

## 1950 Design Survey of Typical New

## Steam Central-Station Installations

Compiled by B. G. A. STREET, Associate Editor

Company

Location

Plant Name

Generating Equipment

First operation, new units

Normal pressure, psig

Normal temperature, F

Number

Capacity, each, 1000 lb per hr

Manufacturer

Boiler, waterwall surface, 1000 sq ft

Superheater surface, 1000 sq ft

Re-circulation, 1000 sq ft

Heat release, 1000 Btu per sq ft per hr

Furnace bottom

Economizer surface per boiler, 1000 sq ft

Air-heater surface per boiler, 1000 sq ft

Air-heater type

Drive

Air-flow control

Drive

Gas-flow control

Firing

Type

Heating value, 1000 Btu per lb

Ash-softenng temperature, F

Drive

Flow control

Capacity, 1000 Lw

Speed, rpm

Manufacturer

Backpressure, psia

No. of bleed points

Generator cooling

Surface, 1000 sq ft

No. water passes

Tube material

Total boiler capacity, 1000 lb

Total generator capacity, 1000 Lw

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| 9499 TO 9999 PSIG |          |            |                      |                            |                       |                       |        |                                |              |                                       |                                 |                            |                                         |

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## Steam Central-Station Installations

[illegible]

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| ST | 0 | 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 |
| DB | 0 | 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 |
| DB | 0 | 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 |
| DB | 0 | 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 |
| DB | 0 | 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 |
| DB | 0 | 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 |
| DB | 0 | 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 |
| DB | 0 | 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 |
| DB | 0 | 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 |
| DB | 0 | 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 |
| DB | 0 | 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 |
| DB | 0 | 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 |
| DB | 0 | 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 |
| DB | 0 | 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 |
| DB | 0 | 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 |
| DB | 0 | 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 |
| DB | 0 | 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 |
| DB | 0 | 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</ |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |

