



Central Stations

Design features of typical new steam C

Note that each listing covers four pages. The project number helps you keep track of a specific installation after you turn the page facing

Project Number

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

31

32

33

34

35

36

37

38

39

40

41

42

43

44

45

46

47

48

49

50

51

52

53

54

55

56

57

58

59

60

61

62

63

64

65

66

67

68

69

70

71

72

73

74

75

76

77

78

79

80

81

82

83

84

85

86

87

88

89

90

91

92

93

94

95

96

97

98

99

100

101

102

103

104

105

106

107

108

109

110

111

112

113

114

115

116

117

118

119

120

121

122

123

124

125

126

127

128

129

130

131

132

133

134

135

136

137

138

139

140

141

142

143

144

145

146

147

148

149

150

151

152

153

154

155

156

157

158

159

160

161

162

163

164

165

166

167

168

169

170

171

172

173

174

175

176

177

178

179

180

181

182

183

184

185

186

187

188

189

190

191

192

193

194

195

196

197

198

199

200

201

202

203

204

205

206

207

208

209

210

211

212

213

214

215

216

217

218

219

220

221

222

223

224

225

226

227

228

229

230

231

232

233

234

235

236

237

238

239

240

241

242

243

244

245

246

247

248

249

250

251

252

253

254

255

256

257

258

259

260

261

262

263

264

265

266

267

268

269

270

271

272

273

274

275

276

277

278

279

280

281

282

283

284

285

286

287

288

289

290

291

292

293

294

295

central-station utility installations

Project Number	Project Name	Location	Size	Year	Contractor	Engineer	Owner	Notes
101	...	...	...	...	...	...	...	...
102	...	...	...	...	...	...	...	...
103	...	...	...	...	...	...	...	...
104	...	...	...	...	...	...	...	...
105	...	...	...	...	...	...	...	...
106	...	...	...	...	...	...	...	...
107	...	...	...	...	...	...	...	...
108	...	...	...	...	...	...	...	...
109	...	...	...	...	...	...	...	...
110	...	...	...	...	...	...	...	...
111	...	...	...	...	...	...	...	...
112	...	...	...	...	...	...	...	...
113	...	...	...	...	...	...	...	...
114	...	...	...	...	...	...	...	...
115	...	...	...	...	...	...	...	...
116	...	...	...	...	...	...	...	...
117	...	...	...	...	...	...	...	...
118	...	...	...	...	...	...	...	...
119	...	...	...	...	...	...	...	...
120	...	...	...	...	...	...	...	...
121	...	...	...	...	...	...	...	...
122	...	...	...	...	...	...	...	...
123	...	...	...	...	...	...	...	...
124	...	...	...	...	...	...	...	...
125	...	...	...	...	...	...	...	...
126	...	...	...	...	...	...	...	...
127	...	...	...	...	...	...	...	...
128	...	...	...	...	...	...	...	...
129	...	...	...	...	...	...	...	...
130	...	...	...	...	...	...	...	...
131	...	...	...	...	...	...	...	...
132	...	...	...	...	...	...	...	...
133	...	...	...	...	...	...	...	...
134	...	...	...	...	...	...	...	...
135	...	...	...	...	...	...	...	...
136	...	...	...	...	...	...	...	...
137	...	...	...	...	...	...	...	...
138	...	...	...	...	...	...	...	...
139	...	...	...	...	...	...	...	...
140	...	...	...	...	...	...	...	...
141	...	...	...	...	...	...	...	...
142	...	...	...	...	...	...	...	...
143	...	...	...	...	...	...	...	...
144	...	...	...	...	...	...	...	...
145	...	...	...	...	...	...	...	...
146	...	...	...	...	...	...	...	...
147	...	...	...	...	...	...	...	...
148	...	...	...	...	...	...	...	...
149	...	...	...	...	...	...	...	...
150	...	...	...	...	...	...	...	...
151	...	...	...	...	...	...	...	...
152	...	...	...	...	...	...	...	...
153	...	...	...	...	...	...	...	...
154	...	...	...	...	...	...	...	...
155	...	...	...	...	...	...	...	...
156	...	...	...	...	...	...	...	...
157	...	...	...	...	...	...	...	...
158	...	...	...	...	...	...	...	...
159	...	...	...	...	...	...	...	...
160	...	...	...	...	...	...	...	...
161	...	...	...	...	...	...	...	...
162	...	...	...	...	...	...	...	...
163	...	...	...	...	...	...	...	...
164	...	...	...	...	...	...	...	...
165	...	...	...	...	...	...	...	...
166	...	...	...	...	...	...	...	...
167	...	...	...	...	...	...	...	...
168	...	...	...	...	...	...	...	...
169	...	...	...	...	...	...	...	...
170	...	...	...	...	...	...	...	...
171	...	...	...	...	...	...	...	...
172	...	...	...	...	...	...	...	...
173	...	...	...	...	...	...	...	...
174	...	...	...	...	...	...	...	...
175	...	...	...	...	...	...	...	...
176	...	...	...	...	...	...	...	...
177	...	...	...	...	...	...	...	...
178	...	...	...	...	...	...	...	...
179	...	...	...	...	...	...	...	...
180	...	...	...	...	...	...	...	...
181	...	...	...	...	...	...	...	...
182	...	...	...	...	...	...	...	...
183	...	...	...	...	...	...	...	...
184	...	...	...	...	...	...	...	...
185	...	...	...	...	...	...	...	...
186	...	...	...	...	...	...	...	...
187	...	...	...	...	...	...	...	...
188	...	...	...	...	...	...	...	...
189	...	...	...	...	...	...	...	...
190	...	...	...	...	...	...	...	...
191	...	...	...	...	...	...	...	...
192	...	...	...	...	...	...	...	...
193	...	...	...	...	...	...	...	...
194	...	...	...	...	...	...	...	...
195	...	...	...	...	...	...	...	...
196	...	...	...	...	...	...	...	...
197	...	...	...	...	...	...	...	...
198	...	...	...	...	...	...	...	...
199	...	...	...	...	...	...	...	...
200	...	...	...	...	...	...	...	...

