

Power

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This survey of over 1100 projects is by far the largest sampling of industrial plant and central station design data ever published in **POWER**. The following 47 pages outline trends and spell out design features selected from newly completed or modernized plants — some still under construction, others not yet off the drawing boards. Also, you will find a special tabulation on page S-10 of computer installations covering a range of operating responsibilities in large central stations. Some elements of each survey are summarized graphically, either before or after the tabulations.

OCTOBER • 1966

1966 ENERGY SYSTEMS DESIGN SURVEY

5 STEAM SYSTEMS

Table 1: 1550 to 350 psig

Use of natural gas is increasing; drawba

PROJECT	COMPANY	LOCATION	CONSULTING ENGINEER	Date of initial operation	New or existing plant	Principal steam use	BOILERS				FUEL		FURNACE				
							No. new units, type	Manufacturer	Capacity each, 1000 lb per hr	Operating pressure, psig	Operating temp., F	Heating surface, 1000 sq ft, incl. boiler, water-wall and superheater	Type	Max. sulfur content, %	Furnace type	Process relegated, type	
INDUSTRIAL STEAM SYSTEMS																	
1	Tennessee Eastman Co., 2 W. Eastman Kodak Co.	Kingsport, Tenn.	Sargent & Lundy	1966	Ve	Po, Pr, SH	2 F, 1	CE	430	1550	950	21	G	1.5	Pid		
2	Thiokol Pulp & Paper Co.	Akron, Ohio	Plaster & Shultz Inc.	1966	Ex	Po, Pr, SH	1 F, 1	GW	350	1500	908	18	G	2.5	Pid		
3	Hoerner Bares, Inc.	Orion, Mich.	Heimick & Lutz	1966	Ex	Po, Pr, SH	1 F, 1	GW	350	1500	900	18	G	2.5	Pid		
4	Dow Chemical Co.	Freeport, Texas	Becker Corp.	1966	Ex	Po, Pr, SH	1 F, 1	GW	400	1450	900	43	G	2.5	Pid		
5	Eastman Kodak Co.	Rochester, N.Y.	C.T. Main	1966	Ex	Po, Pr, SH	1 F, 1	GW	400	1425	900	43	G	2.5	Pid		
6	Dow Chemical Co.	Plaquemine, La.	Sargent & Lundy	1966	Ex	Po, Pr, SH	1 F, 1	RS	1100	2000	350	17.4	G	1.5	Pid		
7	Masonite Corp.	Lafayette, Miss.	Plaster & Shultz Inc.	1967	Ex	Po, Pr, SH	1 F, 1	RS	95	200	1300	325	17	G	2.5	Pid	
8	Pratt & Whitney Corp.	Lawson, Mich.	Benjamin, Woodhouse & Guenther, Inc.	1966	Ex	Po, Pr, SH	1 F, 1	GW	300	1250	900	38	G	2.5	Pid		
9	Admiral Corp.	Torrance, Calif.	Procon, Inc.	1966	Ex	Po, Pr, SH	1 F, 1	FW	303	1250	350	39	G	2.5	Pid		
10	Kvantrite Chemical Co.	Detroit, Mich.	Sanderson & Porter, Inc.	1967	Ex	Po, Pr, SH	2 F, 1	FW	275	925	375	...	G	2.5	Pid		
11	Avia Chemical Corp.	Helena, Ark.	Chemical Construction Corp.	1966	Ve	Po, Pr, SH	2 F, 1	CE	180	915	845	5.2	G	1.5	Pid		
12	Eastman Kodak Co.	Eastman, La.	Verdon Winer	1965	Ex	Po, Pr, SH	1 F, 1	CE	150	900	325	...	G	1.5	Pid		
13	Pioneer Mill Co.	Lafayette, La.	Verdon Winer	1966	Ve	Po, Pr, SH	2 F, 1	CE	145	375	750	...	G	1.5	Pid		
14	Pioneer Mill Co.	Lafayette, La.	Verdon Winer	1966	Ve	Po, Pr, SH	2 F, 1	CE	145	375	750	...	G	1.5	Pid		
15	International Paper Co.	Akron, Ohio	Verdon Winer	1967	Ve	Po, Pr, SH	2 F, 1	CE	145	375	750	...	G	1.5	Pid		
16	Great Northern Paper Co.	Cedar Rapids, Ia.	J.E. Gilman Co.	1957	Ex	Po, Pr, SH	1 F, 1	GW	500	450	900	72	G	2.5	Pid		
17	Albermarle Paper Co.	Roanoke Rapids, N.C.	J.E. Gilman Co.	1967	Ex	Po, Pr, SH	1 F, 1	GW	350	350	900	86	G	2.5	Pid		
18	American Can Co.	Rockford, Ill.	The Rust Engineering Co.	1966	Ex	Po, Pr, SH	1 F, 1	CE	350	350	900	15.3	G	2.5	Pid		
19	Hammermill Paper Co.	Lehigh, Pa.	The Rust Engineering Co.	1966	Ex	Po, Pr, SH	1 F, 1	CE	350	350	900	21	G	2.5	Pid		
20	Pace University	West Lafayette, Ind.	A.M. Kinney, Inc.	1967	Ex	Po, Pr, SH	1 F, 1	WB	215	650	325	23.6	G	1.5	Pid		
21	Montano Co-Chemstrand Div.	Durham, Ala.	Lockwood-Greene	1965	Ex	Po, Pr, SH	1 F, 1	WB	200	550	750	33	G	1.5	Pid		
22	Chemical Co.	Yorco, La.	Ford, Bacon & Davis, Inc.	1966	Ex	Po, Pr, SH	1 F, 1	WB	215	650	400	13	G	1.5	Pid		
23	Pine Chem Housing	Brooklyn, N.Y.	Div. & Zimmermann	1966-67	Ve	Po, Pr, SH	3 F, 1	UR	100	650	550	...	G	1.5	Pid		
24	Continental Can Co.	Haverhill, Mass.	Reiger Engineering Co.	1966	Ex	Po, Pr, SH	1 F, 1	CE	120	350	550	...	G	1.5	Pid		
25	Pacesetter Paper Div., The Hearst Corp.	Brunswick, Me.	Sanderson & Porter, Inc.	1966	Ex	Po, Pr, SH	1 F, 1	CE	30	650	750	...	G	1.5	Pid		
26	Lafayette Paper Co.	Tulsa, La.	Sanderson & Porter, Inc.	1966	Ex	Po, Pr, SH	1 F, 1	CE	100	445	750	...	G	1.5	Pid		
27	PAC Corp.	Green River, Wyo.	J.G. White Engineering Corp.	1965	Ex	Po, Pr, SH	1 F, 1	WB	250	915	725	18	G	2.5	Pid		
28	National Lead Co.	New York, N.Y.	J.G. White Engineering Corp.	1966	Ex	Po, Pr, SH	1 F, 1	CE	500	900	750	...	G	2.5	Pid		
29	Easton, Inc.	Dallas, Texas	E.A. Simons & H.A. Simons	1966	Ex	Po, Pr, SH	1 F, 1	CE	500	900	750	...	G	2.5	Pid		
30	Crown Simpson Pulp Co.	Eureka, Calif.	Crown-Zellerbach & H.A. Simons	1966	Ve	Po, Pr, SH	1 F, 1	WB	370	600	750	58.5	G	1.5	Pid		
31	Crown Simpson Pulp Co.	Eureka, Calif.	Crown-Zellerbach & H.A. Simons	1966	Ve	Po, Pr, SH	1 F, 1	WB	370	600	750	35	G	1.5	Pid		
32	Texas Eastman Co.	Lubbock, Texas	Lockwood-Greene	1966	Ex	Po, Pr, SH	1 F, 1	WB	300	600	750	33.6	G	1.5	Pid		
