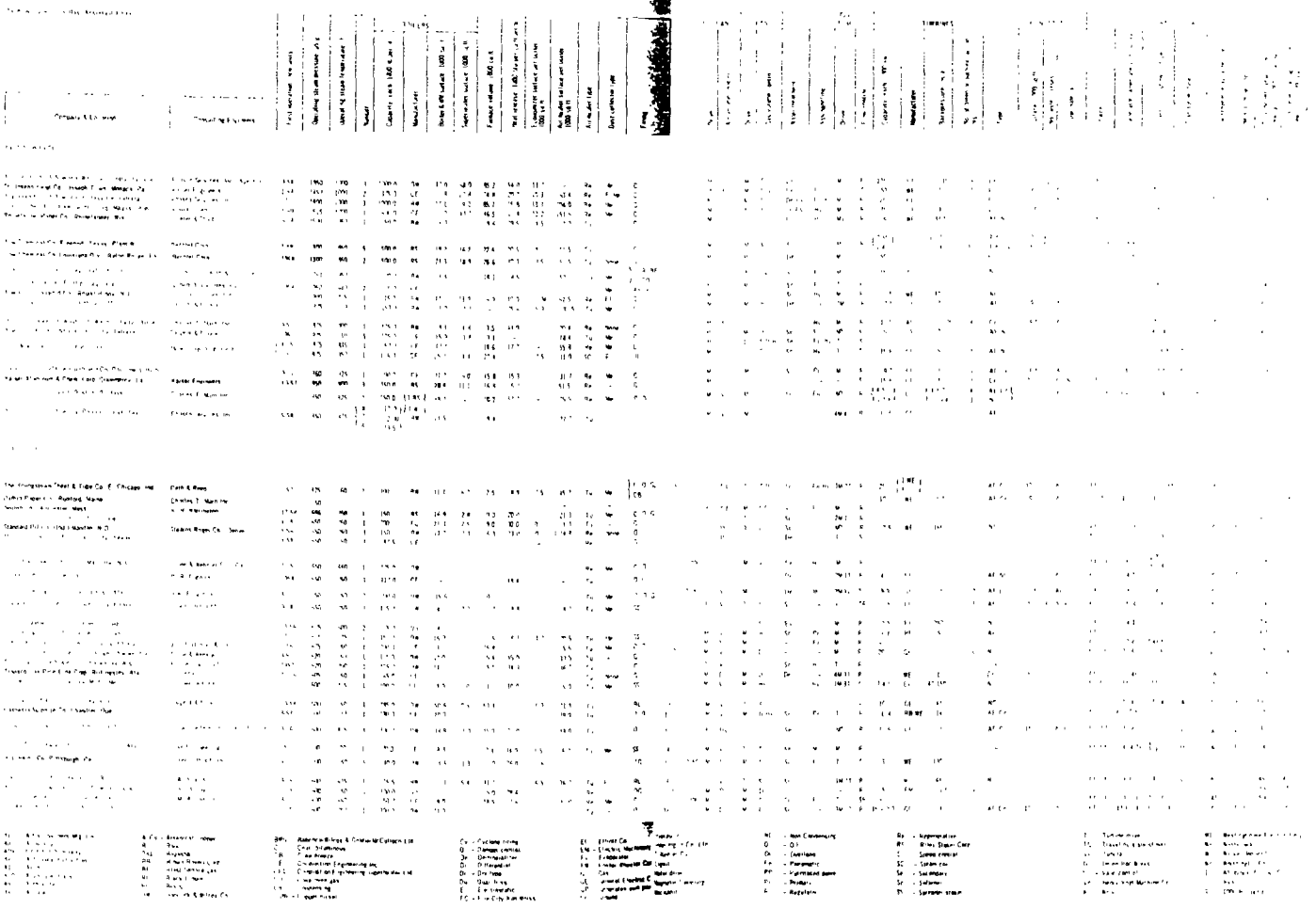
1957 Design Survey of Typical New Steam Central-Station Installations