## Institutional Power Plants: 200 Psi and Above

| Air-heater type,<br>per boiler, 1000 sq | Air-heater type | F-D FANS    |                       |             |                       | Firing                                              | FUEL                          |                                   |                              | FEED PUMPS                 |                      | TURBINES             |                   |                   |                      |                     | Generator cooling | CONDENSERS             |                   |                   | Total boiler capacity,<br>incl new units, 1000 lb | Total generator capacity,<br>incl new units, 1000 kw |
|-----------------------------------------|-----------------|-------------|-----------------------|-------------|-----------------------|-----------------------------------------------------|-------------------------------|-----------------------------------|------------------------------|----------------------------|----------------------|----------------------|-------------------|-------------------|----------------------|---------------------|-------------------|------------------------|-------------------|-------------------|---------------------------------------------------|------------------------------------------------------|
|                                         |                 | Drive       | Air-volume<br>control | Drive       | Gas-volume<br>control |                                                     | Type                          | Heating value,<br>1000 Btu per lb | Air-fusion<br>temperature, F | Drive                      | Flow control         | Capacity,<br>1000 kw | Speed, rpm        | Manufacturer      | Backpressure,<br>psi | No. of bleed pts    |                   | Surface,<br>1000 sq ft | No. water passes  | Tube material     |                                                   |                                                      |
| 100.0<br>40.1                           | Tu<br>Re<br>Tu  | M<br>M<br>M | D<br>V<br>D           | M<br>M<br>N | S<br>D<br>D           | O, G <sup>1</sup><br>O, G <sup>2</sup><br>P, W      | G<br>C<br>C                   | 90<br>18.2<br>13.0                | 2 T<br>2 M<br>R              | S<br>R                     | 60<br>30<br>3600     | GE<br>AC<br>GE       | 1.0<br>1.0<br>1.0 | 5<br>5<br>1       | H<br>H<br>A          | 55.0<br>27.5<br>5.0 | 2<br>2<br>Ad      | Ad                     | 650<br>560<br>700 | 60<br>50<br>17.5  |                                                   |                                                      |
|                                         | E               | M           | S, Hy                 | M           | S, Hy                 | BL<br>O                                             | O                             | 17.5                              | 2 Du                         | R                          |                      |                      |                   |                   |                      |                     |                   |                        |                   |                   |                                                   |                                                      |
| 4.1<br>21.2                             | Tu<br>Tu<br>Tu  | O<br>M<br>M | M, T<br>T<br>D        | V<br>T<br>D | V<br>S<br>D           | O, G<br>O <sup>2</sup><br>P                         | O<br>C<br>C                   | 18.4<br>10.5<br>11.1              | 2 T<br>1M, 1T<br>1M, 2T      | S, R<br>R<br>R             | 3600<br>3600<br>3600 | GE<br>Oe<br>GE       | 140<br>1.0<br>1.0 | 1<br>1<br>1       | A<br>A<br>A          |                     |                   |                        |                   | 456<br>400<br>355 | 0<br>14<br>12                                     |                                                      |
| 45.2<br>6.9                             | PI              | M           | D                     | M           | V                     | P, O                                                | O, G, An                      | 2000                              | 2 T                          | S                          | 5.0                  | 3600                 | GE                | 50                | 2                    | A                   | 4.5               | 2                      | Ad                |                   |                                                   |                                                      |
| O                                       | Me              | M           | D                     | M           | D                     | SS (214)                                            |                               |                                   |                              |                            |                      |                      |                   |                   |                      |                     |                   |                        |                   |                   |                                                   |                                                      |
|                                         | Tu              | O           | M                     | D           | M                     | Hy                                                  | O, BL                         | 10.6                              | 1M, 1T                       | R                          | 2.0<br>2.0<br>1.0    | 3600<br>3600<br>3600 | GE<br>GE<br>WE    | 35<br>0.75<br>175 | 1<br>1<br>1          | A<br>A<br>A         | 2.0               | 2                      | P Ad              | 150<br>100        | 4.0<br>3.5                                        |                                                      |
| 38.5                                    | Tu              | O           | T                     | S           | T                     | S, D                                                | O, G <sup>1</sup>             | 90                                | 1M, 3T                       | S, R                       |                      |                      |                   |                   |                      |                     |                   |                        |                   | 2000              | 145                                               |                                                      |
| 9.9                                     | Tu              | O           | T                     | S           | T                     | S                                                   | O, G                          | 1.3                               | 1M, 2T                       | S, R                       | 8.0<br>1.0<br>1.0    | 3600<br>3600<br>3600 | WE<br>EI<br>AC    | 190<br>1.0<br>1.0 | 1<br>1<br>1          | A<br>A<br>A         | 4.2               | 2                      | A Ad              | 450               | 10                                                |                                                      |
| 21.9<br>11.2                            | Tu<br>Tu        | E<br>M      | T<br>D                | S<br>M      | T<br>M                | S<br>D                                              | O, G<br>BL                    | 18.0<br>6.5                       |                              |                            |                      |                      |                   |                   |                      |                     |                   |                        |                   |                   |                                                   |                                                      |
| 7.5                                     | Tu              | Me          | M                     | D           | M                     | SS (189)                                            | C                             | 12.0                              | 1M, 2T                       | R                          | 5.0<br>3.0           | 3600<br>3600         | GE<br>WE          | 50<br>125         | 1<br>1               | A<br>A              | O                 | O                      |                   | 429<br>175        | 15<br>3.0                                         |                                                      |
| 75.0                                    | Tu              | O           | T                     | S, V        | T                     | S, D                                                | SS (212)<br>P, G <sup>1</sup> | 12.5<br>90                        | 1T<br>3T                     | R<br>S, R                  |                      |                      |                   |                   |                      |                     |                   |                        |                   |                   |                                                   |                                                      |
| 6.4<br>4.7<br>13.2                      |                 |             |                       |             |                       | G<br>SS<br>O<br>BL<br>SS (282)<br>P, O <sup>3</sup> | G<br>WW<br>O<br>C<br>C<br>C   | 4.6<br>18.5<br>11.1<br>8.0        |                              |                            |                      |                      |                   |                   |                      |                     |                   |                        |                   |                   |                                                   |                                                      |
|                                         | Me              | T           |                       | T           | D                     | S                                                   |                               |                                   | 1T<br>2T                     | S, R<br>S, R               | 6.0<br>5.0           | 1800<br>3600         | GE<br>GE          | 1.0<br>0.75       | 1<br>2               | A<br>A              | 8.6<br>4.5        | 2<br>2                 | Ad                | 1842<br>340       | 43.5<br>8.0                                       |                                                      |
| 21.6<br>13.2                            | Tu<br>Tu        | Me<br>M     | M<br>V                | T<br>T      | S<br>S                | SS (516)                                            | C, O<br>BL<br>BL<br>BL        | 12.5<br>4.0<br>4.0<br>4.0         | 2200                         |                            |                      |                      |                   |                   |                      |                     |                   |                        |                   |                   |                                                   |                                                      |
| 11.1<br>11.1<br>1.1                     | Tu<br>Tu<br>Tu  | E<br>M<br>E | M<br>M<br>D           | V<br>D<br>D | T<br>T<br>T           | S<br>S<br>BL<br>BL<br>BL                            |                               |                                   |                              |                            |                      |                      |                   |                   |                      |                     |                   |                        |                   |                   |                                                   |                                                      |
|                                         | Me              | M           | M                     | V           | T                     | S, D                                                | SS (347)                      | 12.0                              | 1T                           | S, R                       |                      |                      |                   |                   |                      |                     |                   |                        |                   |                   |                                                   |                                                      |
| 21.0<br>6.8<br>6.6                      | Tu<br>Tu<br>Tu  | O<br>M<br>M | T<br>D<br>D           | M<br>M<br>M | D<br>M<br>D           | SS (117)<br>G<br>O<br>W, W<br>BL                    | C, G<br>G<br>O<br>W, W<br>BL  | 1.0<br>17.7<br>5.0                | 1M<br>1M, 2T, 1D<br>1M, 1T   | S, R<br>R                  |                      |                      |                   |                   |                      |                     |                   |                        |                   |                   |                                                   |                                                      |
| O                                       | Me              | M           | V                     | M           | D                     | SS (154)                                            | C, O                          | 12.0                              | 2200                         | 1M, 2T                     | 1.5                  | 3600                 | WE                | 10                | 1                    | A                   |                   |                        |                   |                   |                                                   |                                                      |
|                                         | E               |             |                       | T           | S                     | WH                                                  | G <sup>11</sup>               |                                   | 2M                           | S                          | 0.3<br>1.0           | 3600<br>5000         | GE<br>DL          | 25<br>25          | 1<br>1               | A<br>A              | 1.25              | 2                      | Ad                | 204<br>38         | 3.0<br>1.3                                        |                                                      |
|                                         | Tu              |             | D                     |             |                       | O, G<br>W, W<br>SS (183)<br>BL                      | G<br>W, W<br>C<br>BL, O, G    | 1.0<br>4.5<br>11.0<br>3.0         | 2T<br>1M, 1T<br>2M, 1T       | Hy<br>S<br>S, R            | 3600<br>3600<br>3600 | DL<br>GE<br>WE       | 0.75<br>1<br>0.5  | 2<br>4<br>1       | A<br>A<br>A          |                     |                   |                        |                   |                   |                                                   |                                                      |
| 6.5<br>7.0                              | Tu<br>Tu        | Me<br>E     | M<br>N                | V<br>Hy     | M<br>M                | SS (183)<br>BL                                      |                               |                                   |                              |                            |                      |                      |                   |                   |                      |                     |                   |                        |                   |                   |                                                   |                                                      |
|                                         | Tu              | O           | M                     | D           | M                     | D                                                   | P, O                          | 14.4                              | 2400                         | 2M, 3T                     | S                    | 1.0<br>0.75          | 3600              | GE                | 100<br>100           | 1<br>1              |                   |                        |                   |                   |                                                   |                                                      |
| 3.1                                     | Tu              | Me<br>M     | MT<br>V               | V<br>T      | MT<br>S, D            | TG (330)<br>SS (117)<br>G                           | An<br>C, O<br>C               | 12.1<br>12.1<br>1.1               | 2900<br>2000                 | 1M, 1T<br>1M, 1T<br>1M, 1T | S, R<br>S<br>S       | 2.5                  | 3600              | WE                | 15                   | 1                   | A                 |                        |                   |                   |                                                   |                                                      |