33	Delaware Fibers Co.	Norfolk, Va.	Jackson & Moreland	1966	Ex	Po, Pr, SH	1 F, 1	FW	256	500	750	32	G	1.5	Pid		
34	Kidder Paper Products Co.	St. Paul, Minn.	Jackson & Moreland	1966	Ex	Po, Pr, SH	1 F, 1	WB	200	600	625	18.2	G	1.5	Pid		
35	Lockwood-Greene	Chandler, Ariz.	H.K. Ferguson	1967	Ve	Po, Pr, SH	2 F, 1	UR	120	600	720	8.3	G	1.5	Pid		
36	Lockwood-Greene	Paris, Texas	Verdon Winer	1967	Ex	Po, Pr, SH	1 F, 1	UR	120	600	750	...	G	1.5	Pid		
37	Lockwood-Greene	Paris, Texas	Verdon Winer	1967	Ex	Po, Pr, SH	1 F, 1	UR	120	600	529	9	G	1.5	Pid		
38	Lockwood-Greene	Paris, Texas	The M.W. Kellogg Co.	1966	Ex	Po, Pr, SH	1 F, 1	WB	60	600	600	5.1	G	1.5	Pid		
39	Lockwood-Greene	Paris, Texas	The M.W. Kellogg Co.	1966	Ex	Po, Pr, SH	1 F, 1	WB	60	600	531	5	G	1.5	Pid		
40	Continental Can Co.	Lake Charles, La.	Westinghouse Engineering Co.	1955	Ex	Po, Pr, SH	1 F, 1	WB	40	600	750	4.5	G	1.5	Pid		
41	Pine Chem Housing	Donaldsonville, La.	The M.W. Kellogg Co.	1966	Ve	Po, Pr, SH	1 F, 1	WB	35	570	630	1.3	G	1.5	Pid		
42	Chemical Corp.	Camden, N.J.	Gilbert Assoc. Inc.	1966	Ex	Po, Pr, SH	1 F, 1	WB	35	550	630	1.3	G	1.5	Pid		
43	Pine Chem Housing	Greenville, N.C.	Lockwood-Greene	1966	Ex	Po, Pr, SH	1 F, 1	CE	45	550	540	3	G	1.5	Pid		
44	Lockwood-Greene	Port Arthur, Texas	Lockwood-Greene	1956	Ex	Po, Pr, SH	1 F, 1	CE	120	500	570	...	G	1.5	Pid		
45	Lockwood-Greene	Port Arthur, Texas	Rogers Schmidt Engineering Co.	1965	Ex	Po, Pr, SH	1 F, 1	CE	60	500	555	4.7	G	1.5	Pid		
46	Lockwood-Greene	St. Louis, Mo.	Stanley Engineering Co.	1967	Ex	Po, Pr, SH	1 F, 1	WB	200	465	600	...	G	1.5	Pid		
47	Lockwood-Greene	St. Louis, Mo.	Stanley Engineering Co.	1965	Ex	Po, Pr, SH	1 F, 1	WB	150	415	760	3.3	G	1.5	Pid		
48	Lockwood-Greene	Trenton, N.J.	Sargent & Lundy	1965	Ex	Po, Pr, SH	1 F, 1	WB	200	462	575	...	G	1.5	Pid		
49	Lockwood-Greene	Parkville, Mo.	Sargent & Lundy	1965	Ex	Po, Pr, SH	1 F, 1	WB	200	450	575	22.5	G	1.5	Pid		
50	Lockwood-Greene	Livingston, Mass.	Lockwood-Greene	1965	Ex	Po, Pr, SH	1 F, 1	WB	40	450	450	...	G	1.5	Pid		
51	Lockwood-Greene	Easton, Pa.	Lockwood-Greene	1965	Ex	Po, Pr, SH	1 F, 1	WB	45	450	450	...	G	1.5	Pid		
52	Lockwood-Greene	Easton, Pa.	Lockwood-Greene	1965	Ex	Po, Pr, SH	1 F, 1	WB	45	450	450	...	G	1.5	Pid		
53	Lockwood-Greene	Easton, Pa.	Lockwood-Greene	1965	Ex	Po, Pr, SH	1 F, 1	WB	45	450	450	...	G	1.5	Pid		
54	Lockwood-Greene	Easton, Pa.	Lockwood-Greene	1965	Ex	Po, Pr, SH	1 F, 1	WB	45	450	450	...	G	1.5	Pid		
55	Lockwood-Greene	Easton, Pa.	Lockwood-Greene	1965	Ex	Po, Pr, SH	1 F, 1	WB	45	450	450	...	G	1.5	Pid		
56	Lockwood-Greene	Easton, Pa.	Lockwood-Greene	1965	Ex	Po, Pr, SH	1 F, 1	WB	45	450	450	...	G	1.5	Pid		
57	Lockwood-Greene	Easton, Pa.	Lockwood-Greene	1965	Ex	Po, Pr, SH	1 F, 1	WB	45	450	450	...	G	1.5	Pid		
58	Lockwood-Greene	Easton, Pa.	Lockwood-Greene	1965	Ex	Po, Pr, SH	1 F, 1	WB	45	450	450	...	G	1.5	Pid		
59	Lockwood-Greene	Easton, Pa.	Lockwood-Greene	1965	Ex	Po, Pr, SH	1 F, 1	WB	45	450	450	...	G	1.5	Pid		
60	Lockwood-Greene	Easton, Pa.	Lockwood-Greene	1965	Ex	Po, Pr, SH	1 F, 1	WB	45	450	450	...	G	1.5	Pid		
61	Lockwood-Greene	Easton, Pa.	Lockwood-Greene	1965	Ex	Po, Pr, SH	1 F, 1	WB	45	450	450	...	G	1.5	Pid		
62	Lockwood-Greene	Easton, Pa.	Lockwood-Greene	1965	Ex	Po, Pr, SH	1 F, 1	WB	45	450	450	...	G	1.5	Pid		
63	Lockwood-Greene	Easton, Pa.	Lockwood-Greene	1965	Ex	Po, Pr, SH	1 F, 1	WB	45	450	450	...	G	1.5	Pid		
64	Lockwood-Greene	Easton, Pa.	Lockwood-Greene	1965	Ex	Po, Pr, SH	1 F, 1	WB	45	450	450	...	G	1.5	Pid		
65	Lockwood-Greene	Easton, Pa.	Lockwood-Greene	1965	Ex	Po, Pr, SH	1 F, 1	WB	45	450	450	...	G	1.5	Pid		
66	Lockwood-Greene	Easton, Pa.	Lockwood-Greene	1965	Ex	Po, Pr, SH	1 F, 1	WB	45	450	450	...	G	1.5	Pid		
67	Lockwood-Greene	Easton, Pa.	Lockwood-Greene	1965	Ex	Po, Pr, SH	1 F, 1	WB	45	450	450	...	G	1.5	Pid		
68	Lockwood-Greene	Easton, Pa.	Lockwood-Greene	1965	Ex	Po, Pr, SH	1 F, 1	WB	45	450	450	...	G	1.5	Pid		
69	Lockwood-Greene	Easton, Pa.	Lockwood-Greene	1965	Ex	Po, Pr, SH	1 F, 1	WB	45	450	450	...	G	1.5	Pid		
70	Lockwood-Greene	Easton, Pa.	Lockwood-Greene	1965	Ex	Po, Pr, SH	1 F, 1	WB	45	450	450	...	G	1.5	Pid		
71	Lockwood-Greene	Easton, Pa.	Lockwood-Greene	1965	Ex	Po, Pr, SH	1 F, 1	WB	45	450	450	...	G	1.5	Pid		
72	Lockwood-Greene	Easton, Pa.	Lockwood-Greene	1965	Ex	Po, Pr, SH	1 F, 1	WB	45	450	450	...	G	1.5	Pid		
73	Lockwood-Greene	Easton, Pa.	Lockwood-Greene	1965	Ex	Po, Pr, SH	1 F, 1	WB	45	450	450	...	G	1.5	Pid		
74	Lockwood-Greene	Easton, Pa.	Lockwood-Greene	1965	Ex	Po, Pr, SH	1 F, 1	WB	45	450	450	...	G	1.5	Pid		
75	Lockwood-Greene	Easton, Pa.	Lockwood-Greene	1965	Ex	Po, Pr, SH	1 F, 1	WB	45	450	450	...	G	1.5	Pid		
76	Lockwood-Greene	Easton, Pa.	Lockwood-Greene	1965	Ex	Po, Pr, SH	1 F, 1	WB	45	450	450	...	G	1.5	Pid		
77	Lockwood-Greene	Easton, Pa.	Lockwood-Greene	1965	Ex	Po, Pr, SH	1 F, 1	WB	45</								

and oil is the large amount of sulphur they usually contain

[illegible]