Project Number

MANUFACTURERS

101	...	...	...	...	...	...	...	...
102	...	...	...	...	...	...	...	...
103	...	...	...	...	...	...	...	...
104	...	...	...	...	...	...	...	...
105	...	...	...	...	...	...	...	...
106	...	...	...	...	...	...	...	...
107	...	...	...	...	...	...	...	...
108	...	...	...	...	...	...	...	...
109	...	...	...	...	...	...	...	...
110	...	...	...	...	...	...	...	...
111	...	...	...	...	...	...	...	...
112	...	...	...	...	...	...	...	...
113	...	...	...	...	...	...	...	...
114	...	...	...	...	...	...	...	...
115	...	...	...	...	...	...	...	...
116	...	...	...	...	...	...	...	...
117	...	...	...	...	...	...	...	...
118	...	...	...	...	...	...	...	...
119	...	...	...	...	...	...	...	...
120	...	...	...	...	...	...	...	...
121	...	...	...	...	...	...	...	...
122	...	...	...	...	...	...	...	...
123	...	...	...	...	...	...	...	...
124	...	...	...	...	...	...	...	...
125	...	...	...	...	...	...	...	...
126	...	...	...	...	...	...	...	...
127	...	...	...	...	...	...	...	...
128	...	...	...	...	...	...	...	...
129	...	...	...	...	...	...	...	...
130	...	...	...	...	...	...	...	...
131	...	...	...	...	...	...	...	...
132	...	...	...	...	...	...	...	...
133	...	...	...	...	...	...	...	...
134	...	...	...	...	...	...	...	...
135	...	...	...	...	...	...	...	...
136	...	...	...	...	...	...	...	...
137	...	...	...	...	...	...	...	...
138	...	...	...	...	...	...	...	...
139	...	...	...	...	...	...	...	...
140	...	...	...	...	...	...	...	...
141	...	...	...	...	...	...	...	...
142	...	...	...	...	...	...	...	...
143	...	...	...	...	...	...	...	...
144	...	...	...	...	...	...	...	...
145	...	...	...	...	...	...	...	...
146	...	...	...	...	...	...	...	...
147	...	...	...	...	...	...	...	...
148	...	...	...	...	...	...	...	...
149	...	...	...	...	...	...	...	...
150	...	...	...	...	...	...	...	...
151	...	...	...	...	...	...	...	...
152	...	...	...	...	...	...	...	...
153	...	...	...	...	...	...	...	...
154	...	...	...	...	...	...	...	...
155	...	...	...	...	...	...	...	...
156	...	...	...	...	...	...	...	...
157	...	...	...	...	...	...	...	...
158	...	...	...	...	...	...	...	...
159	...	...	...	...	...	...	...	...
160	...	...	...	...	...	...	...	...
161	...	...	...	...	...	...	...	...
162	...	...	...	...	...	...	...	...
163	...	...	...	...	...	...	...	...
164	...	...	...	...	...	...	...	...
165	...	...	...	...	...	...	...	...
166	...	...	...	...	...	...	...	...
167	...	...	...	...	...	...	...	...
168	...	...	...	...	...	...	...	...
169	...	...	...	...	...	...	...	...
170	...	...	...	...	...	...	...	...
171	...	...	...	...	...	...	...	...
172	...	...	...	...	...	...	...	...
173	...	...	...	...	...	...	...	...
174	...	...	...	...	...	...	...	...
175	...	...	...	...	...	...	...	...
176	...	...	...	...	...	...	...	...
177	...	...	...	...	...	...	...	...
178	...	...	...	...	...	...	...	...
179	...	...	...	...	...	...	...	...
180	...	...	...	...	...	...	...	...
181	...	...	...	...	...	...	...	...
182	...	...	...	...	...	...	...	...
183	...	...	...	...	...	...	...	...
184	...	...	...	...	...	...	...	...
185	...	...	...	...	...	...	...	...
186	...	...	...	...	...	...	...	...
187	...	...	...	...	...	...	...	...
188	...	...	...	...	...	...	...	...
189	...	...	...	...	...	...	...	...
190	...	...	...	...	...	...	...	...
191	...	...	...	...	...	...	...	...
192	...	...	...	...	...	...	...	...
193	...	...	...	...	...	...	...	...
194	...	...	...	...	...	...	...	...
195	...	...	...	...	...	...	...	...
196	...	...	...	...	...	...	...	...
197	...	...	...	...	...	...	...	...
198	...	...	...	...	...	...	...	...
199	...	...	...	...	...	...	...	...
200	...	...	...	...	...	...	...	...

Steam and hot-water systems for

Note that each listing covers four pages. The project number helps you keep track of a specific installation after you turn the page facing

Project Number

Company

Location

Consulting engineer

Plant or existing plant	Date of installation	Principal steam use	Type of new boiler	Manufacturer	Operating pressure, psig	Operating temperature, F	Boiler type	Capacity each 1000 lb per hr (High value, million Btu per hr)	Boiler and accessories	Economizer	Superheater	Air preheater	Feedwater pump

1. PAPER & PULP MILLS TURBINE GENERATORS 250 psig and above

1	Bartley Power Sta. Ext #2 R Reynolds Tobacco Co	Winston Salem, N.C.	Stone & Webster Engrg Corp	Ex	1964	Ps Pr	3W	1300	325	WTF	200	4.0	7.3
2	Eastman Kodak Co. (Kodak Paper Mill)	East Chicago, Ind.	Bechtel Corp	New	1963	Ps Pr	SW	1050	755	WTF	250	24.9	17.1
3	Eastman Kodak Co. (Kodak Paper Mill)	East Chicago, Ind.	Sargent & Lundy	Ex	1962	Sh	SW	875	760	WTF	150	3.1	17
4	International Paper Co	Kalamazoo, Mich.	Benjamin Woodhous & Guenier Inc	Ex	1962	Ps	WIB	350	750	WTF	100	18.6	4.2
5	International Paper Co	Kalamazoo, Mich.	H.A. Simons, Ltd	Ex	1963	Ps Pr	3W	725	750	WTF	407	39.0	—
6	Rockdale Village Inc	Rockdale, N.Y.	Day & Zimmermann Inc	New	1963	Ps Pr	UR	550	950	WTF	120	—	—
7	A & M College of Texas	College Station, Tex.	Bayou Engineers Inc	Ex	1963	Ps	ED	100	750	WTF	75	12.1	1.2
8	University of Texas	College Station, Tex.	Bayou Engineers Inc	New	1963	Ps Sh	ED	500	725	WTF	50	7.7	—
9	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps	3W	500	750	WTF	135	38.0	—
10	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps	3W	500	750	WTF	135	38.0	—
11	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	New	1963	Ps	CE	900	750	WTF	33	25.0	3.0
12	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	New	1963	Ps	UR	500	750	WTF	110	12.1	1.4
13	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1964	Ps Pr	3W	450	700	WTF	120	20.0	2.9
14	North Carolina Finishing Co	Sauratown, N.C.	J.E. Serrine Co	Ex	1963	Ps	RS	425	580	WTF	109	—	1.0
15	North Carolina Finishing Co	Sauratown, N.C.	Norman P. Riggs Co & Aff	Ex	1964	Ps	SC	425	750	WTF	120	11.1	1.6
16	North Carolina Finishing Co	Sauratown, N.C.	Reese Evans & Robbins	Ex	1963	Ps	3W	415	650	WTF	200	11.8	1.1
17	North Carolina Finishing Co	Sauratown, N.C.	McIntosh & Co	New	1963	Ps Sh	WFW	275	410	WTF	25	2.2	—

2. PAPER & PULP MILLS TURBINE GENERATORS 250 psig and above

18	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps Pr	3W	1100	300	WTF	150	23.4	4.0
19	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps Pr	3W	375	760	WTF	200	4.1	3.7
20	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1964	Ps	3W	550	750	WTF	150	12.0	1.5
21	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1964	Ps	3W	550	750	WTF	150	12.0	1.5
22	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps	3W	525	725	WTF	30	—	—
23	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps	3W	525	725	WTF	30	—	—
24	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	New	1963	Ps	3W	500	650	WTF	30	4.4	1.8
25	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps	3W	500	750	WTF	140	16.0	—
26	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps	3W	500	675	WTF	175	20.0	—
27	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	New	1963	Ps	CE	600	750	WTF	220	14.0	2.0
28	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps Pr	3W	500	750	WTF	400	—	—
29	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps	3W	500	488	WTF	80	5.0	1.0
30	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps	3W	500	488	WTF	80	5.0	1.0
31	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps	3W	500	488	WTF	80	5.0	1.0
32	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps	3W	500	488	WTF	80	5.0	1.0
33	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps	3W	500	488	WTF	80	5.0	1.0
34	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps	3W	500	488	WTF	80	5.0	1.0
35	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps	3W	500	488	WTF	80	5.0	1.0
36	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps	3W	500	488	WTF	80	5.0	1.0
37	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps	3W	500	488	WTF	80	5.0	1.0
38	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps	3W	500	488	WTF	80	5.0	1.0
39	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps	3W	500	488	WTF	80	5.0	1.0
40	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps	3W	500	488	WTF	80	5.0	1.0
41	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps	3W	500	488	WTF	80	5.0	1.0
42	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps	3W	500	488	WTF	80	5.0	1.0
43	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps	3W	500	488	WTF	80	5.0	1.0
44	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps	3W	500	488	WTF	80	5.0	1.0
45	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps	3W	500	488	WTF	80	5.0	1.0
46	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps	3W	500	488	WTF	80	5.0	1.0
47	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps	3W	500	488	WTF	80	5.0	1.0
48	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps	3W	500	488	WTF	80	5.0	1.0
49	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps	3W	500	488	WTF	80	5.0	1.0
50	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps	3W	500	488	WTF	80	5.0	1.0