| O                                       | Me              | T           | S                     |             | T                     | S                                                   | SS (212)                      | 12.5                              | 2400                         | 1M, 1T                     | S                    |                      |                   |                   |                      |                     |                   |                        |                   |                   |                                                   |                                                      |
|                                         | Tu              |             | T                     | V           | M                     | D                                                   | O<br>BL<br>SS (398)<br>G      |                                   |                              |                            |                      |                      |                   |                   |                      |                     |                   |                        |                   |                   |                                                   |                                                      |
| 10.8<br>25.5<br>14.2                    | Tu<br>Tu<br>Tu  | M<br>M<br>M | S<br>D<br>D           | T<br>T<br>T | S<br>S<br>S           | O<br>BL<br>SS (398)<br>G                            | O<br>W, O<br>G                | 6.8<br>18.4<br>1.1                | 2T                           | R                          |                      |                      |                   |                   |                      |                     |                   |                        |                   |                   |                                                   |                                                      |
|                                         | Me              | MT          | M                     | V           | MT                    | D, Hy                                               | TG (330)<br>SS (117)<br>G     | 12.1<br>12.1<br>1.1               | 2900<br>2000                 | 1M, 1T<br>1M, 1T<br>1M, 1T | S, R<br>S<br>S       | 2.5                  | 3600              | WE                | 15                   | 1                   | A                 |                        |                   |                   |                                                   |                                                      |
|                                         | O               | Me          | T                     | S           | T                     | S                                                   | SS (212)                      | 12.5                              | 2400                         | 1M, 1T                     | S                    |                      |                   |                   |                      |                     |                   |                        |                   |                   |                                                   |                                                      |
|                                         | Tu              |             | T                     | V           | M                     | D                                                   | O<br>BL<br>SS (398)<br>G      |                                   |                              |                            |                      |                      |                   |                   |                      |                     |                   |                        |                   |                   |                                                   |                                                      |
| 10.8<br>25.5<br>14.2                    | Tu<br>Tu<br>Tu  | M<br>M<br>M | S<br>D<br>D           | T<br>T<br>T | S<br>S<br>S           | O<br>BL<br>SS (398)<br>G                            | O<br>W, O<br>G                | 6.8<br>18.4<br>1.1                | 2T                           | R                          |                      |                      |                   |                   |                      |                     |                   |                        |                   |                   |                                                   |                                                      |
|                                         | Me              | MT          | M                     | V           | MT                    | D, Hy                                               | TG (330)<br>SS (117)<br>G     | 12.1<br>12.1<br>1.1               | 2900<br>2000                 | 1M, 1T<br>1M, 1T<br>1M, 1T | S, R<br>S<br>S       | 2.5                  | 3600              | WE                | 15                   | 1                   | A                 |                        |                   |                   |                                                   |                                                      |
|                                         | O               | Me          | T                     | S           | T                     | S                                                   | SS (212)                      | 12.5                              | 2400                         | 1M, 1T                     | S                    |                      |                   |                   |                      |                     |                   |                        |                   |                   |                                                   |                                                      |
|                                         | Tu              |             | T                     | V           | M                     | D                                                   | O<br>BL<br>SS (398)<br>G      |                                   |                              |                            |                      |                      |                   |                   |                      |                     |                   |                        |                   |                   |                                                   |                                                      |
| 10.8<br>25.5<br>14.2                    | Tu<br>Tu<br>Tu  | M<br>M<br>M | S<br>D<br>D           | T<br>T<br>T | S<br>S<br>S           | O<br>BL<br>SS (398)<br>G                            | O<br>W, O<br>G                | 6.8<br>18.4<br>1.1                | 2T                           | R                          |                      |                      |                   |                   |                      |                     |                   |                        |                   |                   |                                                   |                                                      |
|                                         | Me              | MT          | M                     | V           | MT                    | D, Hy                                               | TG (330)<br>SS (117)<br>G     | 12.1<br>12.1<br>1.1               | 2900<br>2000                 | 1M, 1T<br>1M, 1T<br>1M, 1T | S, R<br>S<br>S       | 2.5                  | 3600              | WE                | 15                   | 1                   | A                 |                        |                   |                   |                                                   |                                                      |
|                                         | O               | Me          | T                     | S           | T                     | S                                                   | SS (212)                      | 12.5                              | 2400                         | 1M, 1T                     | S                    |                      |                   |                   |                      |                     |                   |                        |                   |                   |                                                   |                                                      |
|                                         | Tu              |             | T                     | V           | M                     | D                                                   | O<br>BL<br>SS (398)<br>G      |                                   |                              |                            |                      |                      |                   |                   |                      |                     |                   |                        |                   |                   |                                                   |                                                      |
| 10.8<br>25.5<br>14.2                    | Tu<br>Tu<br>Tu  | M<br>M<br>M | S<br>D<br>D           | T<br>T<br>T | S<br>S<br>S           | O<br>BL<br>SS (398)<br>G                            | O<br>W, O<br>G                | 6.8<br>18.4<br>1.1                | 2T                           | R                          |                      |                      |                   |                   |                      |                     |                   |                        |                   |                   |                                                   |                                                      |
|                                         | Me              | MT          | M                     | V           | MT                    | D, Hy                                               | TG (330)<br>SS (117)<br>G     | 12.1<br>12.1<br>1.1               | 2900<br>2000                 | 1M, 1T<br>1M, 1T<br>1M, 1T | S, R<br>S<br>S       | 2.5                  | 3600              | WE                | 15                   | 1                   | A                 |                        |                   |                   |                                                   |                                                      |
|                                         | O               | Me          | T                     | S           | T                     | S                                                   | SS (212)                      | 12.5                              | 2400                         | 1M, 1T                     | S                    |                      |                   |                   |                      |                     |                   |                        |                   |                   |                                                   |                                                      |
|                                         | Tu              |             | T                     | V           | M                     | D                                                   | O<br>BL<br>SS (398)<br>G      |                                   |                              |                            |                      |                      |                   |                   |                      |                     |                   |                        |                   |                   |                                                   |                                                      |
| 10.8<br>25.5<br>14.2                    | Tu<br>Tu<br>Tu  | M<br>M<br>M | S<br>D<br>D           | T<br>T<br>T | S<br>S<br>S           | O<br>BL<br>SS (398)<br>G                            | O<br>W, O<br>G                | 6.8<br>18.4<br>1.1                | 2T                           | R                          |                      |                      |                   |                   |                      |                     |                   |                        |                   |                   |                                                   |                                                      |
|                                         | Me              | MT          | M                     | V           | MT                    | D, Hy                                               | TG (330)<br>SS (117)<br>G     | 12.1<br>12.1<br>1.1               | 2900<br>2000                 | 1M, 1T<br>1M, 1T<br>1M, 1T | S, R<br>S<br>S       | 2.5                  | 3600              | WE                | 15                   | 1                   | A                 |                        |                   |                   |                                                   |                                                      |
|                                         | O               | Me          | T                     | S           | T                     | S                                                   | SS (212)                      | 12.5                              | 2400                         | 1M, 1T                     | S                    |                      |                   |                   |                      |                     |                   |                        |                   |                   |                                                   |                                                      |
|                                         | Tu              |             | T                     | V           | M                     | D                                                   | O<br>BL<br>SS (398)<br>G      |                                   |                              |                            |                      |                      |                   |                   |                      |                     |                   |                        |                   |                   |                                                   |                                                      |
| 10.8<br>25.5<br>14.2                    | Tu<br>Tu<br>Tu  | M<br>M<br>M | S<br>D<br>D           | T<br>T<br>T | S<br>S<br>S           | O<br>BL<br>SS (398)<br>G                            | O<br>W, O<br>G                | 6.8<br>18.4<br>1.1                | 2T                           | R                          |                      |                      |                   |                   |                      |                     |                   |                        |                   |                   |                                                   |                                                      |
|                                         | Me              | MT          | M                     | V           | MT                    | D, Hy                                               | TG (330)<br>SS (117)<br>G     | 12.1<br>12.1<br>1.1               | 2900<br>2000                 | 1M, 1T<br>1M, 1T<br>1M, 1T | S, R<br>S<br>S       | 2.5                  | 3600              | WE                | 15                   | 1                   | A                 |                        |                   |                   |                                                   |                                                      |
|                                         | O               | Me          | T                     | S           | T                     | S                                                   | SS (212)                      | 12.5                              | 2400                         | 1M, 1T                     | S                    |                      |                   |                   |                      |                     |                   |                        |                   |                   |                                                   |                                                      |
|                                         | Tu              |             | T                     | V           | M                     | D                                                   | O<br>BL<br>SS (398)<br>G      |                                   |                              |                            |                      |                      |                   |                   |                      |                     |                   |                        |                   |                   |                                                   |                                                      |