Compiled by Alfred Iddon, Associate Editor

Company	Location	Plant name	Consulting engineers	Unit no., new units	First operation, new units	Throttle pressure, psig	Steam temp., F: Throttle	Steam temp., F: Reheat	BOILERS: Number	BOILERS: Capacity each, 1000 lb per hr	BOILERS: Manufacturer	BOILERS: Surface 1000 sq ft: Boiler & WW	BOILERS: Superheater	BOILERS: Reheater
Philadelphia Electric Co	Eddystone, Pa	Eddystone		1*	12-58	5000*	1200	1050*	1	2000	CE	72	38	108
	Chester, Pa	Chester		2*	1-60	3500	1050	1050*	1	2178	CE	68	35	103
	New Haven & Va	Delaware	Sargent & Lundy	1	7-59	3500*	1050	1050*	1*	2923	Bw	-	-	-
	Cheswold, Del	Edgemoor	American Gas & Electric Svc Corp	5	12-59	3500*	1050	1050*	1*	2923	Bw	-	-	-
			American Gas & Electric Svc Corp	3	1958	2015	1050	1050	1	1523	Sw	11.5	-	-
Consumers Power Co	Essexville, Mich	Dan Karn	Commonwealth Associates, Inc	1	7-59	2450	1050	1050	1	1250	CE	22.7	114.7	37.8
	Riverton, N.J.	Riverton	Ebasco Services Inc	2	9-60	2450	1050	1000	1	1250	Bw	-	-	-
	Muskegon, Mich	Muskegon Pt	Gibbs & Hill, Inc	3	1963	2400	1050	1000	1	950	CE	18.0	84	19.0
	Bay County, Mich	Karn-Weadock	Sargent & Lundy	4	1963	2400	1050	1000	1	1000	CE	19.5	104.6	18.4
		Weadock		5	12-58	2400	1050	1050	1	1400	CE	44.5	159.2	33.3
Detroit Edison Co	Trenton Channel, Mich	St Clair		5	4-53	2400	1050	1000	1	2100	Bw	15.5	-	-
	Detroit, Mich	Delray		6	10-60	2400	1050	1000	1	2100	CE	58.3	-	-
	Trenton, Mich	Trenton Ch		7	10-59	850	900	900	1	900	AF	5.1	4.2	N
		Allen		1	5-55	2400	1050	1000	1	1400	CE	35.9	170	31.5
				2	7-56	2400	1050	1000	1	1400	CE	35.9	170	31.5
Niagara Mohawk Power Corp	Dunkirk, N.Y.	Dunkirk		3	1959	2400	1050	1000	1	1470	CE	18.4	116.3	24.7
	Buffalo, N.Y.	Huntley		4	1959	2400	1050	1000	1	1470	CE	18.4	116.3	24.7
				5B	1968	2400	1050	1000	1	1470	CE	18.4	116.3	24.7
	Syracuse, N.Y.	Dewitt	Commonwealth Associates, Inc	7	9-60	2400	1050	2000	1	1250	FW	27.6	37.6	67.6
				8	9-61	2400	1050	1000	1	1250	FW	27.6	37.6	67.6
Pacific Gas & Electric Co	Pittsburg, Calif	Pittsburg		5	1-60	2400	1050	1050	1*	2150	Bw	-	-	-
				6	1-61	2400	1050	1000	1*	2150	Bw	-	-	-
	Antioch, Calif	Antioch	Gilbert Associates, Inc	1	1-59	2400	1050	1000	1	1250	CE	21.3	118.4	17.9
Pennsylvania Power & Light Co	New Haven, Pa	Brunner Island	Ebasco Services Inc	4	12-59	2400	1050	1050	1	1290	CE	21.3	118.4	17.9
				1	5-60	2400	1000	1000	1*	2100	CE	39.2	179	50.0
	Allentown, Pa	Allentown	Stone & Webster Engrg Corp	1	6-59	2400	1050	1000	1	1300	CE	25.4	104.7	24.3
		Talen's Mt Nebo	Gilbert Associates, Inc	1	5-58	2400	1050	1000	1	910	CE	19.1	74.2	17.2
				2	10-58	2400	1050	1000	1	910	CE	19.1	74.2	17.2
		Montour	Ramsey Corp	1	6-58	2400	1050	1000	1*	1560	Bw	12.8	114.8	30.7
				2	12-58	2400	1050	1000	1*	1560	Bw	12.8	114.8	30.7
		Martins Creek	Bechtel Corp	1	4-59	2400	1050	1000	1*	1560	Bw	12.8	114.8	30.7
				2	9-59	2400	1050	1000	1*	1560	Bw	12.8	114.8	30.7