3. PAPER & PULP MILLS TURBINE GENERATORS 250 psig and above

51	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps Pr	3W	400	550	WTF	60	3.1	3.2
52	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps Pr	3W	400	550	WTF	60	3.1	3.2
53	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps Pr	3W	400	550	WTF	60	3.1	3.2
54	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps Pr	3W	400	550	WTF	60	3.1	3.2
55	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps Pr	3W	400	550	WTF	60	3.1	3.2
56	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps Pr	3W	400	550	WTF	60	3.1	3.2
57	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps Pr	3W	400	550	WTF	60	3.1	3.2
58	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps Pr	3W	400	550	WTF	60	3.1	3.2
59	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps Pr	3W	400	550	WTF	60	3.1	3.2
60	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps Pr	3W	400	550	WTF	60	3.1	3.2
61	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps Pr	3W	400	550	WTF	60	3.1	3.2
62	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps Pr	3W	400	550	WTF	60	3.1	3.2
63	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps Pr	3W	400	550	WTF	60	3.1	3.2
64	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps Pr	3W	400	550	WTF	60	3.1	3.2
65	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps Pr	3W	400	550	WTF	60	3.1	3.2
66	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps Pr	3W	400	550	WTF	60	3.1	3.2
67	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps Pr	3W	400	550	WTF	60	3.1	3.2
68	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps Pr	3W	400	550	WTF	60	3.1	3.2
69	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps Pr	3W	400	550	WTF	60	3.1	3.2
70	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps Pr	3W	400	550	WTF	60	3.1	3.2
71	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps Pr	3W	400	550	WTF	60	3.1	3.2
72	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps Pr	3W	400	550	WTF	60	3.1	3.2
73	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps Pr	3W	400	550	WTF	60	3.1	3.2
74	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps Pr	3W	400	550	WTF	60	3.1	3.2
75	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps Pr	3W	400	550	WTF	60	3.1	3.2
76	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps Pr	3W	400	550	WTF	60	3.1	3.2
77	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps Pr	3W	400	550	WTF	60	3.1	3.2
78	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps Pr	3W	400	550	WTF	60	3.1	3.2
79	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps Pr	3W	400	550	WTF	60	3.1	3.2
80	International Paper Co	Fort Erie, Ont., Canada	H.A. Simons, Ltd	Ex	1963	Ps Pr	3W	400	550	WTF	60	3.1	3.2

MANUFACTURERS

AC	Armstrong Engineers Ltd	BM	Baker Meter Co	CDW	Frederick Cowan & Co	ENG	Engineer Co
AD	Armstrong Engineers Ltd	BPC	Baker Pump Co	CS	Canadian Service Ltd	F	Forced Air
AE	Armstrong Engineers Ltd	BU	Baker Engineering Co	CU	Cuba Service Co	FE	Field Engineering Co
AF	Armstrong Engineers Ltd	BW	Baker & Whittier Co	CB	Blowback Co	FEC	Fiber Engineering Co
AG	Armstrong Engineers Ltd	BA	Baker Co	DB	Dominion Bridge Ltd	FA	Fire Alarm Engineering Co
AH	Armstrong Engineers Ltd	CA	C.A. Parsons Ltd	DE	Deaton Chemical Co	FO	Forney Engineering
AI	Armstrong Engineers Ltd	CBE	Chain Belt Co	DF	Detroit Steam Turbine Co	FW	Foster Wheeler Corp
AJ	Armstrong Engineers Ltd	CE	Combustion Engineering Inc	DO	Dominion Power Services Corp	GE	General Electric Co
AK	Armstrong Engineers Ltd	CF	Clayton Fire Co	DSC	Detroit Steam Turbine Co	GF	Green Fuel Engineering
AL	Armstrong Engineers Ltd	CDE	Clayton Electric Co	EC	Electric Corp of America	GP	Guilford Pumps, Inc
AM	Armstrong Engineers Ltd	CDS	Clayton & Sons Co	ECA	Electric Corp of America	IE	Industrial Engineering
AN	Armstrong Engineers Ltd	CLE	Clayton Engineering Co	ED	Electric Dynamics Div	GW	Granger Water Control
AO	Armstrong Engineers Ltd	CL	Clayton Co	EE	Electric Dynamics Corp	H	Harsco Corp
AP	Armstrong Engineers Ltd	CPC	Clayton & Co	EL	Electric Dynamics Corp	HCC	Hagan Chemicals & Co
AQ	Armstrong Engineers Ltd	CPE	Clayton Engineering Corp	EL	Electric Dynamics Corp	HCE	Horton Combustion

ns for industrial plants and institutional buildings

[illegible][illegible]

18. 10/10/2010
 19. 10/10/2010
 20. 10/10/2010
 21. 10/10/2010
 22. 10/10/2010
 23. 10/10/2010
 24. 10/10/2010
 25. 10/10/2010
 26. 10/10/2010
 27. 10/10/2010
 28. 10/10/2010
 29. 10/10/2010
 30. 10/10/2010
 31. 10/10/2010
 32. 10/10/2010
 33. 10/10/2010
 34. 10/10/2010
 35. 10/10/2010
 36. 10/10/2010
 37. 10/10/2010
 38. 10/10/2010
 39. 10/10/2010
 40. 10/10/2010
 41. 10/10/2010
 42. 10/10/2010
 43. 10/10/2010
 44. 10/10/2010
 45. 10/10/2010
 46. 10/10/2010
 47. 10/10/2010
 48. 10/10/2010
 49. 10/10/2010
 50. 10/10/2010
 51. 10/10/2010
 52. 10/10/2010
 53. 10/10/2010
 54. 10/10/2010
 55. 10/10/2010
 56. 10/10/2010
 57. 10/10/2010
 58. 10/10/2010
 59. 10/10/2010
 60. 10/10/2010
 61. 10/10/2010
 62. 10/10/2010
 63. 10/10/2010
 64. 10/10/2010
 65. 10/10/2010
 66. 10/10/2010
 67. 10/10/2010
 68. 10/10/2010
 69. 10/10/2010
 70. 10/10/2010
 71. 10/10/2010
 72. 10/10/2010
 73. 10/10/2010
 74. 10/10/2010
 75. 10/10/2010
 76. 10/10/2010
 77. 10/10/2010
 78. 10/10/2010
 79. 10/10/2010
 80. 10/10/2010
 81. 10/10/2010
 82. 10/10/2010
 83. 10/10/2010
 84. 10/10/2010
 85. 10/10/2010
 86. 10/10/2010
 87. 10/10/2010
 88. 10/10/2010
 89. 10/10/2010
 90. 10/10/2010
 91. 10/10/2010
 92. 10/10/2010
 93. 10/10/2010
 94. 10/10/2010
 95. 10/10/2010
 96. 10/10/2010
 97. 10/10/2010
 98. 10/10/2010
 99. 10/10/2010
 100. 10/10/2010