| 10.8<br>25.5<br>14.2                    | Tu<br>Tu<br>Tu  | M<br>M<br>M | S<br>D<br>D           | T<br>T<br>T | S<br>S<br>S           | O<br>BL<br>SS (398)<br>G                            | O<br>W, O<br>G                | 6.8<br>18.4<br>1.1                | 2T                           | R                          |                      |                      |                   |                   |                      |                     |                   |                        |                   |                   |                                                   |                                                      |
|                                         | Me              | MT          | M                     | V           | MT                    | D, Hy                                               | TG (330)<br>SS (117)<br>G     | 12.1<br>12.1<br>1.1               | 2900<br>2000                 | 1M, 1T<br>1M, 1T<br>1M, 1T | S, R<br>S<br>S       | 2.5                  | 3600              | WE                | 15                   | 1                   | A                 |                        |                   |                   |                                                   |                                                      |
|                                         | O               | Me          | T                     | S           | T                     | S                                                   | SS (212)                      | 12.5                              | 2400                         | 1M, 1T                     | S                    |                      |                   |                   |                      |                     |                   |                        |                   |                   |                                                   |                                                      |
|                                         | Tu              |             | T                     | V           | M                     | D                                                   | O<br>BL<br>SS (398)<br>G      |                                   |                              |                            |                      |                      |                   |                   |                      |                     |                   |                        |                   |                   |                                                   |                                                      |
| 10.8<br>25.5<br>14.2                    | Tu<br>Tu<br>Tu  | M<br>M<br>M | S<br>D<br>D           | T<br>T<br>T | S<br>S<br>S           | O<br>BL<br>SS (398)<br>G                            | O<br>W, O<br>G                | 6.8<br>18.4<br>1.1                | 2T                           | R                          |                      |                      |                   |                   |                      |                     |                   |                        |                   |                   |                                                   |                                                      |
|                                         | Me              | MT          | M                     | V           | MT                    | D, Hy                                               | TG (330)<br>SS (117)<br>G     | 12.1<br>12.1<br>1.1               | 2900<br>2000                 | 1M, 1T<br>1M, 1T<br>1M, 1T | S, R<br>S<br>S       | 2.5                  | 3600              | WE                | 15                   | 1                   | A                 |                        |                   |                   |                                                   |                                                      |
|                                         | O               | Me          | T                     | S           | T                     | S                                                   | SS (212)                      | 12.5                              | 2400                         | 1M, 1T                     | S                    |                      |                   |                   |                      |                     |                   |                        |                   |                   |                                                   |                                                      |
|                                         | Tu              |             | T                     | V           | M                     | D                                                   | O<br>BL<br>SS (398)<br>G      |                                   |                              |                            |                      |                      |                   |                   |                      |                     |                   |                        |                   |                   |                                                   |                                                      |
| 10.8<br>25.5<br>14.2                    | Tu<br>Tu<br>Tu  | M<br>M<br>M | S<br>D<br>D           | T<br>T<br>T | S<br>S<br>S           | O<br>BL<br>SS (398)<br>G                            | O<br>W, O<br>G                | 6.8<br>18.4<br>1.1                | 2T                           | R                          |                      |                      |                   |                   |                      |                     |                   |                        |                   |                   |                                                   |                                                      |
|                                         | Me              | MT          | M                     | V           | MT                    | D, Hy                                               | TG (330)<br>SS (117)<br>G     | 12.1<br>12.1<br>1.1               | 2900<br>2000                 | 1M, 1T<br>1M, 1T<br>1M, 1T | S, R<br>S<br>S       | 2.5                  | 3600              | WE                | 15                   | 1                   | A                 |                        |                   |                   |                                                   |                                                      |
|                                         | O               | Me          | T                     | S           | T                     | S                                                   | SS (212)                      | 12.5                              | 2400                         | 1M, 1T                     | S                    |                      |                   |                   |                      |                     |                   |                        |                   |                   |                                                   |                                                      |
|                                         | Tu              |             | T                     | V           | M                     | D                                                   | O<br>BL<br>SS (398)<br>G      |                                   |                              |                            |                      |                      |                   |                   |                      |                     |                   |                        |                   |                   |                                                   |                                                      |
| 10.8<br>25.5<br>14.2                    | Tu<br>Tu<br>Tu  | M<br>M<br>M | S<br>D<br>D           | T<br>T<br>T | S<br>S<br>S           | O<br>BL<br>SS (398)<br>G                            | O<br>W, O<br>G                | 6.8<br>18.4<br>1.1                | 2T                           | R                          |                      |                      |                   |                   |                      |                     |                   |                        |                   |                   |                                                   |                                                      |
|                                         | Me              | MT          | M                     | V           | MT                    | D, Hy                                               | TG (330)<br>SS (117)<br>G     | 12.1<br>12.1<br>1.1               | 2900<br>2000                 | 1M, 1T<br>1M, 1T<br>1M, 1T | S, R<br>S<br>S       | 2.5                  | 3600              | WE                | 15                   | 1                   | A                 |                        |                   |                   |                                                   |                                                      |
|                                         | O               | Me          | T                     | S           | T                     | S                                                   | SS (212)                      | 12.5                              | 2400                         | 1M, 1T                     | S                    |                      |                   |                   |                      |                     |                   |                        |                   |                   |                                                   |                                                      |
|                                         | Tu              |             | T                     | V           | M                     | D                                                   | O<br>BL<br>SS (398)<br>G      |                                   |                              |                            |                      |                      |                   |                   |                      |                     |                   |                        |                   |                   |                                                   |                                                      |
| 10.8<br>25.5<br>14.2                    | Tu<br>Tu<br>Tu  | M<br>M<br>M | S<br>D<br>D           | T<br>T<br>T | S<br>S<br>S           | O<br>BL<br>SS (398)<br>G                            | O<br>W, O<br>G                | 6.8<br>18.4<br>1.1                | 2T                           | R                          |                      |                      |                   |                   |                      |                     |                   |                        |                   |                   |                                                   |                                                      |
|                                         | Me              | MT          | M                     | V           | MT                    | D, Hy                                               | TG (330)<br>SS (117)<br>G     | 12.1<br>12.1<br>1.1               | 2900<br>2000                 | 1M, 1T<br>1M, 1T<br>1M, 1T | S, R<br>S<br>S       | 2.5                  | 3600              | WE                | 15                   | 1                   | A                 |                        |                   |                   |                                                   |                                                      |
|                                         | O               | Me          | T                     | S           | T                     | S                                                   | SS (212)                      | 12.5                              | 2400                         | 1M, 1T                     | S                    |                      |                   |                   |                      |                     |                   |                        |                   |                   |                                                   |                                                      |
|                                         | Tu              |             | T                     | V           | M                     | D                                                   | O<br>BL<br>SS (398)<br>G      |                                   |                              |                            |                      |                      |                   |                   |                      |                     |                   |                        |                   |                   |                                                   |                                                      |
| 10.8<br>25.5<br>14.2                    | Tu<br>Tu<br>Tu  | M<br>M<br>M | S<br>D<br>D           | T<br>T<br>T | S<br>S<br>S           | O<br>BL<br>SS (398)<br>G                            | O<br>W, O<br>G                | 6.8<br>18.4<br>1.1                | 2T                           | R                          |                      |                      |                   |                   |                      |                     |                   |                        |                   |                   |                                                   |                                                      |
|                                         | Me              | MT          | M                     | V           | MT                    | D, Hy                                               | TG (330)<br>SS (117)<br>G     | 12.1<br>12.1<br>1.1               | 2900<br>2000                 | 1M, 1T<br>1M, 1T<br>1M, 1T | S, R<br>S<br>S       | 2.5                  | 3600              | WE                | 15                   | 1                   | A                 |                        |                   |                   |                                                   |                                                      |
|                                         | O               | Me          | T                     | S           | T                     | S                                                   | SS (212)                      | 12.5                              | 2400                         | 1M, 1T                     | S                    |                      |                   |                   |                      |                     |                   |                        |                   |                   |                                                   |                                                      |
|                                         | Tu              |             | T                     | V           | M                     | D                                                   | O<br>BL<br>SS (398)<br>G      |                                   |                              |                            |                      |                      |                   |                   |                      |                     |                   |                        |                   |                   |                                                   |                                                      |
| 10.8<br>25.5<br>14.2                    | Tu<br>Tu<br>Tu  | M<br>M<br>M | S<br>D<br>D           | T<br>T<br>T | S<br>S<br>S           | O<br>BL<br>SS (398)<br>G                            | O<br>W, O<br>G                | 6.8<br>18.4<br>1.1                | 2T                           | R                          |                      |                      |                   |                   |                      |                     |                   |                        |                   |                   |                                                   |                                                      |
|                                         | Me              | MT          | M                     | V           | MT                    | D, Hy                                               | TG (330)<br>SS (117)<br>G     | 12.1<br>12.1<br>1.1               | 2900<br>2000                 | 1M, 1T<br>1M, 1            |                      |                      |                   |                   |                      |                     |                   |                        |                   |                   |                                                   |                                                      |