Electric Corp.
of Engineering Co.
Ventilating Co.
Co.
Manufacturing Co.
Co., Inc.
Co.
Boiler & Engineering Corp.
Steel Co.
Northwest, Inc.
Inc.

ME	McGraw-Hill Construction Co.
ME	Murray Hill Works Co.
ME	Moore Products Co. Sub. of Moore Inst. Co. Ltd.
ME	Turn & Seymour Inc.
ME	Phalco Inc. Corp.
ME	Progress Pump & Mfg. Corp.
ME	Radco Engineering Corp.
ME	Pacific Pumps Inc.
ME	Div. of Dresser Industries Inc.
ME	Pennsylvania Pump & Compressor Co.
ME	Pennsylvania Transformer Div.
ME	McGraw-Hill Construction Co.

- PYR - Pyronics, Inc.
- RAY - Rayburn Co.
- RC - Research-Cottrell, Inc.
- REC - Record Cars
- RER - Ray E. Roth Co.
- RF - Republic Div., Rockwell Int'l Co.
- RS - Rively Stoner Corp.
- RV - Robinson Ventilating Co.
- SMA - Schaub Engineering Co.
- SW - Sullivan Div., Westinghouse Electric Corp.
- TD - Todd Shipyard Corp., Products Div.
- UP - Union Pacific Co.

UP - Union for Works,
Sub of River Shovel Corp
VO - Henry Vogt Machine Co. Inc
WE - Westinghouse Electric Corp
WHD - Wickes Boiler Co. Sub of Wickes Corp
WNE - W. N. Best Construction Equipment Co
WO - Worthington Corp
WP - Western Precipitation Div of Joy Mfg Co
WPI - Warner Pumps, Inc
WPM - The Weirham Pump Mfg Co
WC - Wilson-Snyder Works
United States Steel Corp

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forces in an increased effort to fight atmospheric pollution

[illegible]

...libed demerazer

Package Plate Pneumatic

Fe	Power
Fr	Processing
Ing	Fossilized
FL	• Rotary-cup burner
Fr	• Regenerative
FL	Refractory gas
St	Steam atomizing
Sat	Saturated

Sc	- Sawdust
SH	- Space heat
St	- Shell and Tube
St	- Softener
SS	- Spreader, Stoker
St	- Steam
T	- Turbine
T2	- Tangential

TC - Traveling-grate stoker
Tu - Tubular
TV - Closed-circuit TV
Uv - Ultraviolet
VG - Vibrating-grate stoker
Z - Zeolite

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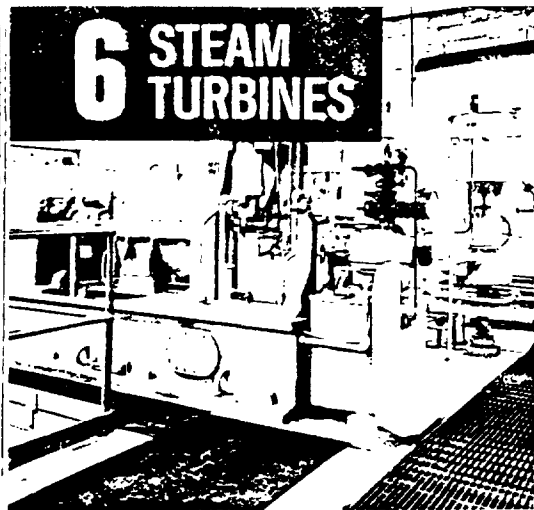
Table 3: 125 to 40 psig
Overseas: 1220 to 120 psig