PE	Reliance Electric & Engine Co
PE	Ray Electric Co
EE	Reynolds Film Mfg Co
EE	Rice Motor Corp
EE	Rubenstein & Herman Co
EE	Stearns & Adams Inc Co
EE	Stearns & Baker Co
EE	Stearns & Co. Westborough Stearns Corp
EE	St. Louis Machine Co
EE	Thos Stearns & Co. Products Co.
EE	United Conveyor Corp
EE	United Machine Tool Pumps and Pump Co
EE	Van Sledright

- US - U.S. Electrical Motors Inc.
- VC - Mercury Motor Machine Co.
- WE - Westinghouse Electric Corp.
- WB - Western Beam Co.
- WMC - Western Machine Co.
- WO - Worthington Corp.
- WP - Western Pipe & Lumber Co.
- WS - Wilson-Snyder Mfg. & Equip. Co.

SYMBOLS USED: AE = F
AE = Auto extraction
n-g = Average
So = Sugars
ED = Balanced diet
EE = Eucalyptus etc.

1.2	2.2	3.2	4.2	5.2	6.2	7.2	8.2	9.2	10.2	11.2	12.2	13.2	14.2	15.2	16.2	17.2	18.2	19.2	20.2	21.2	22.2	23.2	24.2	25.2	26.2	27.2	28.2	29.2	30.2	31.2	32.2	33.2	34.2	35.2	36.2	37.2	38.2	39.2	40.2	41.2	42.2	43.2	44.2	45.2	46.2	47.2	48.2	49.2	50.2	51.2	52.2	53.2	54.2	55.2	56.2	57.2	58.2	59.2	60.2	61.2	62.2	63.2	64.2	65.2	66.2	67.2	68.2	69.2	70.2	71.2	72.2	73.2	74.2	75.2	76.2	77.2	78.2	79.2	80.2	81.2	82.2	83.2	84.2	85.2	86.2	87.2	88.2	89.2	90.2	91.2	92.2	93.2	94.2	95.2	96.2	97.2	98.2	99.2	100.2
1.1	2.1	3.1	4.1	5.1	6.1	7.1	8.1	9.1	10.1	11.1	12.1	13.1	14.1	15.1	16.1	17.1	18.1	19.1	20.1	21.1	22.1	23.1	24.1	25.1	26.1	27.1	28.1	29.1	30.1	31.1	32.1	33.1	34.1	35.1	36.1	37.1	38.1	39.1	40.1	41.1	42.1	43.1	44.1	45.1	46.1	47.1	48.1	49.1	50.1	51.1	52.1	53.1	54.1	55.1	56.1	57.1	58.1	59.1	60.1	61.1	62.1	63.1	64.1	65.1	66.1	67.1	68.1	69.1	70.1	71.1	72.1	73.1	74.1	75.1	76.1	77.1	78.1	79.1	80.1	81.1	82.1	83.1	84.1	85.1	86.1	87.1	88.1	89.1	90.1	91.1	92.1	93.1	94.1	95.1	96.1	97.1	98.1	99.1	100.1
1.3	2.3	3.3	4.3	5.3	6.3	7.3	8.3	9.3	10.3	11.3	12.3	13.3	14.3	15.3	16.3	17.3	18.3	19.3	20.3	21.3	22.3	23.3	24.3	25.3	26.3	27.3	28.3	29.3	30.3	31.3	32.3	33.3	34.3	35.3	36.3	37.3	38.3	39.3	40.3	41.3	42.3	43.3	44.3	45.3	46.3	47.3	48.3	49.3	50.3	51.3	52.3	53.3	54.3	55.3	56.3	57.3	58.3	59.3	60.3	61.3	62.3	63.3	64.3	65.3	66.3	67.3	68.3	69.3	70.3	71.3	72.3	73.3	74.3	75.3	76.3	77.3	78.3	79.3	80.3	81.3	82.3	83.3	84.3	85.3	86.3	87.3	88.3	89.3	90.3	91.3	92.3	93.3	94.3	95.3	96.3	97.3	98.3	99.3	100.3
1.4	2.4	3.4	4.4	5.4	6.4	7.4	8.4	9.4	10.4	11.4	12.4	13.4	14.4	15.4	16.4	17.4	18.4	19.4	20.4	21.4	22.4	23.4	24.4	25.4	26.4	27.4	28.4	29.4	30.4	31.4	32.4	33.4	34.4	35.4	36.4	37.4	38.4	39.4	40.4	41.4	42.4	43.4	44.4	45.4	46.4	47.4	48.4	49.4	50.4	51.4	52.4	53.4	54.4	55.4	56.4	57.4	58.4	59.4	60.4	61.4	62.4	63.4	64.4	65.4	66.4	67.4	68.4	69.4	70.4	71.4	72.4	73.4	74.4	75.4	76.4	77.4	78.4	79.4	80.4	81.4	82.4	83.4	84.4	85.4	86.4	87.4	88.4	89.4	90.4	91.4	92.4	93.4	94.4	95.4	96.4	97.4	98.4	99.4	100.4
1.5	2.5	3.5	4.5	5.5	6.5	7.5	8.5	9.5	10.5	11.5	12.5	13.5	14.5	15.5	16.5	17.5	18.5	19.5	20.5	21.5	22.5	23.5	24.5	25.5	26.5	27.5	28.5	29.5	30.5	31.5	32.5	33.5	34.5	35.5	36.5	37.5	38.5	39.5	40.5	41.5	42.5	43.5	44.5	45.5	46.5	47.5	48.5	49.5	50.5	51.5	52.5	53.5	54.5	55.5	56.5	57.5	58.5	59.5	60.5	61.5	62.5	63.5	64.5	65.5	66.5	67.5	68.5	69.5	70.5	71.5	72.5	73.5	74.5	75.5	76.5	77.5	78.5	79.5	80.5	81.5	82.5	83.5	84.5	85.5	86.5	87.5	88.5	89.5	90.5	91.5	92.5	93.5	94.5	95.5	96.5	97.5	98.5	99.5	100.5
1.6	2.6	3.6	4.6	5.6	6.6	7.6	8.6	9.6	10.6	11.6	12.6	13.6	14.6	15.6	16.6	17.6	18.6	19.6	20.6	21.6	22.6	23.6	24.6	25.6	26.6	27.6	28.6	29.6	30.6	31.6	32.6	33.6	34.6	35.6	36.6	37.6	38.6	39.6	40.6	41.6	42.6	43.6	44.6	45.6	46.6	47.6	48.6	49.6	50.6	51.6	52.6	53.6	54.6	55.6	56.6	57.6	58.6	59.6	60.6	61.6	62.6	63.6	64.6	65.6	66.6	67.6	68.6	69.6	70.6	71.6	72.6	73.6	74.6	75.6	76.6	77.6	78.6	79.6	80.6	81.6	82.6	83.6	84.6	85.6	86.6	87.6	88.6	89.6	90.6	91.6	92.6	93.6	94.6	95.6	96.6	97.6	98.6	99.6	100.6