- .. Maschinen Fabrik Gerlikon
- .. Pulverized-fuel firing
- .. Plate
- .. Regulator
- .. Riley Stoker Corp
- .. Speed control
- .. Skinner Engine Co
- .. Spreader stoker
- .. Slog Tap

- T - Turbine drive
- Te - Terry Steam Turbine Co
- Tu - Tubular
- UF - Underfeed stoker
- UI - Union Iron Works
- V - Vane control
- Va - Henry Vogt Machine Co
- W - Wood
- WH - Waste heat

WB - Wm Bros Boiler & Mfg Co  
WE - Westinghouse Electric Corp  
B - Wickes Boiler Co  
Ro - Worthington Pump & Machy Corp,  
Moore Steam Turbine Division  
W - Wood waste  
1 - Blast-furnace gas  
2 - Futura coal  
3 - Fiat grate  
4 - Steam-heated

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

# 1950 Design Survey of Typical Industrial and

Compiled by J C McCabe, Associate Editor

| Compiled by J C McCabe, Associate Editor |                       |                             | First operation,<br>new units | Nominal pressure,<br>psi | Nominal steam<br>temperature, F | BOILERS |                                   |              |                                | Furnace volume,<br>1000 cu ft | Heat release, 1000<br>Btu per cu ft per hr | Furnace bottom | Economizer surface,<br>per boiler, 1000 sq ft |
|------------------------------------------|-----------------------|-----------------------------|-------------------------------|--------------------------|---------------------------------|---------|-----------------------------------|--------------|--------------------------------|-------------------------------|--------------------------------------------|----------------|-----------------------------------------------|
| Company                                  | Location              | Consulting<br>Engineers     |                               |                          |                                 | Number  | Capacity, each,<br>1000 lb per hr | Manufacturer | Heating surface,<br>1000 sq ft |                               |                                            |                |                                               |
| 600 PSI AND ABOVE                        |                       |                             |                               |                          |                                 |         |                                   |              |                                |                               |                                            |                |                                               |
| ✓Carnegie-Illinois Steel Corp.           | Chicago, Ill.         | United Engrs & Constr Corp. | 1951                          | 1025                     | 900                             | 1       | 650                               | RS           | 75.1                           | 49.0                          | 17.5                                       | DB             | 12.0                                          |
| ✓Imperial Irrigation Distr.              | El Centro, Calif.     | Gibbs & Hill                | 1952                          | 960                      | 900                             | 1       | 300                               | BW           | 28.4                           | 11.1                          | 34.3                                       | DB             |                                               |
| ✓Macon Kraft Co.                         | Macon, Ga.            |                             | 1949                          | 850                      | 750                             | 2       | 150                               | CE           |                                |                               | 19.8                                       | DB             |                                               |
|                                          |                       |                             |                               |                          |                                 | 2       | 100                               | CE           |                                |                               |                                            |                |                                               |
|                                          |                       |                             |                               |                          |                                 | 2       | 150                               | CE           |                                |                               |                                            |                |                                               |
| ✓Mack Molding Co.                        | Arlington, Va.        |                             | 1949                          | 800                      | 518                             | 1       | 12                                | BW           | 2.0                            |                               |                                            |                |                                               |
| ✓Gulf Oil Corp.                          | Toledo, Ohio          |                             | 1948                          | 725                      | 605                             | 2       | 70                                | BW           | 7.4                            |                               |                                            |                |                                               |
| ✓Pacific Mills, Ltd.                     | Ocean Falls, B. C.    |                             | 1948                          | 725                      | 750                             | 1       | 175                               | BWG          | 15.6                           | 7.0                           | 19.7                                       | DB             | 0                                             |
| ✓Fraser Paper, Ltd.                      | Madawaska, Me.        | Stone & Webster             | 5-50                          | 700                      | 750                             | 1       | 150                               | CE           |                                | 9.3                           | 19.0                                       |                |                                               |
| ✓American Boxboard Co.                   | Filer City, Mich.     | Carroll, Bechtel & Langtry  | 5-50                          | 675                      | 750                             | 1       | 125                               | BW           | 11.8                           |                               |                                            | DB             |                                               |
| ✓American Cyanamid Co.                   | Pearl River, N. Y.    |                             | 1950                          | 675                      | 750                             | 1       | 85                                | FW           | 14.1                           | 5.3                           | 22.7                                       |                |                                               |
| ✓Central Sosa Co.                        | Decatur, Indiana      | Sargent & Lundy             | 1950                          | 675                      | 760                             | 1       | 80                                | BW           | 7.9                            | 3.4                           | 27.3                                       |                | 5.2                                           |
| ✓National Container Corp.                | Ontonagon, Mich.      | Helmick, Edeskuty & Lutz    | 1949                          | 675                      | 700                             | 1       | 47                                | CE           | 13.9                           |                               |                                            |                | 1.7                                           |
| ✓Carnegie-Illinois Steel Corp.           | Gary, Indiana         | United Engrs & Constr Corp. | 9-49                          | 650                      | 825                             | 3       | 250                               | RS           | 79.6                           | 18.0                          | 19.9                                       | DB             | 4.7                                           |
| Continental Oil Co.                      | Ponca City, Okla.     |                             | 1-50                          | 650                      | 750                             | 1       | 90                                | Vo           | 9.8                            | 4.8                           | 27.9                                       |                | 0                                             |
| ✓Fibreboard Products, Inc.               | East Antioch, Calif.  | Leland S. Rosener           | 1949                          | 650                      | 750                             | 2       | 160                               | BW           | 15.2                           |                               |                                            | DB             |                                               |
|                                          |                       |                             |                               |                          |                                 | 1       | 109                               | BW           | 23.2                           |                               |                                            |                | 4.6                                           |
| ✓A J Heinz Co.                           | Pittsburgh, Pa.       |                             | 1950                          | 650                      | 730                             | 2       | 70                                | CE           | 7.8                            | 3.0                           |                                            |                | 2.9                                           |
| ✓Thilmany Pulp & Paper Co.               | Kaukauna, Wis.        | Pfeifer & Schultz           | 1949                          | 650                      | 700                             | 1       | 90                                | BW           | 3.3                            | 4.5                           | 34.0                                       |                | 2.2                                           |
| ✓Carnegie-Illinois Steel Corp.           | Rankin, Pa.           |                             | 4-50                          | 625                      | 750                             | 1       | 300                               | RS           | 119.3                          | 23.0                          | 19.9                                       | DB             | 0                                             |
| ✓Jefferson Chemical Co.                  | Port Neches, Texas    |                             | 1949                          | 625                      | 760                             | 3       | 85                                | FW           | 12.1                           | 4.8                           | 23.7                                       | DB             | 0                                             |
|                                          |                       |                             |                               |                          |                                 | 1       | 52                                | CE           |                                |                               |                                            |                |                                               |
| ✓Riegel Paper Co.                        | Acme, N. C.           | J E Sirrene                 | 1951                          | 625                      | 725                             | 1       | 100                               | CE           |                                |                               |                                            |                |                                               |
|                                          |                       |                             |                               |                          |                                 | 1       | 100                               | CE           |                                |                               |                                            |                |                                               |
|                                          |                       |                             |                               |                          |                                 | 1       | 100                               | CE           |                                |                               |                                            |                |                                               |
| ✓Tennessee Eastman Corp.                 | Kingsport, Tenn.      |                             | 1949                          | 620                      | 710                             | 3       | 150                               | BW           | 18.8                           | 8.1                           | 26.4                                       |                | 7.3                                           |
| ✓American Boxboard Co.                   | Filer City, Mich.     | Carroll, Bechtel & Langtry  | 5-50                          | 615                      | 750                             | 1       | 125                               | BW           | 11.8                           |                               | 21.5                                       | DB             |                                               |
| ✓Medford Corp.                           | Medford, Oregon       |                             | 1950                          | 600                      | 680                             | 1       | 100                               | RS           | 18.5                           | 9.7                           | 18.2                                       |                | 0                                             |
|                                          |                       |                             | 1950                          | 600                      | 700                             | 1       | 325                               | FW           | 26.6                           | 17.5                          | 26.0                                       | DB             | 22.8                                          |
| ✓West Virginia Pulp & Paper.             | Charleston, S. C.     |                             | 1949                          | 600                      | 700                             | 1       | 103                               | BW           | 22.5                           |                               |                                            |                | 5.2                                           |
|                                          |                       |                             | 1950                          | 600                      | 700                             | 1       | 103                               | BW           | 22.5                           |                               |                                            |                | 5.2                                           |
| ✓West Virginia Pulp & Paper.             | Luke, Md.             |                             | 1950                          | 600                      | 700                             | 1       | 103                               | BW           | 22.5                           | 15.2                          |                                            | ST             | 5.2                                           |
| 300 - 599 PSI                            |                       |                             |                               |                          |                                 |         |                                   |              |                                |                               |                                            |                |                                               |
| ✓Minneapolis Street Rwy                  | Minneapolis, Minn.    |                             | 1949                          | 525                      | 850                             | 1       | 160                               | BW           | 17.7                           | 9.1                           | 26.2                                       |                | 8.4                                           |
| ✓Dow Chemical Co.                        | Freeport, Texas       |                             | 1-51                          | 500                      | 750                             | 1       | 250                               | RS           | 24.6                           | 11.0                          | 34.2                                       |                | 0                                             |
| ✓Hudson Pulp & Paper Corp.               | Palatka, Fla.         | J E Sirrene                 | 1951                          | 500                      | 750                             | 1       | 60                                | BW           | 3.4                            | 2.5                           |                                            | DB             |                                               |
|                                          |                       |                             |                               |                          |                                 | 1       | 60                                | BW           | 3.4                            | 2.5                           |                                            | DB             |                                               |
| ✓New York & Pennsylvania Co.             | Johnsburg, Pa.        |                             | 1950                          | 500                      | Sar                             | 1       | 85                                | CE           |                                |                               |                                            |                |                                               |
| ✓Pabst Brewing Co.                       | Milwaukee, Wis.       | Stone & Webster             | 1-50                          | 500                      | 575                             | 3       | 68                                | EM           | 12.7                           | 3.2                           | 26.9                                       | DB             | 3.9                                           |
| ✓St. Joseph Lead Co.                     | Josephtown, Pa.       |                             | 1950                          | 500                      | 700                             | 3       | 8                                 | BW           |                                |                               |                                            |                |                                               |
| ✓Tulsa Water Works                       | Tulsa, Okla.          | G F Phillips & Assoc.       | 4-50                          | 500                      | 750                             | 1       | 34                                | UI           | 4.7                            |                               | 28.0                                       |                | 0                                             |
| ✓W T Carter & Brother, Lumber            | Camden, Texas         | H E Bavay, Jr.              | 1950                          | 475                      | 580                             | 2       | 35                                | Vo           | 5.4                            |                               | 18.7                                       |                |                                               |
| ✓J I Case Co.                            | Racine, Wis.          |                             | 1949                          | 475                      | 750                             | 1       | 100                               | MI           | 7.9                            |                               | 35.5                                       |                | 3.7                                           |
| ✓Crossett Paper Mills.                   | Crossett, Ark.        |                             |                               | 475                      | 700                             | 1       | 89                                | CE           | 22.1                           |                               |                                            | ST             | 2.8                                           |
| ✓Florida State Hospital                  | Chattahoochee, Fla.   | Reynolds, Smith & Hills     | 3-50                          | 475                      | 575                             | 1       | 60                                | BW           |                                |                               |                                            |                |                                               |
| ✓International Paper Co.                 | Corinth, N. Y.        |                             | 1950                          | 475                      | 700                             | 1       | 80                                | CE           | 11.3                           | 3.1                           | 33.8                                       | DB             | 4.9                                           |
| ✓Miller Brewing Co.                      | Milwaukee, Wis.       | A G Behling                 | 1950                          | 475                      | 700                             | 2       | 40                                | Wi           | 7.0                            | 2.7                           | 22.0                                       | DB             |                                               |
| ✓Stanford Oil & Gas Co.                  | Andrews County, Texas |                             | 1949                          | 475                      | 712                             | 3       | 40                                | BW           |                                |                               |                                            |                |                                               |
| ✓Sutherland Paper Co.                    | Kalamazoo, Mich.      |                             | 1950                          | 475                      | 650                             | 1       | 100                               | Wi           | 11.5                           | 5.3                           | 24.6                                       | DB             | 6.4                                           |
| ✓Lee Rubber & Tire Co.                   | Conshohocken, Pa.     |                             | 1950                          | 460                      | 700                             |         |                                   |              |                                |                               |                                            |                |                                               |
| ✓Harvard Brewing Co.                     | Lowell, Mass.         | C T Main, Inc.              | 1949                          | 450                      | 353                             | 2       | 21                                | BW           | 2.8                            |                               |                                            |                |                                               |
| ✓Hudson Pulp & Paper Corp.               | Palatka, Fla.         | J E Sirrene                 | 1951                          | 450                      | 725                             | 1       | 113                               | BW           | 13.7                           |                               |                                            | ST             | 4.9                                           |
| ✓International Paper Co.                 | Georgetown, S. C.     |                             | 1949                          | 450                      | 675                             | 1       | 200                               | BW           | 17.6                           | 13.0                          | 20.0                                       |                | 2.9                                           |
| ✓Magnolia Petroleum Co.                  | Beaumont, Texas       |                             | 9-50                          | 450                      | 675                             | 1       | 175                               | CE           | 15.9                           | 8.4                           | 27.8                                       | DB             |                                               |
| ✓Magnolia Petroleum Co.                  | Rush Springs, Okla.   |                             | 1950                          | 450                      | 690                             | 2       | 25                                | Vo           |                                |                               |                                            |                |                                               |
| ✓John Morrell Co.                        | Sauk Falls, S. D.     | Helmick, Edeskuty & Lutz    | 1950                          | 450                      | 700                             | 1       | 100                               | BW           | 10.4                           | 9.2                           |                                            |                |                                               |
| ✓National Container Corp.                | Jacksonville, Fla.    |                             | 4-50                          | 450                      | 700                             | 1       | 75                                | CE           | 20.0                           |                               |                                            |                | 2.3                                           |
| ✓Niagara Alkali Co.                      | Niagara Falls, N. Y.  |                             | 1950                          | 450                      | 421                             | 1       | 65                                | BW           | 6.3                            |                               |                                            |                |                                               |
| ✓Quaker State Oil Refining               | Emmerton, Pa.         |                             | 1950                          | 450                      | 525                             | 1       | 60                                | BW           |                                | 2.5                           |                                            | DB             |                                               |
| ✓Riegel Textile Corp.                    | Kare Shoals, S. C.    |                             | 1950                          | 450                      | 535                             | 1       | 120                               | RS           | 16.8                           | 7.8                           |                                            | DB             | 0                                             |
| ✓Spreckles Sugar Co.                     | Spreckles, Calif.     |                             | 7-50                          | 450                      | 600                             | 1       | 175                               | CE           | 15.3                           | 7.3                           | 30.0                                       |                |                                               |
| ✓Celina Stearic Acid Co.                 | Celina, Ohio          |                             | 1948                          | 425                      | Sar                             | 1       | 12                                | BW           |                                |                               |                                            |                |                                               |
| ✓Fletcher Paper Co.                      | Alpena, Mich.         | Cummins & Barnard           |                               | 425                      | 700                             | 1       | 45                                | Wi           | 6.2                            | 2.4                           | 26.7                                       | DB             | 3.6                                           |
| ✓Congoleum-Nairn Inc.                    | Kearny, N. J.         |                             | 1949                          | 420                      | 710                             | 1       | 60                                | BW           | 7.0                            | 2.7                           | 30.0                                       | DB             |                                               |
| ✓American Coating Mills                  | Madageton, Ohio       | B M Baxter                  | 1949                          | 400                      | 600                             | 1       | 55                                | BW           | 6.1                            |                               |                                            |                | 3.6                                           |
| ✓Dept of Public Works                    | Chicago, Ill.         |                             | 1952                          | 400                      | 648                             | 4       | 45                                | EM           | 7.5                            | 2.3                           |                                            |                | 0                                             |
| ✓Liberty Powder Co.                      | Mt. Broadock, Pa.     |                             | 1949                          | 400                      | 371                             | 2       | 17                                | BW           | 2.8                            |                               |                                            | DB             | 0                                             |
|                                          |                       |                             | 1949                          | 400                      | 750                             | 1       | 100                               | RS           |                                |                               |                                            | DB             |                                               |
| ✓Lone Star Steel Co.                     | East Texas, Texas     |                             | 1949                          | 400                      | 750                             | 3       | 100                               | BW           | 50.0                           | 25.0                          |                                            | DB             |                                               |