Steam turbines and dual drives for aux

PROJECT	COMPANY	LOCATION	CONSULTING ENGINEER	Date of initial operation	New or existing plant	Principal steam use	BOILERS					FUEL		FUEL	
							No. new units, type	Manufacturer	Capacity each, 1000 lb per hr	Operating pressure, psig	Operating temp., F	Heating surface, 1000 sq ft, incl boiler, water-wall and superheaters	Type		Max sulfur content, %
132	Ford Motor Co.	Sterling, Mich.		1965	Ex	PH	1 FI	WIB	120	125	Sat	13.3	O	2	BD
133	R.R. Donnelly & Sons	Chicago, Ill.		1965	Ex	PH, SH	2 FI	BW	80	125	Sat	3.7	O, G	1	BD
134	Williams College	Williamstown, Mass.	Lackwood-Greene	1956	Ex	SH	1 FI	KEE	60	125	Sat	7.4	O, G	1.5	BD
135	Wisconsin State College	Stu. Claire, Wis.	Dr. Schelen-Waveron & Assoc.	1966	Ne	SH	1 FI	BRO	50	125	Sat	...	O, G	3	BD
136	American Airlines	Tulsa, Okla.		1956	Ex	SH	1 FI	KEE	50	125	Sat	5	O, G	...	BD
137	Lincoln General Hosp.	Lincoln, Neb.	Davis & Wilson Architects & Engineers	1965	Ne	SH	2 FI	BW	45	125	345	1.1	O, G	...	PH
138	Deere & Co.	Kelland, Ont.	H.G. Acres & Co. Ltd.	1965	Ex	PH, SH	1 FI	FW	40	125	353	1.5	O, G	...	PH
139	Antares State College	Klamath, Ore.	Swanson-Rink	1956	Ex	SH	1 FI	KEE	35	125	Sat	3.7	O, G	1	PH
140	Associated Dry & Print Co.	Patterson, N.J.	Guemwald Assoc.	1956	Ex	SH	1 FI	KEE	25	125	Sat	7.4	O, G	...	PH
141	Indiana State College	Indiana, Pa.	Wood Tower	1956	Ex	PH, SH	1 FI	KEE	25	125	Sat	...	O, G	...	BD
142	Broadway Corp.	Plymouth, Mich.	Cummins & Barnard, Inc.	1966	Ex	PH	1 FI	BW	30	125	352	3.3	O	4	PH
143	Block, Inc.	Chattanooga, Tenn.	Wiegler Eng'g Co.	1965	Ex	PH	1 FI	CE	30	125	Sat	3.1	O, G	...	PH
144	LeTourneau Westinghouse Co.	Peoria, Ill.		1956	Ex	PH, SH	1 FI	MMW	20	125	Sat	3.3	O, G	...	PH
145	Marion Administration Hosp.	Marion, Ind.		1956	Ex	PH, SH	1 FI	VO	20	125	Sat	4	O	2	BD
146	Drake America Corp.	New York, N.Y.		1956	Ne	...	1 FI	MMW	22	125	Sat	2	O	...	PH
147	Bradley University	Peoria, Ill.	Beijing Eng'g	1956	Ex	SH	1 FI	MMW	32	120	Sat	3.3	O, G	...	PH
148	San Fernando Valley State College	Northridge, Calif.		1956	Ex	SH	1 FI	BRO	30	120	350	3.5	O, G	...	PH
149	Pet Milk Co.	Greensboro, N.C.	Kennedy Engineers	1956	Ex	PH, SH	1 FI	KEE	25	120	350	...	O	1.2	BD
150	West Libroad Bros.	West Chester, Pa.		1956	Ex	SH	1 FI	KEE	25	120	Sat	2.5	O	...	PH
151	Marine Colloids, Inc.	Rockland, Me.		1956	Ex	PH	1 FI	RS	20	118	Sat	5.7	O	...	BD
152	Thivo Crene & Finishing Co.	Clifton, N.J.	W.J. Beekunssen & Assoc.	1955	Ne	PH	1 FI	KEE	40	118	Sat	3.8	O, G	...	PH
153	Finch Design Hosp.	St. Louis, Mo.	Wm. Taos & Assoc.	1955	Ex	PH	1 FI	MMW	45.5	100	Sat	4.3	O, G	...	PH
154	Wythe State College	Warne, Neb.	Leo H. Dair Co.	1956	Ex	SH	1 FI	MMW	45.5	100	Sat	4.3	O, G	...	PH
155	Kaiser Brothers, Inc.	Barberton, Ohio		1963	Ex	PH, SH	1 FI	ED	40	100	Sat	5.5	O, G	1.33	BD
HIGH TEMPERATURE WATER SYSTEMS Total capacity in million Btu per hr															
156	University of California	Riverside, Calif.		1963	Ex	SH	1 FI	BW	12	120	Sat	...	O, G	...	BD
157	Ford Motor Co.	Dearborn, Mich.	Jenkins & Russell, Inc.	1955	Ne	SH	4 FB	DB	12	120	Sat	...	O, G	...	PH
158	E.M. Barckley Corp.	Fort Knox, Ky.	U.S. Army Corps of Engineers	1955	Ne	SH	1 FI	BW	150	150	315	...	O, G	...	BD
159	Greenborough Community College	Bayside, N.Y.	J.R. Loring & Assoc.	1955	Ne	SH	1 FI	BW	150	150	400	5.5	O, G	...	PH
160	Florida College	Frederia, N.Y.	Begner & Dalton	1967	Ne	SH	1 FI	BW	150	150	400	5.5	O, G	...	PH
161	Texas Inc.	Beaverton, Ore.		1955	Ex	PH, SH	1 FI	BW	150	150	400	5.5	O, G	...	PH
162	Brigham Young University	Provo, Utah	Paul L. Geringer & Assoc.	1966	Ex	SH	1 FI	BW	200	225	400	12.1	O	3.5	BD
163	University of Virginia	Williamsburg, Va.	Paul L. Geringer & Assoc.	1956	Ex	SH	1 FI	BW	30	225	Sat	4.3	O	2.3	PH
164	University of California	San Diego, Calif.	Kennedy Engineers	1966	Ne	SH	2 FI	BW	150	155	350	3.5	O, G	...	PH
165	American River College	Sacramento, Calif.	O'Meara-Sanford & Assoc. Inc.	1965	Ex	SH	1 FI	BW	150	155	350	3.5	O, G	...	PH
166	State Island Community College	State Island, N.Y.	James Mongitore Assoc.	1966	Ne	SH	2 FI	BW	140	150	320	5	O	...	PH
167	Bentley Corp.	Plymouth, Mich.		1965	Ex	SH	1 FI	WIB	10	125	190	3.1	O, G	...	PH
168	Harbin County Memorial Hosp.	Elizabethtown, Ky.	Procter Ingers & Assoc.	1965	Ne	SH	2 FI	BW	120	120	120	...	O, G	...	PH
169	Southern Counties Gas Co.	Anaheim, Calif.	M.A. Niskisen, Mack and Sunderland	1965	Ne	SH	1 FI	BSL	4.2	40	250	...	O, EG	...	PH
OVERSEAS STEAM SYSTEMS															
170	Comptel de Grand Quevilly	Grand Quevilly, France	J.A. Heurley	1967	Ne	PH	1 FI	BWF	125	1220	570	...	FG, Nap	4	BD
171	Comptel de Grand Quevilly	Grand Quevilly, France	J.A. Heurley	1967	Ne	PH	2 FI	BWF	80	1200	55	...	O	...	PH
172	Comptel de Grand Quevilly	Grand Quevilly, France	J.A. Heurley	1967	Ne	PH, SH	1 FI	BWF	15	120	190	12.5	O	2.5	BD
173	Comptel de Grand Quevilly	Grand Quevilly, France	J.A. Heurley	1967	Ne	PH	4 FI	BWF	39	65	175	5.0	O	1	BD
174	Comptel de Grand Quevilly	Grand Quevilly, France	J.A. Heurley	1967	Ne	PH	1 FI	FW	100	125	219	...	O	3.4	PH
175	Comptel de Grand Quevilly	Grand Quevilly, France	J.A. Heurley	1967	Ne	PH	1 FI	SEU	85	120	190	...	O	1	PH
176	Comptel de Grand Quevilly	Grand Quevilly, France	J.A. Heurley	1967	Ne	PH	1 FI	SEU	120	120	190	...	O	1	BD
177	Comptel de Grand Quevilly	Grand Quevilly, France	J.A. Heurley	1967	Ne	PH	1 FI	SEU	120	120	190	...	O	1	BD
178	Comptel de Grand Quevilly	Grand Quevilly, France	J.A. Heurley	1967	Ne	PH	1 FI	SEU	120	120	190	...	O	1	BD
179	Comptel de Grand Quevilly	Grand Quevilly, France	J.A. Heurley	1967	Ne	PH	1 FI	SEU	120	120	190	...	O	1	BD
180	Comptel de Grand Quevilly	Grand Quevilly, France	J.A. Heurley	1967	Ne	PH	1 FI	SEU	120	120	190	...	O	1	BD
181	Comptel de Grand Quevilly	Grand Quevilly, France	J.A. Heurley	1967	Ne	PH	1 FI	SEU	120	120	190	...	O	1	BD
182	Comptel de Grand Quevilly	Grand Quevilly, France	J.A. Heurley	1967	Ne	PH	1 FI	SEU	120	120	190	...	O	1	BD
183	Comptel de Grand Quevilly	Grand Quevilly, France	J.A. Heurley	1967	Ne	PH	1 FI	SEU	120	120	190	...	O	1	BD
184	Comptel de Grand Quevilly	Grand Quevilly, France	J.A. Heurley	1967	Ne	PH	1 FI	SEU	120	120	190	...	O	1	BD
185	Comptel de Grand Quevilly	Grand Quevilly, France	J.A. Heurley	1967	Ne	PH	1 FI	SEU	120	120	190	...	O	1	BD
186	Comptel de Grand Quevilly	Grand Quevilly, France	J.A. Heurley	1967	Ne	PH	1 FI	SEU	120	120	190	...	O	1	BD
187	Comptel de Grand Quevilly	Grand Quevilly, France	J.A. Heurley	1967	Ne	PH	1 FI	SEU	120	120	190	...	O	1	BD
188	Comptel de Grand Quevilly	Grand Quevilly, France	J.A. Heurley	1967	Ne	PH	1 FI	SEU	120	120	190	...	O	1	BD
189	Comptel de Grand Quevilly	Grand Quevilly, France	J.A. Heurley	1967	Ne	PH	1 FI	SEU	120	120	190	...	O	1	BD
190	Comptel de Grand Quevilly	Grand Quevilly, France	J.A. Heurley	1967	Ne	PH	1 FI	SEU	120	120	190	...	O	1	BD
191	Comptel de Grand Quevilly	Grand Quevilly, France	J.A. Heurley	1967	Ne	PH	1 FI	SEU	120	120	190	...	O	1	BD
192	Comptel de Grand Quevilly	Grand Quevilly, France	J.A. Heurley	1967	Ne	PH	1 FI	SEU	120	120	190	...	O	1	BD
193	Comptel de Grand Quevilly	Grand Quevilly, France	J.A. Heurley	1967	Ne	PH	1 FI	SEU	120	120	190	...	O	1	BD
194	Comptel de Grand Quevilly	Grand Quevilly, France	J.A. Heurley	1967	Ne	PH	1 FI	SEU	120	120	190	...	O	1	BD
195	Comptel de Grand Quevilly	Grand Quevilly, France	J.A. Heurley	1967	Ne	PH	1 FI	SEU	120	120	190	...	O	1	BD
196	Comptel de Grand Quevilly	Grand Quevilly, France	J.A. Heurley	1967	Ne	PH	1 FI	SEU	120	120	190	...	O	1	BD
197	Comptel de Grand Quevilly	Grand Quevilly, France	J.A. Heurley	1967	Ne	PH	1 FI	SEU	120	120	190	...	O	1	BD
198	Comptel de Grand Quevilly	Grand Quevilly, France	J.A. Heurley	1967	Ne	PH	1 FI	SEU	120	120	190	...	O	1	BD
199	Comptel de Grand Quevilly	Grand Quevilly, France	J.A. Heurley	1967	Ne	PH	1 FI	SEU	120	120	190	...	O	1	BD
200	Comptel de Grand Quevilly	Grand Quevilly, France	J.A. Heurley	1967	Ne	PH	1 FI	SEU	120	120	190	...	O	1	BD