1.7	2.7	3.7	4.7	5.7	6.7	7.7	8.7	9.7	10.7	11.7	12.7	13.7	14.7	15.7	16.7	17.7	18.7	19.7	20.7	21.7	22.7	23.7	24.7	25.7	26.7	27.7	28.7	29.7	30.7	31.7	32.7	33.7	34.7	35.7	36.7	37.7	38.7	39.7	40.7	41.7	42.7	43.7	44.7	45.7	46.7	47.7	48.7	49.7	50.7	51.7	52.7	53.7	54.7	55.7	56.7	57.7	58.7	59.7	60.7	61.7	62.7	63.7	64.7	65.7	66.7	67.7	68.7	69.7	70.7	71.7	72.7	73.7	74.7	75.7	76.7	77.7	78.7	79.7	80.7	81.7	82.7	83.7	84.7	85.7	86.7	87.7	88.7	89.7	90.7	91.7	92.7	93.7	94.7	95.7	96.7	97.7	98.7	99.7	100.7
1.8	2.8	3.8	4.8	5.8	6.8	7.8	8.8	9.8	10.8	11.8	12.8	13.8	14.8	15.8	16.8	17.8	18.8	19.8	20.8	21.8	22.8	23.8	24.8	25.8	26.8	27.8	28.8	29.8	30.8	31.8	32.8	33.8	34.8	35.8	36.8	37.8	38.8	39.8	40.8	41.8	42.8	43.8	44.8	45.8	46.8	47.8	48.8	49.8	50.8	51.8	52.8	53.8	54.8	55.8	56.8	57.8	58.8	59.8	60.8	61.8	62.8	63.8	64.8	65.8	66.8	67.8	68.8	69.8	70.8	71.8	72.8	73.8	74.8	75.8	76.8	77.8	78.8	79.8	80.8	81.8	82.8	83.8	84.8	85.8	86.8	87.8	88.8	89.8	90.8	91.8	92.8	93.8	94.8	95.8	96.8	97.8	98.8	99.8	100.8
1.9	2.9	3.9	4.9	5.9	6.9	7.9	8.9	9.9	10.9	11.9	12.9	13.9	14.9	15.9	16.9	17.9	18.9	19.9	20.9	21.9	22.9	23.9	24.9	25.9	26.9	27.9	28.9	29.9	30.9	31.9	32.9	33.9	34.9	35.9	36.9	37.9	38.9	39.9	40.9	41.9	42.9	43.9	44.9	45.9	46.9	47.9	48.9	49.9	50.9	51.9	52.9	53.9	54.9	55.9	56.9	57.9	58.9	59.9	60.9	61.9	62.9	63.9	64.9	65.9	66.9	67.9	68.9	69.9	70.9	71.9	72.9	73.9	74.9	75.9	76.9	77.9	78.9	79.9	80.9	81.9	82.9	83.9	84.9	85.9	86.9	87.9	88.9	89.9	90.9	91.9	92.9	93.9	94.9	95.9	96.9	97.9	98.9	99.9	100.9
1.10	2.10	3.10	4.10	5.10	6.10	7.10	8.10	9.10	10.10	11.10	12.10	13.10	14.10	15.10	16.10	17.10	18.10	19.10	20.10	21.10	22.10	23.10	24.10	25.10	26.10	27.10	28.10	29.10	30.10	31.10	32.10	33.10	34.10	35.10	36.10	37.10	38.10	39.10	40.10	41.10	42.10	43.10	44.10	45.10	46.10	47.10	48.10	49.10	50.10	51.10	52.10	53.10	54.10	55.10	56.10	57.10	58.10	59.10	60.10	61.10	62.10	63.10	64.10	65.10	66.10	67.10	68.10	69.10	70.10	71.10	72.10	73.10	74.10	75.10	76.10	77.10	78.10	79.10	80.10	81.10	82.10	83.10	84.10	85.10	86.10	87.10	88.10	89.10	90.10	91.10	92.10	93.10	94.10	95.10	96.10	97.10	98.10	99.10	100.10
1.11	2.11	3.11	4.11	5.11	6.11	7.11	8.11	9.11	10.11	11.11	12.11	13.11	14.11	15.11	16.11	17.11	18.11	19.11	20.11	21.11	22.11	23.11	24.11	25.11	26.11	27.11	28.11	29.11	30.11	31.11	32.11	33.11	34.11	35.11	36.11	37.11	38.11	39.11	40.11	41.11	42.11	43.11	44.11	45.11	46.11	47.11	48.11	49.11	50.11	51.11	52.11	53.11	54.11	55.11	56.11	57.11	58.11	59.11	60.11	61.11	62.11	63.11	64.11	65.11	66.11	67.11	68.11	69.11	70.11	71.11	72.11	73.11	74.11	75.11	76.11	77.11	78.11	79.11	80.11	81.11	82.11	83.11	84.11	85.11	86.11	87.11	88.11	89.11	90.11	91.11	92.11	93.11	94.11	95.11	96.11	97.11	98.11	99.11	100.11
1.12	2.12	3.12	4.12	5.12	6.12	7.12	8.12	9.12	10.12	11.12	12.12	13.12	14.12	15.12	16.12	17.12	18.12	19.12	20.12	21.12	22.12	23.12	24.12	25.12	26.12	27.12	28.12	29.12	30.12	31.12	32.12	33.12	34.12	35.12	36.12	37.12	38.12	39.12	40.12	41.12	42.12	43.12	44.12	45.12	46.12	47.12	48.12	49.12	50.12	51.12	52.12	53.12	54.12	55.12	56.12	57.12	58.12	59.12	60.12	61.12	62.12	63.12	64.12	65.12	66.12	67.12	68.12	69.12	70.12	71.12	72.12	73.12	74.12	75.12	76.12	77.12	78.12	79.12	80.12	81.12	82.12	83.12	84.12	85.12	86.12	87.12	88.12	89.12	90.12	91.12	92.12	93.12	94.12	95.12	96.12	97.12	98.12	99.12	100.12
1.13	2.13	3.13	4.13	5.13	6.13	7.13	8.13	9.13	10.13	11.13	12.13	13.13	14.13	15.13	16.13	17.13	18.13	19.13	20.13	21.13	22.13	23.13	24.13	25.13	26.13	27.13	28.13	29.13	30.13	31.13	32.13	33.13	34.13	35.13	36.13	37.13	38.13	39.13	40.13	41.13	42.13	43.13	44.13	45.13	46.13	47.13	48.13	49.13	50.13	51.13	52.13	53.13	54.13	55.13	56.13	57.13	58.13	59.13	60.13	61.13	62.13	63.13	64.13	65.13	66.13	67.13	68.13	69.13	70.13	71.13	72.13	73.13	74.13	75.13	76.13	77.13	78.13	79.13	80.13	81.13	82.13	83.13	84.13	85.13	86.13	87.13	88.13	89.13	90.13	91.13	92.13	93.13	94.13	95.13	96.13	97.13	98.13	99.13	100.13
1.14	2.14	3.14	4.14	5.14	6.14	7.14	8.14	9.14	10.14	11.14	12.14	13.14	14.14	15.14	16.14	17.14	18.14	19.14	20.14	21.14	22.14	23.14	24.14	25.14	26.14	27.14	28.14	29.14	30.14	31.14	32.14	33.14	34.14																																																																		

ENERGY-SYSTEMS DESIGN SURVEY

[illegible]