1 - Air-cooled  
 Ad - Arsenical Admiralty  
 AC - Allis-Chalmers Mfg Co  
 AsCu - Arsenical copper  
 Ad - Admiralty  
 Al - Ames Iron Works  
 An - Anthracite  
 Bz - Bigelow Co  
 BL - Black liquor  
 Br - Brass

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

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

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

# 1950 Design Survey of Typical Industrial and

Compiled by J C McCabe, Associate Editor

| Company                              | Location                 | Consulting Engineers            | First operation, new units | Nominal pressure, psi | Nominal steam temperature, F | BOILERS |                                |              |                             | Furnace volume, 1000 cu ft | Heat release, 1000 Btu per cu ft per hr | Furnace bottom | Economizer surface, per boiler, 1000 sq ft |
|--------------------------------------|--------------------------|---------------------------------|----------------------------|-----------------------|------------------------------|---------|--------------------------------|--------------|-----------------------------|----------------------------|-----------------------------------------|----------------|--------------------------------------------|
|                                      |                          |                                 |                            |                       |                              | Number  | Capacity, each, 1000 lb per hr | Manufacturer | Heating surface, 1000 sq ft |                            |                                         |                |                                            |
| Sonoco Products Co.....              | Hartsville, S. C.....    |                                 |                            | 400                   |                              |         |                                |              |                             |                            |                                         |                |                                            |
| ✓Canadian National Rwy.....          | Montreal, Que.....       |                                 | 1949                       | 380                   | 493                          | 1       | 15                             | FW           | 2.4                         | 0.9                        | 27.6                                    | DB             |                                            |
| ✓Carthage Fabrics Corp.....          | Carthage, N. C.....      |                                 | 1950                       | 375                   | 410                          | 1       | 3.6                            | CE           | 0.25                        |                            |                                         |                |                                            |
| Pure Oil Co.....                     | Warland, Wyo.....        |                                 | 11-49                      | 375                   | Sat                          | 3       | 24                             | EC           | 3.5                         | 1.0                        | 32.5                                    | DB             |                                            |
| Southwest Gas Producing Co.....      | Dubach, La.....          |                                 | 1949                       | 360                   | 536                          | 3       | 60                             | Vo           |                             |                            |                                         |                |                                            |
| ✓Marinette Paper Co.....             | Marinette, Wis.....      |                                 | 1950                       | 350                   | 500                          | 1       | 50                             | BW           | 7.9                         | 2.6                        |                                         |                |                                            |
| Sarco Co.....                        | Bethlehem, Pa.....       |                                 | 1949                       | 350                   | Sat                          | 1       | 3.5                            | IB           | 0.4                         | 0.1                        | 38.0                                    | DB             |                                            |
| ✓Gypsum Lime & Alabastine Ltd.....   | Winnipeg, Man.....       | W M Bird.....                   | 2-50                       | 325                   | 400                          | 1       | 30                             | FW           | 4.6                         | 1.6                        | 26.2                                    |                |                                            |
| American Seating Co.....             | Grand Rapids, Mich.....  | Hamilton, Weeber & Ward.....    | 1950                       | 300                   | 600                          | 1       | 60                             | Wi           | 8.1                         | 3.0                        | 25.4                                    |                | 3.2                                        |
| Connecticut State Hospital.....      | Middletown, Conn.....    | Fletcher Thompson.....          | 5-51                       | 300                   | 455                          | 4       | 40                             | BI           | 6.1                         | 1.8                        | 29.0                                    |                |                                            |
| Cooperative Refinery Assn.....       | Coffeyville, Kan.....    |                                 | 1950                       | 300                   | 464                          | 1       | 50                             | EC           | 6.9                         | 2.4                        | 28.0                                    | DB             |                                            |
| Great Falls Bleachery & Dye Wks..... | Somersworth, N. H.....   |                                 | 4-50                       | 300                   |                              | 3       | 25                             | Wi           | 2.5                         | 0.6                        | 55.7                                    |                |                                            |
| Mansfield State Training.....        | Mansfield, Conn.....     | Hurley & Capocefalo.....        | 11-50                      | 300                   | 456                          | 3       | 30                             | Bi           | 4.3                         | 1.4                        | 28.0                                    |                |                                            |
| Shell Oil Co.....                    | Elk City, Okla.....      |                                 | 1950                       | 300                   | 406                          | 3       | 18.5                           | Vo           | 3.2                         | 1.1                        | 22.5                                    |                |                                            |
| ✓P Stevens & Co.....                 | Cheraw, S. C.....        | J E Sirrine.....                | 1950                       | 300                   | Sat                          | 1       | 80                             | CE           | 9.4                         |                            |                                         |                |                                            |
| ✓Texas Gulf Sulphur Co.....          | Warland, Wyo.....        |                                 | 1950                       | 300                   | 403                          | 3       | 50                             | BW           | 6.0                         |                            |                                         |                |                                            |
| ✓Torrance State Hospital.....        | Torrance, Pa.....        | H F Lentz.....                  | 1950                       | 300                   | 366                          | 1       | 45                             | BW           | 6.9                         | 1.9                        | 24.5                                    |                | 0                                          |
| ✓United States Rubber Co.....        | Los Angeles, Calif.....  |                                 | 8-50                       | 300                   | Sat                          | 1       | 70                             | BW           | 7.4                         | 3.2                        | 28.0                                    |                |                                            |
| Univ of Oklahoma.....                | Oklahoma City, Okla..... | Collins.....                    | 1949                       | 300                   |                              | 2       | 10                             | MI           |                             |                            |                                         |                |                                            |
| ✓Walker Bros.....                    | Conshohocken, Pa.....    |                                 | 1950                       | 300                   | Sat                          | 1       | 14                             | FW           | 1.7                         |                            |                                         |                |                                            |
| 250 TO 299 PSI                       |                          |                                 |                            |                       |                              |         |                                |              |                             |                            |                                         |                |                                            |
| Bethlehem Steel Co.....              | Steelton, Pa.....        |                                 | 4-50                       | 275                   | 500                          | 1       | 150                            | EC           | 21.1                        | 13.5                       | 14.8                                    | DB             |                                            |
| ✓California Co.....                  | Hico, La.....            |                                 | 1949                       | 275                   | 406                          | 2       | 33                             | BW           |                             |                            |                                         |                |                                            |
| ✓Hawthorn State Hospital.....        | Macedonia, Ohio.....     | Berswinger & Hoch.....          | 5-50                       | 275                   | 401                          | 2       | 30                             | BW           |                             |                            |                                         |                |                                            |
| Indiana Farm Bureau Refinery.....    | St. Vernon, Ind.....     |                                 | 1950                       | 275                   | 406                          | 1       | 22                             | Vo           | 3.2                         |                            |                                         |                | 0.4                                        |
| Liquid Carbonic Co.....              | Cincinnati, Ohio.....    |                                 | 6-50                       | 275                   | 475                          | 1       | 17                             | EC           | 3.1                         | 1.0                        | 32.5                                    | DB             |                                            |
| ✓Studebaker Corp.....                | South Bend, Ind.....     |                                 | 1948                       | 275                   | 520                          | 1       | 210                            | FW           | 22.3                        | 9.7                        | 29.1                                    |                | 4.6                                        |
| ✓Texas State College for Women.....  | Denton, Texas.....       |                                 | 1-49                       | 275                   | 509                          | 2       | 32                             | Vo           | 5.6                         |                            |                                         |                |                                            |
| Univ of Connecticut.....             | Storrs, Conn.....        | Hubbard, Lawless & Blakely..... | 1950                       | 275                   | Sat                          | 2       | 35                             | Bi           | 5.0                         | 1.9                        | 24.0                                    |                |                                            |
| ✓Liquid Carbonic Co.....             | Indianapolis, Ind.....   |                                 | 1950                       | 270                   | 480                          | 1       | 15                             | CE           |                             |                            |                                         |                |                                            |
| ✓Hughes Tool Co.....                 | Houston, Texas.....      | Strauss, Frank Co.....          | 1950                       | 255                   | 474                          | 2       | 21                             | BW           | 2.9                         |                            |                                         |                |                                            |
| American Can Co.....                 | Milwaukee, Wis.....      |                                 | 6-50                       | 250                   | Sat                          | 2       | 50                             | EC           | 6.9                         | 2.3                        | 30.0                                    | DB             |                                            |
| ✓American Hide & Felt Co.....        | Newark, N. J.....        | Geo London.....                 | 1950                       | 250                   | Sat                          | 1       | 45                             | CE           | 6.2                         | 1.8                        | 30.7                                    | DB             | 0                                          |
| ✓Armco Steel Co.....                 | Ashland, Ky.....         |                                 | 1950                       | 250                   | 488                          | 3       | 70                             | BW           | 10.0                        |                            | 25.0                                    |                |                                            |
| ✓Atlanta Water Wks.....              | Atlanta, Ga.....         |                                 | 1949                       | 250                   | 538                          | 1       | 44                             | BW           |                             |                            |                                         |                |                                            |
| Aurora Gasoline.....                 | Detroit, Mich.....       |                                 | 10-50                      | 250                   | Sat                          | 1       | 35                             | Bi           | 5.0                         | 1.8                        | 26.0                                    |                |                                            |
| ✓P Ballantine & Sons.....            | Newark, N. J.....        |                                 | 1949                       | 250                   | 366                          | 1       | 60                             | BW           | 7.8                         |                            |                                         |                |                                            |
| ✓Barton Salt Co.....                 | Hutchinson, Kan.....     |                                 | 1951                       | 250                   | 500                          | 1       | 39                             | BW           | 6.2                         |                            |                                         |                |                                            |
| ✓Beaver Wood Fibre Co, Ltd.....      | Thorold, Ont.....        |                                 | 1-51                       | 250                   | Sat                          | 2       | 65                             | FW           |                             |                            |                                         |                |                                            |
| Burkhardt Brewery.....               | Akron, Ohio.....         | R W Berger.....                 | 1949                       | 250                   |                              | 2       | 27                             | Vo           | 4.4                         | 1.5                        |                                         | DB             | 0                                          |
| Certain-Seed Products Corp.....      | York, Pa.....            |                                 | 1948                       | 250                   | Sat                          | 1       | 50                             | EC           |                             |                            |                                         |                |                                            |
| ✓Consumers Heating Co.....           | Klamath Falls, Ore.....  |                                 | 1-50                       | 250                   | Sat                          | 1       | 25                             | RS           | 3.6                         | 1.9                        | 19.7                                    | DB             | 0.6                                        |
| ✓Cranston Print Wks.....             | Fletcher, N. C.....      | J E Sirrine.....                | 1-50                       | 250                   | 500                          | 1       | 50                             | BW           | 6.8                         | 2.3                        |                                         |                |                                            |
| Du Quoin Packing Co.....             | Du Quoin, Ill.....       | Ferris & Hamig.....             | 10-49                      | 250                   | 500                          | 1       | 17                             | EC           | 3.0                         | 0.7                        | 35.0                                    | DB             |                                            |
| Formers Union Central Exch.....      | Laurel, Mont.....        |                                 | 1950                       | 250                   | Sat                          | 1       | 75                             | Vo           | 10.1                        | 4.1                        | 21.8                                    |                |                                            |
| ✓Field Packing Co.....               | Owensboro, Ky.....       | A M Kinney.....                 | 1949                       | 250                   | 416                          | 1       | 27                             | CE           |                             |                            |                                         |                |                                            |
| ✓Ford Motor Co.....                  | Hamburg, N. Y.....       | Fairbrother & Miehl.....        | 1950                       | 250                   | Sat                          | 3       | 40                             | CE           | 6.1                         | 1.7                        | 30.9                                    | DB             | 0                                          |
| ✓Gonic Mfg Co.....                   | Gonic, N. H.....         | Harrison G White.....           | 1948                       | 250                   | 500                          | 1       | 30                             | BW           | 4.4                         |                            |                                         |                |                                            |
| Grand Northern RR.....               | Grand Forks, N. D.....   |                                 | 5-50                       | 250                   | 381                          | 1       | 29                             | WB           | 4.0                         | 1.1                        | 35                                      |                |                                            |
| ✓Hackensack Water Co.....            | Oradell, N. J.....       |                                 | 1951                       | 250                   | 507                          | 2       | 30                             | CE           | 5.8                         | 1.7                        | 24.0                                    |                | 3.9                                        |
| ✓Hanes Dye & Finishing Co.....       | Winston-Salem, N. C..... | W O Sprinkle.....               | 7-48                       | 250                   | Sat                          | 1       | 40                             | BW           | 7.1                         |                            |                                         |                |                                            |
| ✓Johns Manville Prod Corp.....       | Richmond, Ind.....       |                                 | 1950                       | 250                   | Sat                          | 1       | 18                             | CE           | 3.2                         | 0.7                        |                                         | DB             |                                            |
| ✓Juice Industries Div.....           | Dunedin, Fla.....        | B C Skinner.....                | 1950                       | 250                   | Sat                          | 1       | 60                             | CE           |                             |                            |                                         |                |                                            |
| ✓Kalamazoo Vegetable Parchment.....  | Espanola, Ont.....       |                                 | 2-50                       | 250                   | 450                          | 1       | 100                            | CE           | 11.1                        |                            |                                         |                |                                            |
| ✓Kansas State College.....           | Manhattan, Kan.....      |                                 | 1950                       | 250                   | 500                          | 2       | 50                             | CE           | 6.8                         | 1.7                        | 40.5                                    | DB             | 0                                          |
| ✓Kerr Bleaching & Finishing Wks..... | Concord, N. C.....       |                                 | 1949                       | 250                   | 397                          | 1       | 60                             | BW           | 7.9                         | 2.4                        | 30.0                                    |                | 0                                          |
| ✓Kingan & Co.....                    | Richmond, Va.....        | Allen J Saville, Inc.....       | 1950                       | 250                   | 324                          | 1       | 33                             | BW           | 4.8                         | 1.1                        | 39.7                                    |                |                                            |
| ✓Charles Lachman Co.....             | Phoenixville, Pa.....    | C T Main.....                   | 1950                       | 250                   | Sat                          | 3       | 22                             | CE           | 3.9                         |                            |                                         |                |                                            |
| ✓Lima-Hamilton Corp.....             | Lima, Ohio.....          |                                 | 1950                       | 250                   | Sat                          | 2       | 75                             | CE           | 8.9                         | 3.7                        | 25.7                                    |                | 0                                          |
| ✓Long Lac Pulp & Paper Co.....       | Terrace Bay, Ont.....    | Stadler, Hurter & Co.....       | 1948                       | 250                   | Sat                          | 3       | 85                             | FW           | 12.4                        | 5.6                        | 16.1                                    | DB             |                                            |
| ✓Lukens Steel Co.....                | Coatesville, Pa.....     |                                 | 1950                       | 250                   | 500                          | 2       | 23                             | FW           |                             |                            |                                         |                |                                            |
| ✓Lula Factory Inc.....               | Belle Rose, La.....      |                                 | 10-50                      | 250                   | 490                          | 1       | 43                             | CE           | 5.9                         | 1.5                        |                                         |                |                                            |
| ✓Lynchburg State Colony.....         | Colony, Va.....          |                                 | 1950                       | 250                   | Sat                          | 1       | 21                             | CE           |                             |                            |                                         |                |                                            |
| Monson State Hospital.....           | Palmer, Mass.....        | E C Brown Co.....               | 5-50                       | 250                   | Sat                          | 1       | 36                             | EC           | 4.3                         | 0.9                        | 53.0                                    | DB             |                                            |
| ✓National Vulcanized Fibre Co.....   | Newark, Del.....         |                                 | 1949                       | 250                   | Sat                          | 1       | 27                             | CE           | 4.0                         | 1.0                        | 35.0                                    |                |                                            |
| ✓National Waterproof Papers.....     | Camden, N. Y.....        |                                 | 1950                       | 250                   | Sat                          | 1       | 21.6                           | CE           | 3.2                         |                            |                                         |                |                                            |
| ✓Neville Co.....                     | Pittsburgh, Pa.....      |                                 | 1949                       | 250                   | 400                          | 1       | 16                             | CB           |                             |                            |                                         |                |                                            |
| ✓N. Y. Butchers Dressed Meat.....    | New York, N. Y.....      |                                 | 7-50                       | 250                   | Sat                          | 2       | 50                             | CE           | 6.8                         |                            | 31.8                                    |                | 0                                          |
| ✓N. Y. Central System.....           | Elkhart, Ind.....        |                                 | 1948                       | 250                   | Sat                          | 1       | 17.3                           | CE           | 3.1                         |                            |                                         |                |                                            |
|                                      |                          |                                 |                            |                       |                              | 1       | 24.7                           | BW           | 4.0                         |                            |                                         |                |                                            |