NOTES:
1. All units are 125 to 40 psig.
2. All units are 1220 to 120 psig.
3. All units are 125 to 40 psig.
4. All units are 1220 to 120 psig.
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100. All units are 1220 to 120 psig.

6 STEAM TURBINES

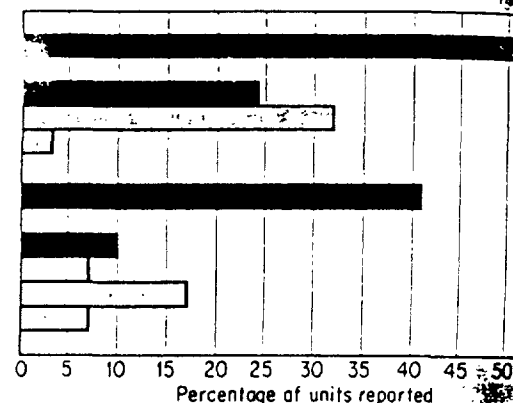


Noncondensing

No extraction
Single extraction
Double extraction

Condensing

No extraction
Single extraction
Double extraction
Triple extraction



PREPONDERANCE of noncondensing turbines shows greater use of process

Industrial turbines get bigger

R J BENDER, Consulting Editor

There is a continued increase in the size of turbines purchased by industries where both process steam and electricity are needed. This is due, in part, to present or contemplated expansion of plant capacity, and also to the fact that more and more electricity is being generated in plants of this type. The trend to more in-plant generation, which started only a few years ago, is now in full swing. At a relatively modest increase in capital cost, a larger boiler and a steam generator can be obtained that may, in the overall picture, produce a defi-

nite saving in energy cost for the owner.

This year, single-point and double-point extraction turbines are the most popular. A number of three extraction units were reported. However, U.S. manufacturers prefer to call them double-extraction with an additional bleed point. Leading turbine manufacturers have told POWER that, in addition to increased number of relatively small steam turbines installed to drive essential boiler auxiliaries, the growing use of steam turbines to drive large machines

PROJECT	COMPANY	LOCATION	No. of new turbines	Manufacturer	Date of initial operation	Capacity, kw	Speed, rpm	Throttle temperature, F	Throttle pressure, psig	Type	No. of extraction points	Extraction pressure, psig	Backpressure, in Hg or psia	Exhausted steam use	Type condenser	Condenser manufacturer	Generator manufacturer	Cooling	Cooling medium drive	Power factor	Standby type
STEAM TURBINES																					
1	Tennessee Eastman Co. Div. Eastman Kodak Co.	Kingsport, Tenn.	1	GE	1966	12,300	3600	950	1500	Yes	Y		515	P	N	GE	GE	H ₂	St	80	
2	Herner Boxes, Inc.	Trinajagon, Mich.	1	GE	1966	8175	3600	900	1450	Com	2	250/175/70	7	P	N	DL	GE	H ₂	St	80	
3	Thurman Pulp & Paper Co.	Kaukauna, Wis.	1	WE	1966	7500	3600	900	1470	Yes	1	150	7	P	N	GE	GE	H ₂	St	80	
4	Eastman Kodak Co.	Rochester, N.Y.	1	GE	1967	25,500	3600	900	1470	Yes	1	215.275	25	P	N	GE	GE	H ₂	St	80	
5	Detroit Edison Co.	Detroit, Mich.	1	AO	1967	10,530	3600	975	321	Yes	1	213	34	P	N	N	N	H ₂	St	80	
6	Disposal Co.	Rural, La.	2	TO	1967	4500	2000	351	135	Com	Y		1.3	P	Rad	TO	MAR	A ₂	St	80	
7	United Chemical Products	Port Arthur, Tex.	1	GE	1966	10,000	3600	970	150	Com	2	150/20	23	P	N	2 class	R	GE	H ₂	St	80
8	Midco	Chillicothe, Ohio	1	ATA	1966	12,000	2800	550	550	Yes	1	75	25	P	N	2 class	ASE	A ₂	St	80	
9	Chemical Process Co.	Rockledge, Miss.	1	GE	1967	10,000	3600	975	150	Com	1	140/20	23	P	N	2 class	AO	GE	H ₂	St	80
10	Fluor Corp.	Chattanooga, Tenn.	1	GE	1966	6250	2800	571	150	Com	1	50/2	1	P	N	2 class	AO	GE	H ₂	St	80
11	Aluminum Plant	Franklin, Pa.	1	GE	1965	22,500	3600	975	150	Yes	Y		50	P	N	2 class	GE	H ₂	St	85	
12	Aluminum Plant	Aluminum, Pa.	1	ATA	1964	10,000	2800	481	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
13	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
14	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
15	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
16	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
17	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
18	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
19	Park Shore Housing	Brooklyn, N.Y.	2	WE	1956	2550	3600	850	140	Com	Y		15.5	25	2H	N	AO	WE	A ₂	St	80
20	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
21	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
22	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
23	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
24	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
25	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
26	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
27	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
28	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
29	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
30	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
31	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
32	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
33	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
34	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
35	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
36	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
37	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
38	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
39	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
40	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
41	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
42	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
43	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
44	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
45	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
46	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
47	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
48	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
49	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
50	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
51	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
52	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
53	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
54	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
55	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
56	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
57	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
58	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
59	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
60	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
61	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
62	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
63	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
64	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
65	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
66	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
67	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
68	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
69	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
70	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
71	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
72	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
73	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
74	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
75	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
76	Aluminum Plant	Aluminum, Pa.	1	ATA	1966	12,000	2800	550	150	Yes	Y		50	P	N	2 class	ATA	A ₂	St	80	
77	Aluminum Plant	Aluminum, Pa.	1																		