Project Number	Project Name	Project Location	Project Type	Project Status	Project Manager	Project Start Date	Project End Date	Project Budget	Project Actual Cost	Project Profit	Project ROI
1001	Project A	Location A	Type A	Status A	Manager A	Start A	End A	Budget A	Actual A	Profit A	ROI A
1002	Project B	Location B	Type B	Status B	Manager B	Start B	End B	Budget B	Actual B	Profit B	ROI B
1003	Project C	Location C	Type C	Status C	Manager C	Start C	End C	Budget C	Actual C	Profit C	ROI C
1004	Project D	Location D	Type D	Status D	Manager D	Start D	End D	Budget D	Actual D	Profit D	ROI D
1005	Project E	Location E	Type E	Status E	Manager E	Start E	End E	Budget E	Actual E	Profit E	ROI E
1006	Project F	Location F	Type F	Status F	Manager F	Start F	End F	Budget F	Actual F	Profit F	ROI F
1007	Project G	Location G	Type G	Status G	Manager G	Start G	End G	Budget G	Actual G	Profit G	ROI G
1008	Project H	Location H	Type H	Status H	Manager H	Start H	End H	Budget H	Actual H	Profit H	ROI H
1009	Project I	Location I	Type I	Status I	Manager I	Start I	End I	Budget I	Actual I	Profit I	ROI I
1010	Project J	Location J	Type J	Status J	Manager J	Start J	End J	Budget J	Actual J	Profit J	ROI J
1011	Project K	Location K	Type K	Status K	Manager K	Start K	End K	Budget K	Actual K	Profit K	ROI K
1012	Project L	Location L	Type L	Status L	Manager L	Start L	End L	Budget L	Actual L	Profit L	ROI L
1013	Project M	Location M	Type M	Status M	Manager M	Start M	End M	Budget M	Actual M	Profit M	ROI M
1014	Project N	Location N	Type N	Status N	Manager N	Start N	End N	Budget N	Actual N	Profit N	ROI N
1015	Project O	Location O	Type O	Status O	Manager O	Start O	End O	Budget O	Actual O	Profit O	ROI O
1016	Project P	Location P	Type P	Status P	Manager P	Start P	End P	Budget P	Actual P	Profit P	ROI P
1017	Project Q	Location Q	Type Q	Status Q	Manager Q	Start Q	End Q	Budget Q	Actual Q	Profit Q	ROI Q
1018	Project R	Location R	Type R	Status R	Manager R	Start R	End R	Budget R	Actual R	Profit R	ROI R
1019	Project S	Location S	Type S	Status S	Manager S	Start S	End S	Budget S	Actual S	Profit S	ROI S
1020	Project T	Location T	Type T	Status T	Manager T	Start T	End T	Budget T	Actual T	Profit T	ROI T
1021	Project U	Location U	Type U	Status U	Manager U	Start U	End U	Budget U	Actual U	Profit U	ROI U
1022	Project V	Location V	Type V	Status V	Manager V	Start V	End V	Budget V	Actual V	Profit V	ROI V
1023	Project W	Location W	Type W	Status W	Manager W	Start W	End W	Budget W	Actual W	Profit W	ROI W
1024	Project X	Location X	Type X	Status X	Manager X	Start X	End X	Budget X	Actual X	Profit X	ROI X
1025	Project Y	Location Y	Type Y	Status Y	Manager Y	Start Y	End Y	Budget Y	Actual Y	Profit Y	ROI Y
1026	Project Z	Location Z	Type Z	Status Z	Manager Z	Start Z	End Z	Budget Z	Actual Z	Profit Z	ROI Z

- Faber Engineering Co.
- Feedwaters, Inc.
- Flynn & Gorman Co.
- Fly Ash Associates Corp.
- Fairbanks, Morse & Co.
- Farney Engineering Co.
- Foster Wheeler Co.
- General Steamship Co.
- Green Fuel Technologies Co., Inc.
- Gaulois Pumps, Inc.
- Gravel Water Engineering Co.
- Hart Corp.

[illegible][illegible][illegible]

Steam and hot-water systems for

ENERGY-SYSTEMS DESIGN SURV

Compiled by R. J. Bender, Associate Editor, and Norma Lachenauer

- 1 And 2 Byron Jackson high temperature water pumps cascade steam system
- 2 The new 2500 hp noncondensing Elliott turbine
- 3 And 4 high temperature water cascade pump cascade steam system
- 4 And 1 high temperature water Ashlanders pump hooders steam system
- 5 And Murray Iron Works Co
- 6 Condensing steam system
- 7 And 1 high temperature water pumps cascade steam system
- 8 And 2 Byron Jackson high temperature water pumps cascade steam system

continued

ENERGY-SYSTEMS DESIGN SURVEY

[illegible][illegible][illegible]

24	Major
25	- Mine major
26	Two - mine major and organic
27	Major - some light
28	Mathematic
29	Major
30	U
31	Major
32	Major
33	Major
34	Major
35	Major
36	Major
37	Major
38	Major
39	Major
40	Major
41	Major
42	Major
43	Major
44	Major
45	Major
46	Major
47	Major
48	Major
49	Major
50	Major
51	Major
52	Major
53	Major
54	Major
55	Major
56	Major
57	Major
58	Major
59	Major
60	Major
61	Major
62	Major
63	Major
64	Major
65	Major
66	Major
67	Major
68	Major
69	Major
70	Major
71	Major
72	Major
73	Major
74	Major
75	Major
76	Major
77	Major
78	Major
79	Major
80	Major
81	Major
82	Major
83	Major
84	Major
85	Major
86	Major
87	Major
88	Major
89	Major
90	Major
91	Major
92	Major
93	Major
94	Major
95	Major
96	Major
97	Major
98	Major
99	Major
100	Major

- p= - Road
- s= Speed control
- Sa= Self unloading door
- Sc= Scales
- SC= Single cylinder
- St= Stop
- So= Solenoid
- SS= Stainless steel
- St= Steel
- Sta= Stationing
- T= Turbine
- To= Tonne
- C= Compound
- I= Truck

Design features of typical stationary

UNION, FEDERAL AND COOPERATIVE INSTITUTIONS

DISAGREEMENT WITH POLICIES AND PROCEDURES, S'ALATIONS

30 Solar Subsidiary of International
Investor Co
NE Westinghouse Electric Corp

Project Number

Unit 2 Original + 21 ex. words
 started 1st ex. moved to Stage 2
 10;