Public Service Co of New Mexico	Bloomfield, N.M.	Four Corners		5	1959	2400	1050	1000	1	1280	FW	26.4	40.7	8.0
		Reeves		1	1958	2350	1100	1050	1*	1900	Bw	53.5	38.7	82.3
				2	1958	2350	1100	1050	1*	1900	Bw	53.5	38.7	82.3
Public Service Co of Oklahoma	Tulsa, Oklahoma	Riverside	Gilbert Associates, Inc	1	9-56	1675	1000	1000	1*	1150	Bw	11.6	-	-
		Tulsa	Sargent & Lundy	1	3-58	2070	1050	1000	1*	1150	Bw	11.6	-	-
				3	3-57	1525	1000	-	1*	485	Bw	4.5	-	-
Alabama Power Co	Burns, Ala	Barry	Southern Services, Inc	1	5-59	2000	1000	1000	1	1270	CE	33.6	104.7	30.2
		Plants Chapman	American Gas & Electric Svc Corp	1	4-58	2000	1050	1050	1*	1523	Bw	-	-	-
		Gorgas	Sargent & Lundy	2	7-58	2000	1050	1050	1*	1523	Bw	-	-	-
				3	5-62	2000	1050	1000	1	1350	CE	39.4	77.8	26.3
Commonwealth Edison Co	Chicago, Ill	Crawford	Sargent & Lundy	7	5-58	2000	1050	1050	1	1440	CE	25.5	149.8	29.2
	Romeoville, Ill	Romeoville	Sargent & Lundy	2	6-58	2000	1050	1000	1	2050	LE	36.6	210.3	40.5
	Joliet, Ill	Joliet	Sargent & Lundy	19	12-58	2000	1050	1000	1	2700	CE	47.0	210.3	40.5
	Chicago, Ill	Fisk	Sargent & Lundy	6	5-59	2000	1250	1000	1*	1290	Rw	53.9	162.4	107.8
		Collins	Sargent & Lundy	4	11-62	2300	950	-	1*	650	Rw	23.8	25.9	N
Consolidated Edison Co of New York	Yonkers, N.Y.	Yonkers Waste Heat Recovery	United Engineers & Constructors	1	10-53	2400	1000	1000	1	1150	CE-	13.4	57.6	20.2
	New York, N.Y.	Astoria		1	1961	2400	1050	1000	1	2500	CE	50.0	160	38.0
				2	1-58	2400	1050	1000	1*	1550	CF	25.3	97.2	30.0
				3	7-60	2400	1050	1000	1*	1550	CF	25.3	97.2	30.0
				4	1-61	2400	1050	1000	1*	1550	CF-	25.3	97.2	30.0
				5	9-58	1250	950		1*	650	RS	23.8	25.9	N
				3	1961	2000	1000	1000	1*	1950	FW-	14.6	30.8	58.8
Consumers Power Co	Jackson, Mich	Jackson	Sargent & Lundy	1	5-59	2000	1050	1050	1	1350	CF-	39.4	79.7	26.8
Oklahoma Gas & Electric Co	Oklahoma City, Okla	Mustang	Ebasco Services Inc	1	3-57	2400	1000	1000	1*	1540	Rw	-	-	-
		Seminole	Sargent & Lundy	1	5-59	2400	1050	1000	1	1540	Rw-	34.3	95.9	73.2
		Horseshoe	Public Service Co of Okla	1	7-60	2400	1000	1000	1*	940	Rw-	-	-	-
		Enid	Ebasco Services Inc	1	5-62	2400	1000	1000	1	940	Rw	-	-	-
Arkansas Power & Light Co	Russellville, Ark	Russellville	Southern Services, Inc	1	1-60	2400	1000	1000	1	1430	Rw-	25.7	-	-
				2	7-60	2400	1000	1000	1	1790	Rw-	25.7	-	-
Colorado Ute Electric Assn	Colorado City, Texas	Morgan Creek	Ebasco Services Inc	1	2-60	2000	1000	1000	1*	1550	Rw-	30	23.4	46.2
	Grand River Mesa, Colo	Bay Shore	U.E. Engineers	2	5-59	1900	1000	1000	1*	1550	Rw-	23.2	75.2	49.9
				3	1960	1900	1050	1000	1	940	Rw-	39.2	72.8	43.7
	Sturgeon, Pa	Sturgeon	Gibbs & Hill	1	4-61	2400	1000	1000	1*	1350	Rw-	11.6	90.0	31.2
	San Ramon, Ariz	Navajo	Ebasco Services	1	4-61	2400	1000	1000	1*	1350	Rw-	11.6	-	-
	Farmington, Ariz	Four Corners		1	4-63	2400	1000	1000	1*	470	CE-	16.3	-	-
				2	4-63	2400	1000	1000	1*	470	CE-	16.3	-	-
				3	4-63	2400	1000	1000	1*	470	CE-	16.3	-	-