aising boiler pressures call for main turbine-driven feed pumps

Capacity, kw	TURBINE					CONDENSER					FEEDWATER					GENERATOR			CONTROLS					PROJECT
	Type	Exhaust, in Hg	No. of blades, pairs	No. of exhausts	Manufacturer	Surface, 1000 sq ft	No. of water passes	Tube material	Air removal	Manufacturer	Makeup treatment	Condensate treatment	System manufacturer	Voltage, kv	Rating, mva	Cooling	Combustion, mb	Feedwater, mb	Closed circuit, lb/hr	Data logger, mb	Computer, mb			
1000	GE	10	1	1	GE	1000	1	SS	Re	Re	De	De	WE	24	545	H ₂ Li HC	BM	BM	DP	N	N	1		
1000	GE	10	1	1	GE	1000	1	SS	Re	Re	De	De	WE	24	545	H ₂ Li HC	BM	BM	DP	N	N	2		
1000	GE	10	1	1	GE	1000	1	SS	Re	Re	De	De	WE	24	545	H ₂ Li HC	BM	BM	DP	N	N	3		
1000	GE	10	1	1	GE	1000	1	SS	Re	Re	De	De	WE	24	545	H ₂ Li HC	BM	BM	DP	N	N	4		
1000	GE	10	1	1	GE	1000	1	SS	Re	Re	De	De	WE	24	545	H ₂ Li HC	BM	BM	DP	N	N	5		
1000	GE	10	1	1	GE	1000	1	SS	Re	Re	De	De	WE	24	545	H ₂ Li HC	BM	BM	DP	N	N	6		
1000	GE	10	1	1	GE	1000	1	SS	Re	Re	De	De	WE	24	545	H ₂ Li HC	BM	BM	DP	N	N	7		
1000	GE	10	1	1	GE	1000	1	SS	Re	Re	De	De	WE	24	545	H ₂ Li HC	BM	BM	DP	N	N	8		
1000	GE	10	1	1	GE	1000	1	SS	Re	Re	De	De	WE	24	545	H ₂ Li HC	BM	BM	DP	N	N	9		
1000	GE	10	1	1	GE	1000	1	SS	Re	Re	De	De	WE	24	545	H ₂ Li HC	BM	BM	DP	N	N	10		
1000	GE	10	1	1	GE	1000	1	SS	Re	Re	De	De	WE	24	545	H ₂ Li HC	BM	BM	DP	N	N	11		
1000	GE	10	1	1	GE	1000	1	SS	Re	Re	De	De	WE	24	545	H ₂ Li HC	BM	BM	DP	N	N	12		
1000	GE	10	1	1	GE	1000	1	SS	Re	Re	De	De	WE	24	545	H ₂ Li HC	BM	BM	DP	N	N	13		
1000	GE	10	1	1	GE	1000	1	SS	Re	Re	De	De	WE	24	545	H ₂ Li HC	BM	BM	DP	N	N	14		
1000	GE	10	1	1	GE	1000	1	SS	Re	Re	De	De	WE	24	545	H ₂ Li HC	BM	BM	DP	N	N	15		
1000	GE	10	1	1	GE	1000	1	SS	Re	Re	De	De	WE	24	545	H ₂ Li HC	BM	BM	DP	N	N	16		
1000	GE	10	1	1	GE	1000	1	SS	Re	Re	De	De	WE	24	545	H ₂ Li HC	BM	BM	DP	N	N	17		
1000	GE	10	1	1	GE	1000	1	SS	Re	Re	De	De	WE	24	545	H ₂ Li HC	BM	BM	DP	N	N	18		
1000	GE	10	1	1	GE	1000	1	SS	Re	Re	De	De	WE	24	545	H ₂ Li HC	BM	BM	DP	N	N	19		
1000	GE	10	1	1	GE	1000	1	SS	Re	Re	De	De	WE	24	545	H ₂ Li HC	BM	BM	DP	N	N	20		
1000	GE	10	1	1	GE	1000	1	SS	Re	Re	De	De	WE	24	545	H ₂ Li HC	BM	BM	DP	N	N	21		
1000	GE	10	1	1	GE	1000	1	SS	Re	Re	De	De	WE	24	545	H ₂ Li HC	BM	BM	DP	N	N	22		
1000	GE	10	1	1	GE	1000	1	SS	Re	Re	De	De	WE	24	545	H ₂ Li HC	BM	BM	DP	N	N	23		
1000	GE	10	1	1	GE	1000	1	SS	Re	Re	De	De	WE	24	545	H ₂ Li HC	BM	BM	DP	N	N	24		
1000	GE	10	1	1	GE	1000	1	SS	Re	Re	De	De	WE	24	545	H ₂ Li HC	BM	BM	DP	N	N	25		
1000	GE	10	1	1	GE	1000	1	SS	Re	Re	De	De	WE	24	545	H ₂ Li HC	BM	BM	DP	N	N	26		
1000	GE	10	1	1	GE	1000	1	SS	Re	Re	De	De	WE	24	545	H ₂ Li HC	BM	BM	DP	N	N	27		
1000	GE	10	1	1	GE	1000	1	SS	Re	Re	De	De	WE	24	545	H ₂ Li HC	BM	BM	DP	N	N	28		
1000	GE	10	1	1	GE	1000	1	SS	Re	Re	De	De	WE	24	545	H ₂ Li HC	BM	BM	DP	N	N	29		
1000	GE	10	1	1	GE	1000	1	SS	Re	Re	De	De	WE	24	545	H ₂ Li HC	BM	BM	DP	N	N	30		
1000	GE	10	1	1	GE	1000	1	SS	Re	Re	De	De	WE	24	545	H ₂ Li HC	BM	BM	DP	N	N	31		
1000	GE	10	1	1	GE	1000	1	SS	Re	Re	De	De	WE	24	545	H ₂ Li HC	BM	BM	DP	N	N	32		
1000	GE	10	1	1	GE	1000	1	SS	Re	Re	De	De	WE	24	545	H ₂ Li HC	BM	BM	DP	N	N	33		
1000	GE	10	1	1	GE	1000	1	SS	Re	Re	De	De	WE	24	545	H ₂ Li HC	BM	BM	DP	N	N	34		
1000	GE	10	1	1	GE	1000	1	SS	Re	Re	De	De	WE	24	545	H ₂ Li HC	BM	BM	DP	N	N	35		
1000	GE	10	1	1	GE	1000	1	SS	Re	Re	De	De	WE	24	545	H ₂ Li HC	BM	BM	DP	N	N	36		
1000	GE	10	1	1	GE	1000	1	SS	Re	Re	De	De	WE	24	545	H ₂ Li HC	BM	BM	DP	N	N	37		
1000	GE	10	1	1	GE	1000	1	SS	Re	Re	De	De	WE	24	545	H ₂ Li HC	BM	BM	DP	N	N	38		
1000	GE	10	1	1	GE	1000	1	SS	Re	Re	De	De	WE	24	545	H ₂ Li HC	BM	BM	DP	N	N	39		
1000	GE	10	1	1	GE	1000	1	SS	Re	Re	De	De	WE	24	545	H ₂ Li HC	BM	BM	DP	N	N	40		
1000	GE	10	1	1	GE	1000	1	SS	Re	Re	De	De	WE	24	545	H ₂ Li HC	BM	BM	DP	N	N	41		
1000	GE	10	1	1	GE	1000	1	SS	Re	Re	De	De	WE	24	545	H ₂ Li HC	BM	BM	DP	N	N	42		
1000	GE	10	1	1	GE	1000	1	SS	Re	Re	De	De	WE	24	545	H ₂ Li HC	BM	BM	DP	N	N	43		
1000	GE	10	1	1	GE	1000	1	SS	Re	Re	De	De	WE	24	545	H ₂ Li HC	BM	BM	DP	N	N	44		
1000	GE	10	1	1	GE	1000	1	SS	Re	Re	De	De	WE	24	545	H ₂ Li HC	BM	BM	DP	N	N	45		
1000	GE	10	1	1	GE	1000	1	SS	Re	Re	De	De	WE	24	545	H ₂ Li HC	BM	BM	DP	N	N	46		
1000	GE	10	1	1	GE	1000	1	SS	Re	Re	De	De	WE	24	545	H ₂ Li HC	BM	BM	DP	N	N	47		
1000	GE	10	1	1	GE	1000	1	SS	Re	Re	De	De	WE	24	545	H ₂ Li HC	BM	BM	DP	N	N	48		
1000	GE	10	1	1	GE	1000	1	SS	Re	Re	De	De	WE	24	545	H ₂ Li HC	BM	BM	DP	N	N	49		
1000	GE	10	1	1	GE	1000	1	SS	Re	Re	De	De	WE	24	545	H ₂ Li HC	BM	BM	DP	N	N	50		