Project Number	Project Name	Engine Type	Engine Model	Engine Power (kW)	Engine Speed (rpm)	Engine Stroke (mm)	Engine Bore (mm)	Engine Length (mm)	Engine Weight (kg)	Engine Efficiency (%)	Engine Hours	Engine Status
1	Project 1	Engine 1	Engine 1	100	1500	100	100	100	100	100	100	100
2	Project 2	Engine 2	Engine 2	200	1500	200	200	200	200	200	200	200
3	Project 3	Engine 3	Engine 3	300	1500	300	300	300	300	300	300	300
4	Project 4	Engine 4	Engine 4	400	1500	400	400	400	400	400	400	400
5	Project 5	Engine 5	Engine 5	500	1500	500	500	500	500	500	500	500
6	Project 6	Engine 6	Engine 6	600	1500	600	600	600	600	600	600	600
7	Project 7	Engine 7	Engine 7	700	1500	700	700	700	700	700	700	700
8	Project 8	Engine 8	Engine 8	800	1500	800	800	800	800	800	800	800
9	Project 9	Engine 9	Engine 9	900	1500	900	900	900	900	900	900	900
10	Project 10	Engine 10	Engine 10	1000	1500	1000	1000	1000	1000	1000	1000	1000
11	Project 11	Engine 11	Engine 11	1100	1500	1100	1100	1100	1100	1100	1100	1100
12	Project 12	Engine 12	Engine 12	1200	1500	1200	1200	1200	1200	1200	1200	1200
13	Project 13	Engine 13	Engine 13	1300	1500	1300	1300	1300	1300	1300	1300	1300
14	Project 14	Engine 14	Engine 14	1400	1500	1400	1400	1400	1400	1400	1400	1400
15	Project 15	Engine 15	Engine 15	1500	1500	1500	1500	1500	1500	1500	1500	1500
16	Project 16	Engine 16	Engine 16	1600	1500	1600	1600	1600	1600	1600	1600	1600
17	Project 17	Engine 17	Engine 17	1700	1500	1700	1700	1700	1700	1700	1700	1700
18	Project 18	Engine 18	Engine 18	1800	1500	1800	1800	1800	1800	1800	1800	1800
19	Project 19	Engine 19	Engine 19	1900	1500	1900	1900	1900	1900	1900	1900	1900
20	Project 20	Engine 20	Engine 20	2000	1500	2000	2000	2000	2000	2000	2000	2000
21	Project 21	Engine 21	Engine 21	2100	1500	2100	2100	2100	2100	2100	2100	2100
22	Project 22	Engine 22	Engine 22	2200	1500	2200	2200	2200	2200	2200	2200	2200
23	Project 23	Engine 23	Engine 23	2300	1500	2300	2300	2300	2300	2300	2300	2300
24	Project 24	Engine 24	Engine 24	2400	1500	2400	2400	2400	2400	2400	2400	2400
25	Project 25	Engine 25	Engine 25	2500	1500	2500	2500	2500	2500	2500	2500	2500
26	Project 26	Engine 26	Engine 26	2600	1500	2600	2600	2600	2600	2600	2600	2600
27	Project 27	Engine 27	Engine 27	2700	1500	2700	2700	2700	2700	2700	2700	2700
28	Project 28	Engine 28	Engine 28	2800	1500	2800	2800	2800	2800	2800	2800	2800
29	Project 29	Engine 29	Engine 29	2900	1500	2900	2900	2900	2900	2900	2900	2900
30	Project 30	Engine 30	Engine 30	3000	1500	3000	3000	3000	3000	3000	3000	3000
31	Project 31	Engine 31	Engine 31	3100	1500	3100	3100	3100	3100	3100	3100	3100
32	Project 32	Engine 32	Engine 32	3200	1500	3200	3200	3200	3200	3200	3200	3200
33	Project 33	Engine 33	Engine 33	3300	1500	3300	3300	3300	3300	3300	3300	3300
34	Project 34	Engine 34	Engine 34	3400	1500	3400	3400	3400	3400	3400	3400	3400
35	Project 35	Engine 35	Engine 35	3500	1500	3500	3500	3500	3500	3500	3500	3500
36	Project 36	Engine 36	Engine 36	3600	1500	3600	3600	3600	3600	3600	3600	3600
37	Project 37	Engine 37	Engine 37	3700	1500	3700	3700	3700	3700	3700	3700	3700
38	Project 38	Engine 38	Engine 38	3800	1500	3800	3800	3800	3800	3800	3800	3800
39	Project 39	Engine 39	Engine 39	3900	1500	3900	3900	3900	3900	3900	3900	3900
40	Project 40	Engine 40	Engine 40	4000	1500	4000	4000	4000	4000	4000	4000	4000
41	Project 41	Engine 41	Engine 41	4100	1500	4100	4100	4100	4100	4100	4100	4100
42	Project 42	Engine 42	Engine 42	4200	1500	4200	4200	4200	4200	4200	4200	4200
43	Project 43	Engine 43	Engine 43	4300	1500	4300	4300	4300	4300	4300	4300	4300
44	Project 44	Engine 44	Engine 44	4400	1500	4400	4400	4400	4400	4400	4400	4400
45	Project 45	Engine 45	Engine 45	4500	1500	4500	4500	4500	4500	4500	4500	4500
46	Project 46	Engine 46	Engine 46	4600	1500	4600	4600	4600	4600	4600	4600	4600
47	Project 47	Engine 47	Engine 47	4700	1500	4700	4700	4700	4700	4700	4700	4700
48	Project 48	Engine 48	Engine 48	4800	1500	4800	4800	4800	4800	4800	4800	4800
49	Project 49	Engine 49	Engine 49	4900	1500	4900	4900	4900	4900	4900	4900	4900
50	Project 50	Engine 50	Engine 50	5000	1500	5000	5000	5000	5000	5000	5000	5000
51	Project 51	Engine 51	Engine 51	5100	1500	5100	5100	5100	5100	5100	5100	5100
52	Project 52	Engine 52	Engine 52	5200	1500	5200	5200	5200	5200	5200	5200	5200
53	Project 53	Engine 53	Engine 53	5300	1500	5300	5300	5300	5300	5300	5300	5300
54	Project 54	Engine 54	Engine 54	5400	1500	5400	5400	5400	5400	5400	5400	5400
55	Project 55	Engine 55	Engine 55	5500	1500	5500	5500	5500	5500	5500	5500	5500
56	Project 56	Engine 56	Engine 56	5600	1500	5600	5600	5600	5600	5600	5600	5600
57	Project 57	Engine 57	Engine 57	5700	1500	5700	5700	5700	5700	5700	5700	5700
58	Project 58	Engine 58	Engine 58	5800	1500	5800	5800	5800	5800	5800	5800	5800
59	Project 59	Engine 59	Engine 59	5900	1500	5900	5900	5900	5900	5900	5900	5900
60	Project 60	Engine 60	Engine 60	6000	1500	6000	6000	6000	6000	6000	6000	6000
61	Project 61	Engine 61	Engine 61	6100	1500	6100	6100	6100	6100	6100	6100	6100
62	Project 62	Engine 62	Engine 62	6200	1500	6200	6200	6200	6200	6200	6200	6200
63	Project 63	Engine 63	Engine 63	6300	1500	6300	6300	6300	6300	6300	6300	6300
64	Project 64	Engine 64	Engine 64	6400	1500	6400	6400	6400	6400	6400	6400	6400
65	Project 65	Engine 65	Engine 65	6500	1500	6500	6500	6500	6500	6500	6500	6500
66	Project 66	Engine 66	Engine 66	6600	1500	6600	6600	6600	6600	6600	6600	6600
67	Project 67	Engine 67	Engine 67	6700	1500	6700	6700	6700	6700	6700	6700	6700
68	Project 68	Engine 68	Engine 68	6800	1500	6800	6800	6800	6800	6800	6800	6800
69	Project 69	Engine 69	Engine 69	6900	1500	6900	6900	6900	6900	6900	6900	6900
70	Project 70	Engine 70	Engine 70	7000	1500	7000	7000	7000	7000	7000	7000	7000
71	Project 71	Engine 71	Engine 71	7100	1500	7100	7100	7100	7100	7100	7100	7100
72	Project 72	Engine 72	Engine 72	7200	1500	7200	7200	7200	7200	7200	7200	7200
73	Project 73	Engine 73	Engine 73	7300	1500	7300	7300	7300	7300	7300	7300	7300
74	Project 74	Engine 74	Engine 74	7400	1500	7400	7400	7400	7400	7400	7400	7400
75	Project 75	Engine 75	Engine 75	7500	1500	7500	7500	7500	7500	7500	7500	7500
76	Project 76	Engine 76	Engine 76	7600	1500	7600	7600	7600	7600	7600	7600	7600
77	Project 77	Engine 77	Engine 77	7700	1500	7700	7700	7700	7700	7700	7700	7700
78	Project 78	Engine 78	Engine 78	7800	1500	7800	7800	7800	7800	7800	7800	7800
79	Project 79	Engine 79	Engine 79	7900	1500	7900	7900	7900	7900	7900	7900	7900
80	Project 80	Engine 80	Engine 80	8000	1500	8000	8000	8000	8000	8000	8000	8000
81	Project 81	Engine 81	Engine 81	8100	1500	8100	8100	8100	8100	8100	8100	8100
82	Project 82	Engine 82	Engine 82	8200	1500	8200	8200	8200	8200	8200	8200	8200
83	Project 83	Engine 83	Engine 83	8300	1500	8300	8300	8300	8300	8300	8300	8300
84	Project 84	Engine 84	Engine 84	8400	1500	8400	8400	8400	8400	8400	8400	8400
85	Project 85	Engine 85	Engine 85	8500	1500	8500	8500	8500	8500	8500	8500	8500
86	Project 86	Engine 86	Engine 86	8600	1500	8600	8600	8600	8600	8600	8600	8600
87	Project 87	Engine 87	Engine 87	8700	1500	8700	8700	8700	8700	8700	8700	8700
88	Project 88	Engine 88	Engine 88	8800	1500	8800	8800	8800	8800	8800	8800	8800
89	Project 89	Engine 89	Engine 89	8900	1500	8900	8900	8900	8900	8900	8900	8900
90	Project 90	Engine 90	Engine 90	9000	1500	9000	9000	9000	9000	9000	9000	9000
91	Project 91	Engine 91	Engine 91	9100	1500	9100	9100	9100	9100	9100	9100	9100
92	Project 92	Engine 92	Engine 92	9200	1500	9200	9200	9200	9200	9200	9200	9200
93	Project 93	Engine 93	Engine 93	9300	1500	9300	9300	9300	9300	9300	9300	9300
94	Project 94	Engine 94	Engine 94	9400	1500	9400	9400	9400	9400	9400	9400	9400
95	Project 95	Engine 95	Engine 95	9500	1500	9500	9500	9500	9500	9500	9500	9500
96	Project 96	Engine 96	Engine 96	9600	1500	9600	9600	9600	9600	9600	9600	9600
97	Project 97	Engine 97	Engine 97	9700	1500	9700	9700	9700	9700	9700	9700	9700
98	Project 98	Engine 98	Engine 98	9800	1500	9800	9800	9800	9800	9800	9800	9800
99	Project 99	Engine 99	Engine 99	9900	1500	9900	9900	9900	9900	9900	9900	9900
100	Project 100	Engine 100	Engine 100	10000	1500	10000	10000	10000	10000	10000	10000	10000