A - Air cooled  
AAd - Arsenal Admiralty  
AC - Allis-Chalmers Mfg Co  
AsCu - Arsenal copper  
Ad - Admiralty  
Al - Ames Iron Works  
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Bs - Bigelow Co  
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Hy - Hydraulic coupling  
Ke - E Keeler Co  
M - Motor drive  
Ma - Magnetic coupling  
Me - Mechanical  
MT - One motor, one turbine per fan  
Mu - Muntz metal  
O - Oil

# Institutional Power Plants: 200 Psi and Above

| per boiler, 1000 sq ft | Air-heater type | Dust collectors | F-D FANS |                    | I-D FANS |                    | Firing             | FUEL               |                                | FEED PUMPS                |             | TURBINES     |                   |            |              |                   | CONDENSERS       |                   |                     |                  | Total boiler capacity incl new units, 1000 lb | Total generator capacity incl new units, 1000 kw |
|------------------------|-----------------|-----------------|----------|--------------------|----------|--------------------|--------------------|--------------------|--------------------------------|---------------------------|-------------|--------------|-------------------|------------|--------------|-------------------|------------------|-------------------|---------------------|------------------|-----------------------------------------------|--------------------------------------------------|
|                        |                 |                 | Drive    | Air-volume control | Drive    | Gas-volume control |                    | Type               | Heating value, 1000 Btu per lb | Ash-fusion temperature, F | Drive       | Flow control | Capacity, 1000 kw | Speed, rpm | Manufacturer | Backpressure psia | No. of bleed pts | Generator cooling | Surface, 1000 sq ft | No. water passes |                                               |                                                  |
| 2.7                    | Tu              | Me              | M        | D                  | M        | D                  | O                  | O                  |                                |                           |             | 10.0         | 3600              | GE         | 35           | 1                 | A                |                   |                     |                  | 285                                           | 14                                               |
| 9.5                    | Tu              | Me              | M        | D                  | M        | D                  | O                  | O                  |                                |                           |             |              |                   |            |              |                   |                  |                   |                     |                  | 105                                           |                                                  |
|                        |                 |                 |          | D, Hy              |          |                    | O                  | O                  | 13.3                           | 1970                      | 1M, 1T      | R            |                   |            |              |                   |                  |                   |                     |                  |                                               |                                                  |
|                        |                 |                 | T        | T, S               |          | T, S               | O, G               | O, G               | 19.0                           |                           |             |              |                   |            |              |                   |                  |                   |                     |                  |                                               |                                                  |
|                        |                 | Me              | M        |                    |          |                    | D                  | O                  | 1.0                            |                           | 1M, 1T      | S, R         | 0.7               | 3600       | GE           |                   | A                |                   |                     |                  | 180                                           | 1.4                                              |
|                        |                 |                 |          |                    |          |                    | D                  | O                  | 13.0                           | 2800                      | 2M, 1T      | S            |                   |            |              |                   |                  |                   |                     |                  | 115                                           |                                                  |
|                        |                 |                 |          |                    |          |                    | D                  | O                  | 18.5                           |                           |             |              |                   |            |              |                   |                  |                   |                     |                  |                                               |                                                  |
| 2.5                    | Tu              |                 | M        | D                  | M        | D                  | O                  | O                  | 7.1                            | 2200                      | 2M          | R            |                   |            |              |                   |                  |                   |                     |                  | 30                                            |                                                  |
|                        |                 | Me              | M        | V                  | M        | S, D               | SS(125)            | O                  | 13.6                           | 2600                      | 1T          | S, R         |                   |            |              |                   |                  |                   |                     |                  | 145                                           | 3.0                                              |
|                        |                 |                 |          |                    |          |                    | O                  | O                  |                                |                           |             |              |                   |            |              |                   |                  |                   |                     |                  |                                               |                                                  |
|                        |                 |                 | T        | S                  | T        | D                  | O, G               | O                  | 17.5                           |                           | 1M, 1T      | R            |                   |            |              | 25                |                  | 1.6               | 2                   | Ad               | 400                                           |                                                  |
|                        |                 |                 | M        | D                  |          |                    | O                  | O                  | 18.3                           |                           | 1M, 1T      |              | 0.9               | 327        | SE           | 18                |                  | A                 |                     |                  | 75                                            | 0.9                                              |
|                        |                 |                 |          |                    |          |                    | O, G               | O, G               |                                |                           |             |              |                   |            |              |                   |                  |                   |                     |                  |                                               |                                                  |
| 7.1                    | Tu              | Me              | M        | V                  | M        | D                  | SS(196)            | O                  | 13.5                           | 2150                      | 1M, 1T      | R            |                   |            |              |                   |                  |                   |                     |                  | 80                                            |                                                  |
|                        |                 | O               |          |                    |          |                    | G                  |                    | 1.1                            |                           |             |              |                   |            |              |                   |                  |                   |                     |                  |                                               |                                                  |
|                        |                 |                 | T        | D                  |          |                    | WH                 |                    |                                |                           | 3T          | S            |                   |            |              |                   |                  |                   |                     |                  | 230                                           |                                                  |
| 9                      |                 | O               | MT       | S, D               |          |                    | UF(128)            | O                  | 12.8                           | 2300                      | 3T          | S, R         | 0.5               |            | SE           | 5                 |                  |                   |                     |                  | 120                                           | 0.5                                              |
| 4.7                    | Tu              |                 | MT       | V                  | MT       | V                  | O, G               | O                  | 18.5                           |                           | 1M, 1T      | S            |                   |            |              |                   |                  |                   |                     |                  | 150                                           |                                                  |
|                        |                 |                 |          |                    | Ma       |                    | G                  | O                  | 1.0                            |                           | 2T          | S, R         |                   |            |              |                   |                  |                   |                     |                  | 20                                            |                                                  |
|                        |                 | M               |          |                    |          |                    | O                  | O                  |                                |                           | 1M          |              |                   |            |              |                   |                  |                   |                     |                  |                                               | 14                                               |
| 17.5                   | Tu              |                 |          |                    |          |                    | G <sup>1</sup> , O | G <sup>1</sup> , O |                                |                           |             |              |                   |            |              |                   |                  |                   |                     |                  |                                               |                                                  |
|                        | PI              |                 | T        | D                  | T        | D                  | G                  | G                  | 1.0                            |                           | 2T          | S            |                   |            |              |                   |                  |                   |                     |                  | 66                                            |                                                  |
|                        |                 |                 | M        | V                  |          | D                  | SS                 | O, G               | 10.8                           | 2350                      | 2M, 1MT     | R            | 0.5               | 5000       | Wo           | 5                 |                  | A                 |                     |                  | 105                                           | 1.0                                              |
|                        |                 |                 | T        | D                  | T        | D                  | O, G               | O, G               |                                |                           | 1M, 1T      |              |                   |            |              |                   |                  |                   |                     |                  | 50                                            |                                                  |
|                        |                 | Me              | MT       | V                  | MT       | S, D               | SS(384)            | O, G               | 11.0                           | 2200                      |             |              |                   |            |              |                   |                  |                   |                     |                  | 1,050                                         | 16                                               |
|                        |                 |                 |          |                    | M        |                    | O                  | O                  | 1.0                            |                           | 2M          |              | 1.0               | 3600       | MI           |                   | 1                | A                 | 1.3                 | 2                | Cu                                            | 64                                               |
|                        |                 |                 |          |                    |          |                    | O                  | O                  |                                |                           |             |              |                   |            |              |                   |                  |                   |                     |                  |                                               | 2.5                                              |
|                        |                 | M               | V        |                    |          |                    | O                  | O                  |                                |                           | 2M          | R            |                   |            |              |                   |                  |                   |                     |                  | 15                                            |                                                  |
|                        |                 |                 | D        | M                  |          |                    | G                  | O                  | 1.0                            |                           | 1M, 2T      | S, R         |                   |            |              |                   |                  |                   |                     |                  | 42                                            |                                                  |
|                        |                 | M               | V        | M                  | D        |                    | O                  | O                  |                                |                           |             |              |                   |            |              |                   |                  |                   |                     |                  |                                               |                                                  |
| 6                      |                 | MT              | D        | O                  | D        |                    | O, G               | O                  | 18.4                           |                           | 1M, 1Du     | R            |                   |            |              |                   |                  |                   |                     |                  | 100                                           |                                                  |
|                        |                 |                 | T        | Hy                 | T        | Hy                 | O, G <sup>1</sup>  |                    |                                |                           |             |              |                   |            |              |                   |                  |                   |                     |                  | 746                                           |                                                  |
|                        |                 |                 |          |                    |          |                    | UF                 | C, O, G            |                                |                           | 1T          | R            |                   |            |              |                   |                  |                   |                     |                  |                                               |                                                  |
|                        |                 |                 | T        | D                  |          | D                  | O                  | O                  |                                |                           |             |              |                   |            |              |                   |                  |                   |                     |                  | 150                                           | 0.5                                              |
|                        |                 |                 | T        |                    | T        |                    | O, G               | O                  | 1.0                            |                           | 2T          |              |                   |            |              |                   |                  |                   |                     |                  | 98                                            |                                                  |
|                        |                 |                 |          |                    |          |                    | SS(154)            | C                  |                                |                           |             |              |                   |            |              |                   |                  |                   |                     |                  |                                               |                                                  |
| 0                      |                 | Me              | MT       | D                  | MT       | D                  | SS                 | C                  | 12.0                           |                           | 1M, 1T, 1Du | S, R         |                   | 3600       | WE           |                   |                  |                   |                     |                  | 54                                            |                                                  |
|                        |                 |                 |          |                    |          |                    | SS(110)            | C                  |                                |                           |             |              |                   |            |              |                   |                  |                   |                     |                  | 80                                            |                                                  |
| 3.1                    | Tu              | Me              | T        | D                  | T        | D                  | HF, O              | HF                 | 4.5                            |                           | 1M, 2Du     | S, R         |                   |            |              |                   |                  |                   |                     |                  |                                               |                                                  |
| 3.5                    | Tu              | Me              | M        | D                  | M        | D                  | SS(157)            | C                  | 13.5                           |                           | 1M, 1T      | R            |                   |            |              |                   |                  |                   |                     |                  | 50                                            |                                                  |
|                        |                 |                 | M        | V                  |          |                    | TG                 | C                  |                                |                           |             |              |                   |            |              |                   |                  |                   |                     |                  |                                               |                                                  |
|                        |                 |                 | T        | D                  | T        | D                  | O, G               | O                  | 17.9                           |                           |             |              |                   |            |              |                   |                  |                   |                     |                  |                                               |                                                  |
| 1.7                    |                 | M               | D        | M                  | D        |                    | SS                 | O                  |                                |                           |             |              | 0.4               |            | El           |                   |                  |                   |                     |                  | 37                                            |                                                  |
|                        |                 |                 |          |                    |          |                    | O                  | O                  |                                |                           |             |              |                   |            |              |                   |                  |                   |                     |                  | 120                                           |                                                  |
| 2.6                    | Tu              |                 | MT       |                    | MT       |                    | O                  | O                  |                                |                           | 1M, 1T      |              | 0.8               | 3600       | GE           | 10                | 0                | A                 |                     |                  | 65                                            | 1.9                                              |
|                        |                 |                 |          |                    |          |                    | SS                 | Li                 | 6.7                            | 2050                      |             |              |                   |            |              |                   |                  |                   |                     |                  |                                               |                                                  |
|                        |                 |                 | T        | D                  | T        | S, D               | O                  | O                  | 18.5                           |                           |             |              |                   |            |              |                   |                  |                   |                     |                  | 120                                           |                                                  |
|                        | Tu              | Me              | M        | V                  | M        | D                  | SS(128)            | O                  | 12.8                           | 2808                      | 1M, 1Du     | R            |                   |            |              |                   |                  |                   |                     |                  | 88                                            |                                                  |
|                        | Tu              | Me              | M        | D                  | M        | D                  | SS(61)             | O                  | 11.6                           |                           | 1Du         | R            |                   |            |              |                   |                  |                   |                     |                  | 70                                            |                                                  |
|                        | O               | O               | M        | S, D               | M        | S, D               | O                  | O                  |                                |                           | 1M, 1T      |              | 1.3               | 5000       | Wo           | 3.5               | 1                | A                 |                     |                  | 150                                           | 2.0                                              |
| 0                      |                 |                 | M        | Hy                 | M        | D                  | P                  | C                  | 14.0                           | 2400                      | M, T        | R            |                   |            |              |                   |                  |                   |                     |                  | 350                                           | 5.1                                              |
| 4.8                    | Tu              | Me              | M        | V                  | 2Mp      | D                  | SS(174)            | C, O               | 13.5                           | 2500                      | 2M          | R            | 2.0               | 3600       | WE           | 5                 | 0                | A                 |                     |                  | 228                                           | 3.8                                              |
|                        |                 |                 |          |                    |          |                    | O, G               |                    | 1.0                            |                           | 1M, 2T      | R            |                   |            |              |                   |                  |                   |                     |                  | 90                                            |                                                  |
|                        |                 | M               | D        |                    | D        |                    | UF(88)             | C                  | 12.8                           | 2400                      | 2Du         | R            |                   |            |              |                   |                  |                   |                     |                  | 50                                            |                                                  |
| 0                      |                 |                 | MT       | Hy                 | MT       | D, Hy              | UF                 | C                  |                                |                           | 1M, 2Du     | R            |                   | 1750       | Te           |                   |                  |                   |                     |                  |                                               |                                                  |
|                        |                 |                 | M        | V                  | M        | D                  | SS(198)            | C                  |                                |                           | 1M, 1T      | R            |                   |            |              |                   |                  |                   |                     |                  | 300                                           | 1.8                                              |
| 9.5                    | Tu              | E               | M        | D                  | T        | S, D               | P                  | C, WW              |                                |                           | 2M, 1T      | R            |                   |            |              |                   |                  |                   |                     |                  |                                               |                                                  |
|                        |                 |                 | M        | D                  | M        | Hy                 | BL                 | BL                 |                                |                           |             |              |                   |            |              |                   |                  |                   |                     |                  |                                               |                                                  |
|                        |                 |                 | T        | S, D               |          |                    | O                  | O                  |                                |                           | 1M, 1T      | R            |                   |            |              |                   |                  |                   |                     |                  |                                               |                                                  |
|                        |                 |                 |          |                    |          |                    | SS(85)             | O                  | 4.1                            |                           | 3T          | S, R         |                   |            |              |                   |                  |                   |                     |                  | 135                                           |                                                  |
|                        |                 |                 |          |                    |          |                    | SS                 | C                  |                                |                           |             |              |                   |            |              |                   |                  |                   |                     |                  |                                               |                                                  |
|                        |                 |                 |          |                    |          |                    | UF                 |                    |                                |                           |             |              |                   |            |              |                   |                  |                   |                     |                  |                                               |                                                  |
|                        |                 | T               |          |                    |          |                    | O                  | O                  | 18.5                           |                           |             |              |                   |            |              |                   |                  |                   |                     |                  |                                               |                                                  |
|                        |                 | M               | D        | M                  | D        |                    | O                  | O                  | 18.4                           |                           | 2Du         |              |                   |            |              |                   |                  |                   |                     |                  |                                               | 21.6                                             |
|                        |                 |                 |          |                    |          |                    | O, G               | O                  | 1.0                            |                           | 2Du         | R            |                   |            |              |                   |                  |                   |                     |                  | 28                                            |                                                  |
| 0                      |                 |                 | M        | V                  |          |                    | O                  | O                  | 18.9                           |                           | 1M, 1T, 1Du | R            |                   |            |              |                   |                  |                   |                     |                  | 100                                           |                                                  |
|                        |                 |                 | T        | D                  |          |                    | SS                 | C                  |                                |                           |             |              |                   |            |              |                   |                  |                   |                     |                  |                                               |                                                  |
|                        |                 | T               | D        |                    |          |                    | SS                 | C                  |                                |                           | 3Du         | R            |                   |            |              |                   |                  |                   |                     |                  |                                               | 47.5                                             |