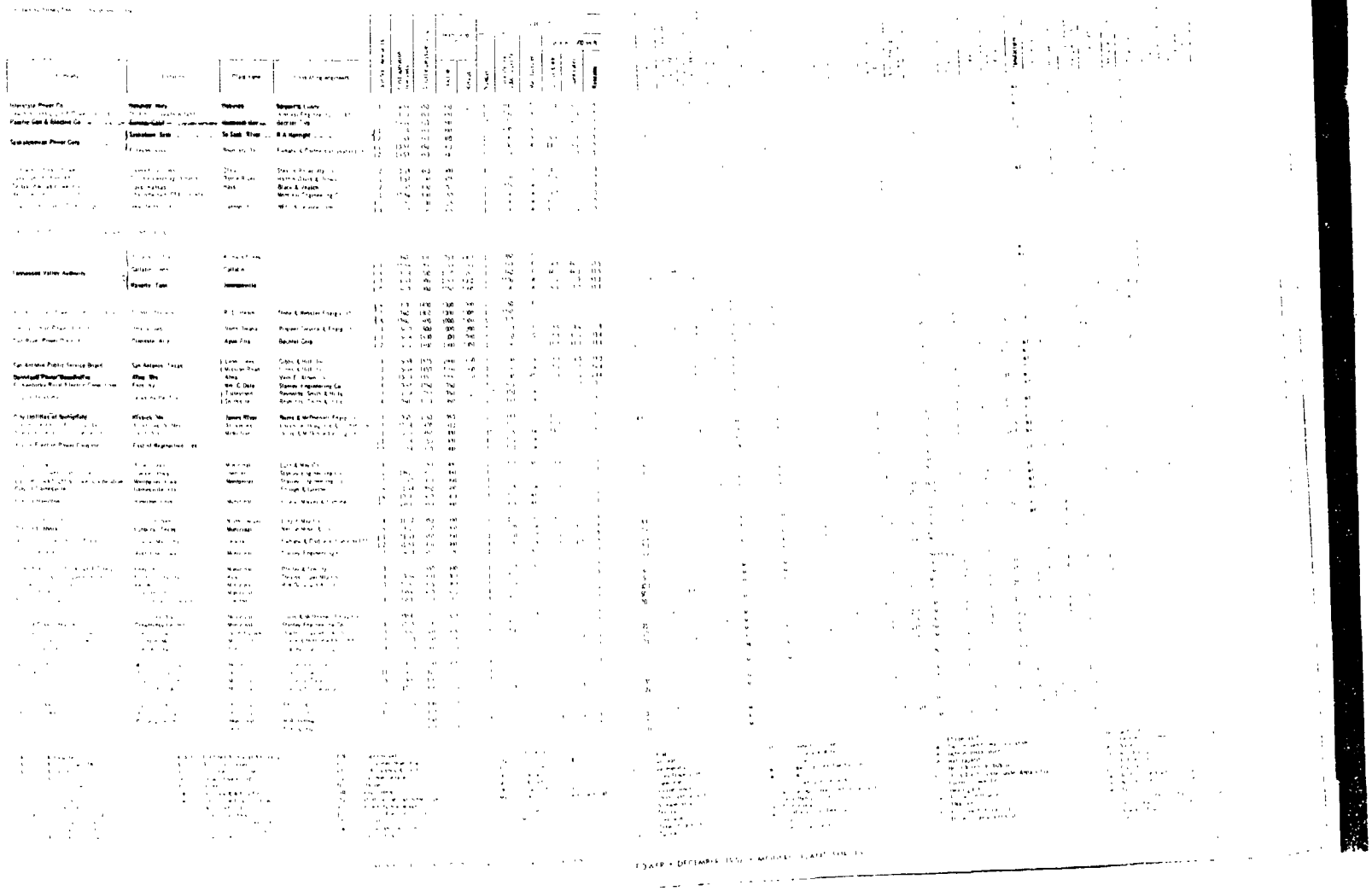
TURBINES: Number	TURBINES: Drive	TURBINES: Rating, each unit, kw	TURBINES: Speed, rpm	TURBINES: Manufacturer	GENERATORS: Number	GENERATORS: Rating, each unit, kva	GENERATORS: Voltage	GENERATORS: Manufacturer	Remarks
1	M	35,000	3600	GE	1	41,176	13,800	GE	