CHAS. J. ...

Project Number

- POWER • OCTOBER 1963

Diesel survey covers generation, standby and compressor drives



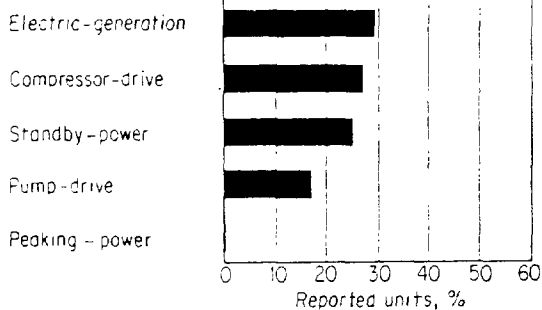
STEVE ELONKA,
Associate Editor

POWER's tabulation of diesel engines includes 128 projects for both utility and industrial applications. Of the 248 engines reported, in our survey of 155 projects (27 not tabulated) 29% generate continuous electric power (bar graph below). Compressor drive is a very close second at 27%. Standby power generation accounts for 25% of the total with peaking power making up less than 1% of the total.

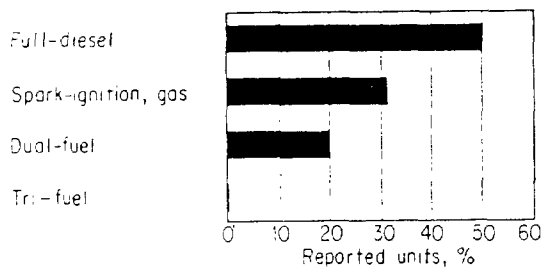
Size range of engines is of special interest. About 34% are from 2000 to 3999-hp capacity. Next most popular engine size range is the 100 to 299-hp category.

Survey reveals that 65% of the 248 engines are supercharged. Division between two and four-cycle engines is almost equal; 55% and 45%. Full diesels top the list at 50%, while 20% are the opposed-piston type.

Principal use

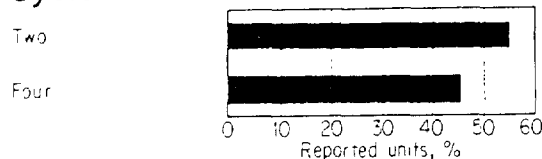


Type engine

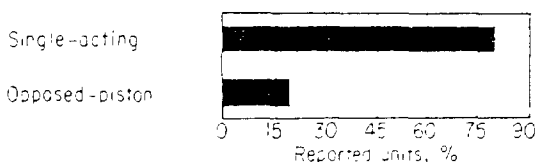


ELECTRIC POWER GENERATION comes out in first place at 54%, while engines of the full-diesel type are still a close second at 50%.

Cycle



Action

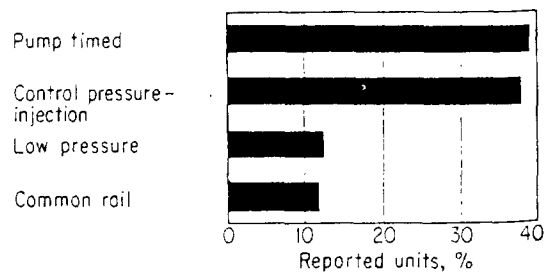


TWO-CYCLE ENGINES are in the lead by a narrow margin. The double-acting design accounts for 20% of total number of engines surveyed.

Supercharging

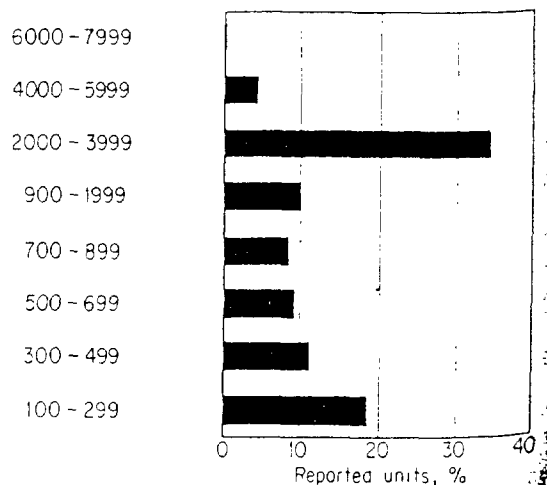


Fuel-injection system



SUPERCHARGED ENGINES account for two-thirds of the diesel engines mainly because they offer greater output for a given size.

Engine capacity, hp



LARGEST ENGINE SIZES are naturally in the minority. Most size, interestingly enough, is in the range from 2000 to 3999 hp.