- 6 - jointly with Davton Power and Light Co
- 7 - and Southern Ohio Electric Co
- 8 - Attenuator in emergency
- 9 - Water spray in emergency
- 10 - Two-hour peak capacity 180,000 lb per hr
- 11 - Turbine No. 6 boiler No. 1
- 12 - Brown No. 3
- 13 - No. 1 respectively
- 14 - 1000 lb per hr
- 15 - Nine future coal burners installed
- 16 - On coal and gas respectively
- 17 - On coal and gas respectively
- 18 - On coal and gas respectively
- 19 - Coal and gas respectively
- 20 - Once-through startup system, with super-critical heat exchanger, no flash tank
- 21 - Main control by feedwater/turbine balance
- 22 - Main and standby pumps respectively
- 23 - Sublimous
- 24 - On auxiliary or emergency fuel
- 25 - Use of alternate motors
- 26 - On in emergency, provision for future coal firing
- 27 - One 225 ton per hr coal crusher
- 28 - Closed heater manufacturer not yet selected
- 29 - Heater and deaerator respectively
- 30 - Makeup and condensate treatment respectively
- 31 - Removeable housing over turbine
- 32 - Turbine has automatic extraction, supplies district heating steam to city
- 33 - Turbine or spinning reserve, data is for peaking at 5% overpressure
- 34 - Hypocritical cooling towers
- 35 - Integrated boiler-turbine control
- 36 - Furnace and coal handling respectively

1 CENTRAL STATIONS

Steam pressures continue to climb; temperature

Each project listing covers 4 pages

PROJECT	COMPANY	LOCATION	PLANT NAME	CONSULTING ENGINEER	Unit No., New unit	Date last operation	Unit capacity, mw	BOILER			
								Capacity, 1000 lb. per hr.	Throttle pressure, psig	STEAM, F.	
										Throttle	Reheat
1	Conemaugh Group	West Wheatfield, Pa.	Conemaugh	Gilbert Assoc., Inc.	1,24	1970	900	5350	1675	1000	1000
2	Southern California Edison Co.	Farmington, NM	Four Corners	Bechtel Corp.	4,34	1967	755	3446	1500	1000	1000
3	Pacific Gas and Electric Co.	Monterey, Calif.	Moss Landing	Stone & Webster Engr. Corp.	5,14	1967	110	5120	1675	1000	1000
4	Kentucky Electric and Power Co.	Chester, Va.	Chesterfield	Stone & Webster Engr. Corp.	5	1969	510	1629	1521	1000	1000
5	Pennsylvania Electric Co.	Homer City, Pa.	Homer City	Gilbert Assoc., Inc.	1,24	1970	565	4500	1500	1000	1000
6	Public Service Electric and Gas Co.	Jersey City, N.J.	Hudson	Stone & Webster Engr. Corp.	2	10-68	620	1300	1575	1200	1025
7	Commonwealth Edison Co.	Kincaid, Ill.	Kincaid	Sargent & Lundy	2	1-63	610	1210	1570	1200	1000
8	New England Electric Systems	Warehams, Mass.	Bayview Point	Stone & Webster Engr. Corp.	3	1-69	513	1250	1575	1200	1025
9	Texas Power & Light Co.	Davut, Texas	Villev	Brown & Root, Inc.	2	11-67	532	2310	1500	1305	1005
10	Hydro-Elec. Commission of Ontario	Samia, Ont., Can.	Lytton	Bechtel Corp.	1,14	1970	500	1500	2250	1000	1000
11	Florida Power Corp.	Red Level, Fla.	Crystal River	Black & Veatch	2	1-69	475	1067	1431	1000	1000
12	Southern California Edison Co.	Redondo Beach, Calif.	Redondo Beach	Bechtel Corp.	7,34	1967	450	1315	1520	1000	1000
13	Cincinnati Gas & Electric Co.	New Richmond, Ohio	Walter C. Beckford	Sargent & Lundy	5	9-66	424	1250	1470	1200	1000
14	Florida Power & Light Co.	Cocoa, Fla.	Cape Kennedy	Bechtel Corp.	2	11-68	432	1240	1400	1000	1000
15	Florida Power & Light Co.	Tice, Fla.	Fort Myers	Bechtel Corp.	2	1-69	432	1240	1400	1005	1000
16	Indianapolis Power & Light Co.	Petersburg, Ind.	Petersburg	Stone & Webster Engr. Corp.	2	1-69	430	1200	1521	1200	1000
17	Oklahoma Gas & Electric Co.	Horseshoe Lake, Okla.	Horseshoe Lake	Brown & Root, Inc.	3	5-63	404	1140	1530	1000	1000
18	Missouri Public Service Co.	Snider, Mo.	Snider	Gilbert Assoc., Inc.	3	1969	356	1524	1500	1000	1000
19	Hydro-Elec. Commission of Ontario	Toronto, Ont., Can.	Lakeview	Bechtel Corp.	1,34	1968	300	1200	2250	1000	1000
20	Louisville Gas and Electric Co.	Louisville, Ky.	Cane Run	Pioneer Service & Engr. Co.	6	5-69	250	1253	1400	1000	1000
21	Central Power & Light Co.	Victoria, Texas	Victoria	Sargent & Lundy	5	1-68	230	1162	2000	1000	1000
22	Ontario Edison Co.	Oregon, Ohio	Bay Shore	Gilbert & Hill, Inc.	4	9-68	220	1105	1550	1050	1005
23	San Power & Light Co.	Kemmerer, Wyo.	Vaughton SE	Bechtel Corp.	2	10-68	179	1000	1000	1005	1005
24	Gas & Electric Power Co.	Stanton, North Dak.	Leard Oaks	R.W. Beck & Assoc.	1	11-65	216	1310	1400	1000	1000
25	Southwestern Public Service Co.	Amarillo, Texas	Victoria	Bechtel Corp.	3	7-68	213	1135	1300	1200	1000
26	Louisville Gas and Electric Co.	Louisville, Ky.	Cane Run	Pioneer Service & Engr. Co.	5	5-68	180	1160	1300	1005	1000
27	Tucson Gas & Electric Co.	Tucson, Ariz.	Livingston	Sanborn & Porter, Inc.	4	9-67	165	1140	1390	1000	1000
28	Delaware Power & Light Co.	Wilmington, Del.	Star Moor	United Engineers & Constructors, Inc.	4	1-66	150	1084	1300	1200	1000
29	British Columbia Hydro and Power Authority	Coquitlam, B.C., Can.	Stard	International Power Engr. Consultants Ltd.	3	1965	150	1150	1200	1010	1000
30	Wisconsin Electric Power Co.	Milwaukee, Wis.	Milwaukee	Stone & Webster Engr. Corp.	1	5-68	140	1140	1523	900	1000
31	Nevada Power Co.	Moapa, Nev.	Reid Gardner	Stearns-Roxer Corp.	2	1-68	121	1115	1391	1000	1000
32	Delta Pacific Power Co.	Reed, Nev.	Mason Valley	Stone & Webster Engr. Corp.	2	5-68	125	1170	1390	1000	1000
33	Upper Peninsula Generating Co.	Marquette, Mich.	Pesque Isle	Stone & Webster Michigan, Inc.	4	12-66	113	1175	1450	1005	1000
34	Community Public Service Co.	Lordsburg, N.M.	Lordsburg	Stone & Webster Engr. Corp.	4	3-67	112	1100	1350	900	1000