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



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

1957 Design Survey of Typical New eam Central-Station Installations



1957 Design Survey: Typical Industrial,

Compiled by R. C. Beltas, Assistant Editor

Company & Location	Consulting engineers	First operation, last 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	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
15 TO 200 PSIG																		
W. Dicks Breweries Ltd., Lethbridge, Alt. Sp[illegible] & Co., Saskatchewan, Sask.		9-56 9-57	200 200	385 385	2 2	35 35	FWC FW	D-G R	— Hy	— Co	— AC	PP IP	2,300 2,300	D D	Dy Dy	— —	80 80	—
[illegible] Oil Co. of Canada Ltd., Thermopylae, Manchester Forges & Engineering Steel Corp., Montreal, P.Q.	Evans Gilbert & Slade Eng. Ltd. Kaplan Zeitz	1956 1957	200 200	440 515	1 —	50 50	BWD BW	D PC	— —	— —	— —	— —	2,300 —	D —	— —	— —	30 —	— —
Dominion Oilcloth Ltd., Montreal, Que. Elsmere Div. of General Dynamics, Pittsdale, Del.		1957 11-56	200 200	388 Sat	— 4	7.5 15	FW K	D D	— —	— —	— —	PP	2,400	2 Hz	Dy	Pr Se	150 40	— —
Ford Motor Co., St. Louis, Mo. Chevrolet-St. Louis, St. Louis, Mo.	Austin Co. Fowler, Gerhardt & Knoch-house	1958 12-58	185 330	Sat Sat	2 1	15 150	Ki JI	D-G PC-G	— Pn	— —	— —	PP —	2,400 —	As —	— —	— —	30 —	— —
Electric Div., G.M.C., Hudson, O.		1958	175	Sat	2	40	CE	D-G	—	—	—	PP	2,400	Dr	4,160	Se	80	—
N. Y. State Prison Farm, Leeds[illegible], N. Y.	Principal Loeenheimer	—	175	378	2	14	BW	D	—	—	—	PP	—	—	—	—	28	—
Rochester Products Div., G.M.C., Rochester, N. Y.		8-56	175	380	1	60	BW	PC	—	—	—	PP	2,400	2,300	12,470	Se	60	—
[redacted] Newberry State Hospital, Newberry, Mich.	E. H. Cutler Associates, Inc.	9-57 9-58	175 175	368 —	1 2	75 42.5	FW Ki	— Pn	— Pn	— YC	— Ki	— IP	— —	— D	— Dy	— —	— 120	— —
Fisher Body Div., G.M.C., Mansfield, O.		8-58	175	377	1 1	30 60	FW	PC	Pn	—	—	PP	2,300	D	Dy	Pr	120	—
150 TO 314 PSIG																		
New Jersey Zinc Co., Carol Path, Gloucester, N. J.	Dorbert Associates, Inc.	1958	300	625	1	100	PE	D	—	—	—	PP	—	—	—	—	40	
[redacted]	—	—	250	—	1 1 1 1	30 42 50 50	FW FW FW FW	D-G-PC	—	AC	E	PP	—		Dy	—	134	
[illegible] Co., Lafayette, Ind. Ford Motor Co., Highland Park, Mich.	Ostby & Barton	1956 1955	300 300	— Sat	1 6	30 75	BW K	PC D-G	Pn —	— —	— —	PP PP	— 2,400	D D	— Dy-G	— —	20 90	— —