MUNICIPAL AND COOPERATIVE INSTALLATIONS

35	City of Jacksonville	Jacksonville, Fla.	Yardside	Reynolds, Smith and Hills	2	5-66	175	1120	1100	1000	1000
36	City of San Antonio	Bexar County, Texas	Victor drawing	Brown & Root, Inc.	2	1-68	155	1100	1175	1005	1005
37	City of Springfield	Springfield, Ill.	A.Y. Daiman	Burns & McDonnell Engr. Co.	2	1-67	135	1171	1050	950	1000
38	City of Independence	Independence, Mo.	Blue Valley	Black & Veatch	1	1-65	125	1100	1150	955	1000
39	Eastern Iowa Light and Power Cooperative	Montpelier, Iowa	Montpelier	Stanley Engineering Co.	2	4-67	110	1085	1050	900	1000
40	City of Columbia	Columbia, Mo.	Municipal	Lutz, Davis & Brain	5,12	5-65	104	1140	1050	900	1000
41	South Texas Electric Cooperative	Muskegon, Texas	Sam Rayburn	Lutz, Davis & Brain	2	1-65	114	1100	1050	900	1000
42	Hastings Island Municipal Electric	Hastings, Neb.	Municipal	Sargent & Lundy	5	1-67	111	1150	1050	900	1000
43	Western Michigan Electric Cooperative	Bayne City, Mich.	Bayne City	Stanley Engineering Co.	2	1-67	111	1150	1050	900	1000
44	Western Iowa Power Cooperative	Payson, Wyo.	Payson	Stanley Engineering Co.	2	1-65	111	1150	1050	900	1000
45	City of Everett	Everett, Wash.	Municipal	Tipton & Lee	1	1-66	111	1150	1050	900	1000
46	City of Everett	Everett, Wash.	Draper Parkway	Stearns-Roxer Corp.	1	1-66	111	1150	1050	900	1000
47	City of Everett	Everett, Wash.	Draper Parkway	Stearns-Roxer Corp.	1	1-66	111	1150	1050	900	1000
48	City of Everett	Everett, Wash.	Draper Parkway	Stearns-Roxer Corp.	1	1-66	111	1150	1050	900	1000
49	City of Everett	Everett, Wash.	Draper Parkway	Stearns-Roxer Corp.	1	1-66	111	1150	1050	900	1000
50	City of Everett	Everett, Wash.	Draper Parkway	Stearns-Roxer Corp.	1	1-66	111	1150	1050	900	1000

MANUFACTURING

51	City of Everett	Everett, Wash.	Draper Parkway	Stearns-Roxer Corp.	1	1-66	111	1150	1050	900	1000
52	City of Everett	Everett, Wash.	Draper Parkway	Stearns-Roxer Corp.	1	1-66	111	1150	1050	900	1000
53	City of Everett	Everett, Wash.	Draper Parkway	Stearns-Roxer Corp.	1	1-66	111	1150	1050	900	1000
54	City of Everett	Everett, Wash.	Draper Parkway	Stearns-Roxer Corp.	1	1-66	111	1150	1050	900	1000
55	City of Everett	Everett, Wash.	Draper Parkway	Stearns-Roxer Corp.	1	1-66	111	1150	1050	900	1000
56	City of Everett	Everett, Wash.	Draper Parkway	Stearns-Roxer Corp.	1	1-66	111	1150	1050	900	1000
57	City of Everett	Everett, Wash.	Draper Parkway	Stearns-Roxer Corp.	1	1-66	111	1150	1050	900	1000
58	City of Everett	Everett, Wash.	Draper Parkway	Stearns-Roxer Corp.	1	1-66	111	1150	1050	900	1000
59	City of Everett	Everett, Wash.	Draper Parkway	Stearns-Roxer Corp.	1	1-66	111	1150	1050	900	1000
60	City of Everett	Everett, Wash.	Draper Parkway	Stearns-Roxer Corp.	1	1-66	111	1150	1050	900	1000

...all-Rand Co
 ...Water Treatment Co
 ...cturing Co
 ...), Inc
 ...s Co
 ...Water Conditioning
 ...Dynamic and Civil
 ...and Northrup, Inc
 ...Locomotive Works
 ...Co
 ...and Plant, Ltd
 ...Roy Co

...all-Rand Co
 ...Water Treatment Co
 ...cturing Co
 ...), Inc
 ...s Co
 ...Water Conditioning
 ...Dynamic and Civil
 ...and Northrup, Inc
 ...Locomotive Works
 ...Co
 ...and Plant, Ltd
 ...Roy Co

STN	- Struthers-Wells Corp.
SW	- Sylvania Div.
	- Westinghouse Electric Corp.
SWE	- Southwest Engineering Co.
U	- Union Iron Works
WE	- Westinghouse Electric Corp.
WB	- Winkels-Baker Co. Sub of Wickes
WM	- Wm. H. May Co.
WC	- Washington Corp.
WF	- Western Precastment Div. of Wm. H. May Co.
WU	- Woodward-Clyde Industries, Inc.

SYMBOLS	
Ad	- Admiralty
ADD	- Admiralty, type C
Ad	- Admiralty, inhibited
AlB	- Aluminum brass
An	- Antracite
ASAd	- Arsenical admiralty
ASCu	- Arsenical Copper
At	- Atomizers
Bal	- Balanced
B	- Brass
Bv	- Gas bypass

Turbines are predominantly indoors, or under a removable housing

PROJECT	BOILER FEED PUMPS						FUEL		FIRING		SOOT		DUST		HEATER						
	Capacity, cc, gpm	Discharge, psi	Manufacturer	Flow control	Drive type	DRIVE		Type	1000 Btu per lb	Pounds per boiler	Manufacturer	Blower type	Blowing medium	Manufacturer	Collector type	Manufacturer	Stack height, ft	Number	Feedwater exit, F	Max decelerating pressure, psi	Manufacturer
						Hypack motor or turbine	Manufacturer														
1	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
2	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
3	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
4	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
5	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
6	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
7	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
8	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
9	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
10	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
11	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
12	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
13	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
14	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
15	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
16	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
17	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
18	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
19	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
20	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
21	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
22	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
23	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
24	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
25	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
26	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
27	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
28	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
29	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
30	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
31	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
32	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
33	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
34	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
35	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
36	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
37	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
38	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
39	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
40	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
41	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
42	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
43	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
44	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
45	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
46	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
47	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
48	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
49	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
50	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
51	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
52	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
53	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
54	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
55	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
56	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
57	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
58	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
59	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
60	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
61	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
62	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
63	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
64	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
65	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
66	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
67	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
68	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
69	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
70	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
71	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
72	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
73	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
74	1000	1000	DL	4VC	2M MTS	15,000	DL	C	12.2	5	CE	Ro Ret	Air	CV	El	RC	1000	14	350	175	CCC
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- SI - Sling - 2000
T - Sling tap
TB - Turbine
TC - Tilting beam
VS - Tandem
WS - Vane control
WS - Water spray
- FOOTNOTES
1 - Outdoor
2 - Btu per cu ft
3 - Cyclone filter

FOOTNOTES
1 - Quadoc
2 - Btu per cu ft
3 - Cyclone filter