Anderson Electric Div., Borg-Warner Corp., Kimball, Ind. Dimond Chain & Pocket Co., Portland, Ind.	Black & Veatch	57 1957	300 300	650 Sat	2 2	50.5 75	FW FW	D-G PC	— Mn	— —	— —	PP PP	— —	— —	— —	— —	— 150	— —
Northern Paper Mills, Inc., Dalhousie, N. B. Northern Paper Mills, Inc., Millinocket, Me.		— —	300 450	725 725	1 1	75 125	K K	PC PC	Me Me	YC YC	E GE	PP PP	2,400 2,400	D D	Dy Dy	Pr Se Pr Se	75 125	— —
Kansas State Teachers College, Pittsburg, Kan.	Seyler & McElroy	10-57	300	Sat	2	30	K	UF	Me	—	—	PP	2,300	D	—	—	90	—
Mississippi River Power Co., Keokuk, Iowa	—	—	300	Sat	4	65	CE	D	—	—	—	P	4,160	D	Dy	Pr Se	260	—
315 TO 600 PSIG																		
[illegible]	[illegible]	1957	500	750	1	75	K	PC	Me	—	—	PP	—	—	—	—	75	—
[illegible]	[illegible]	1957	500	750	1	75	KE	PC	Me	—	—	PP	—	—	—	—	75	—
[illegible]		1958	450	—	1 1	75 75	FW FW	D-G	—	—	—	P	2,400	D	Dy	Pr	150	—
[illegible]	[illegible]	[illegible]	500	750	2	125	K	PC	Me	—	—	PP	2,400	D	Dy	Pr Se	250	—
[illegible]	[illegible] [illegible]	— —	500 500	750 750	— —	— —	K K	PC PC	Me Me	— —	— —	PP PP	2,400 2,400	D D	Dy Dy	Pr Se Pr Se	250 250	— —
[illegible]		—	500	750	1	100	K	PC	Me	—	—	PP	2,400	D	Dy	Pr	100	—
[illegible]		—	500	750	1	100	K	PC	Me	—	—	PP	2,400	D	Dy	Pr	100	—
[illegible]	[illegible]	—	500	750	1	100	K	PC	Me	—	—	PP	2,400	D	Dy	Pr	100	—
[illegible]	[illegible]	—	500	750	1	100	K	PC	Me	—	—	PP	2,400	D	Dy	Pr	100	—
[illegible]	[illegible]	—	500	750	1	100	K	PC	Me	—	—	PP	2,400	D	Dy	Pr	100	—
[illegible]	[illegible]	—	500	750	1	100	K	PC	Me	—	—	PP	2,400	D	Dy	Pr	100	—
Bay State Abrasive Prod. Co., Westboro, Mass.	Kenneth Warrington	—	500	700	1	25	KS	D	—	—	—	PP	—	—	—	—	—	—

AC – Allis-Chalmers Mfg. Co.
As – Associated Actors
As – Asphalt
B&L – Babcock & Wilcox Co.
BWD – Babcock & Wilcox Domestic McClintock
C – Coal Burning
CB – Combustion Engineering, Inc.
Co – Condensing
CPC – Combustion Engineering Canada Ltd.
D – Underfeed
D-G – Dual Fuel
E – Electric
EC – Erie City Iron Works
FW – Foster Wheeler Corp.
FWL – Foster Wheeler Limited
G – Gas
GE – General Electric Co.
IP – Generates own power
Dr – Ground
Hy – Hydraulic
JI – Joseph Mills Co. Ltd.
K – Erie City Co.
Me – Mechanical

;titutional Plants, 200 psi and Below