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

T - Turbine drive  
 Te - Terry Steam Turbine Co  
 Tu - Tubular  
 UF - Underfeed stoker  
 UI - Union Iron Works  
 V - Vane control  
 Vo - Henry Vogt Machine Co  
 W - Wood  
 WH - Waste heat

WB - Wm Bros Boiler & Mfg Co  
 WE - Westinghouse Electric Corp  
 Wi - Wickes Boiler Co  
 Wo - Worthington Pump & Machy Corp,  
 Moore Steam Turbine Division  
 WF - Wood waste  
 1 - Blast-furnace gas  
 2 - Future coal  
 3 - Flat grate  
 4 - Steam-heated

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

# 1950 Design Survey of Typical Industrial and

Compiled by J C McCabe, Associate Editor

| Company                                | Location             | Consulting Engineers        | First operation, new units | Nominal pressure, psi | Nominal steam temperature, F | BOILERS |                                |              |                             | Furnace volume, 1000 cu ft | Heat release, 1000 Btu per cu ft per hr | Furnace bottom | Economizer surface per boiler, 1000 sq ft |
|----------------------------------------|----------------------|-----------------------------|----------------------------|-----------------------|------------------------------|---------|--------------------------------|--------------|-----------------------------|----------------------------|-----------------------------------------|----------------|-------------------------------------------|
|                                        |                      |                             |                            |                       |                              | Number  | Capacity, each, 1000 lb per hr | Manufacturer | Heating surface, 1000 sq ft |                            |                                         |                |                                           |
| Northampton State Hospital             | Northampton, Mass.   | E C Brown Co.               | 5-50                       | 250                   | Sat                          | 1       | 35                             | EC           | 4.6                         | 0.9                        |                                         | DB             |                                           |
| ✓ Owens-Corning Fiberglas              | Newark, Ohio         |                             | 1949                       | 250                   |                              | 1       | 40                             | CE           | 6.8                         |                            |                                         |                |                                           |
| L W Packard Co.                        | Ashland, N.H.        | G H Perkins                 | 11-49                      | 250                   | Sat                          | 1       | 30                             | Bi           | 5.0                         | 1.6                        | 25.0                                    |                |                                           |
| ✓ Pure Carbonic Inc.                   | Chicago, Ill.        | R N Palmquist               | 1948                       | 250                   | Sat                          | 1       | 30                             | CE           |                             |                            |                                         |                |                                           |
| ✓ Raleigh State Hospital               | Raleigh, N.C.        | Wiley & Wilson              | 1951                       | 250                   |                              | 501     | 2                              | 50           | BW                          | 16.8                       | 30.0                                    | DB             | 0                                         |
| ✓ Remington Arms Co.                   | Iliac, N.Y.          |                             | 1948                       | 250                   |                              | 2       | 25                             | CE           |                             |                            |                                         |                |                                           |
| ✓ Revere Copper & Brass                | Detroit, Mich.       |                             |                            | 250                   |                              | 2       | 22                             | CE           | 7.9                         |                            |                                         |                |                                           |
| ✓ Rockford Drop Forge                  | Rockford, Ill.       | Lockwood Greene             | 1950                       | 250                   |                              | 2       | 30                             | CE           |                             |                            |                                         |                |                                           |
| Safety Car Mfg & Ltg Co.               | New Haven, Conn.     |                             | 1949                       | 250                   | Sat                          | 1       | 5                              | Bi           |                             |                            |                                         |                |                                           |
| ✓ Shellmar Products Co.                | Mt Vernon, Ohio      | Ralph Spengle               | 1948                       | 250                   | 366                          | 1       | 30                             | BW           | 3.9                         | 1.2                        | 33.6                                    | DB             | 0                                         |
| ✓ Spaulding Fibre Co.                  | Tanawanda, N.Y.      |                             | 1949                       | 250                   | Sat                          | 2       | 32.5                           | CE           |                             |                            |                                         |                |                                           |
| ✓ Sprague Electric Co.                 | North Adams, Mass.   | F P Sheldon & Sons          | 1949                       | 250                   | 397                          | 3       | 25                             | BW           |                             |                            |                                         |                |                                           |
| Standard-Coosa-Thatcher Co.            | Rossville, Ga.       |                             | 1-50                       | 250                   | Sat                          | 1       | 15                             | CE           |                             |                            |                                         |                |                                           |
| ✓ Susquehanna Mills, Inc.              | Sunbury, Pa.         | Franklin Engrg              | 1948                       | 250                   | Sat                          | 2       | 35                             | CE           | 5.5                         |                            | 25.0                                    | DB             |                                           |
| ✓ United Chemical & Organic Products   | Calumet City, Ill.   |                             | 1949                       | 250                   | 371                          | 1       | 40                             | BW           | 6.2                         |                            |                                         |                |                                           |
| ✓ United Rayon Mills                   | Elbarton, Ga.        |                             | 1949                       | 250                   | Sat                          | 1       | 20                             | CE           |                             |                            |                                         |                |                                           |
| ✓ United States Rubber Co.             | Naugatuck, Conn.     |                             | 1949                       | 250                   | 366                          | 3       | 35                             | Wt           | 5.5                         | 1.6                        | 26.5                                    |                | 0                                         |
| ✓ U S Vanadium Corp.                   | Rifle, Colo.         |                             |                            | 250                   | Sat                          | 1       | 15                             | RS           |                             |                            |                                         |                |                                           |
| ✓ Univ of Florida                      | Tallahassee, Fla.    |                             | 1948                       | 250                   | Sat                          | 1       | 31                             | BW           | 3.9                         |                            |                                         |                |                                           |
| ✓ Univ of Houston                      | Houston, Texas       |                             | 1950                       | 250                   | Sat                          | 2       | 27                             | CE           | 3.9                         |                            |                                         |                |                                           |
| ✓ Univ of Kentucky                     | Lexington, Ky.       | Proctor & Ingles            | 1950                       | 250                   | 477                          | 2       | 60                             | BW           | 7.8                         | 2.7                        |                                         |                |                                           |
| ✓ Univ of Maryland                     | College Park, Md.    | Egli & Gompf                | 1948                       | 250                   | Sat                          | 1       | 100                            | RS           | 12.4                        | 5.4                        | 22.0                                    | DB             |                                           |
| ✓ Univ of Oregon                       | Eugene, Ore.         | J. Donald Kroeker           | 10-50                      | 250                   | 500                          | 3       | 35                             | CE           | 6.9                         | 1.9                        | 22.7                                    |                |                                           |
| ✓ Upper Snake River Valley Dairy Assn. | Idaho Falls, Idaho   | Power Engrg Co.             | 1948                       | 250                   | 350                          | 1       | 23                             | CE           | 3.9                         |                            |                                         |                | 0                                         |
| ✓ Western Gypsum Co.                   | Sigurd, Utah         |                             | 1948                       | 250                   | 396                          | 1       | 40                             | BW           | 5.7                         |                            |                                         |                |                                           |
| 200 TO 249 PSI                         |                      |                             |                            |                       |                              |         |                                |              |                             |                            |                                         |                |                                           |
| Brown Knitting Co.                     | Warsaw, N.Y.         |                             | 1949                       | 240                   | 353                          | 1       | 22                             | WB           | 2.6                         | 0.9                        | 27.6                                    |                |                                           |
| Ross & Roberts, Inc.                   | Stratford, Conn.     |                             | 11-49                      | 230                   | Sat                          | 1       | 5                              | Bi           |                             |                            |                                         |                |                                           |
| ✓ Budd Co.                             | Detroit, Mich.       |                             | 1949                       | 225                   | 366                          | 1       | 120                            | BW           | 11.5                        | 6.3                        |                                         |                |                                           |
| ✓ Cornell Dubilier Elec Corp.          | New Bedford, Mass.   |                             | 1949                       | 225                   | 388                          | 1       | 15                             | BW           | 2.4                         |                            |                                         |                |                                           |
| ✓ Dan River Mills                      | Danville, Va.        | United Engrs & Constr Corp. | 9-50                       | 225                   | 500                          | 1       | 100                            | CE           | 14.5                        | 7.1                        | 17.5                                    | DB             |                                           |
| ✓ Esso Standard Oil Co.                | Everett, Mass.       |                             | 1950                       | 225                   | 485                          | 3       | 80                             | RS           | 8.6                         | 4.0                        | 25.0                                    | DB             | 0.3                                       |
| Massachusetts Inst of Tech             | Cambridge, Mass.     | Jackson & Moreland          | 11-50                      | 225                   | 490                          | 2       | 70                             | Wt           | 8.4                         | 3.1                        | 28.6                                    |                | 2.6                                       |
| ✓ McCarthy Chemical Co.                | Winnie, Texas        |                             | 1948                       | 225                   | 387                          | 3       | 70                             | UI           |                             |                            |                                         |                |                                           |
| ✓ Minnesota State Hospital             | Fergus Falls, Minn.  |                             | 1950                       | 225                   | Sat                          | 1       | 28                             | RS           | 4.0                         | 1.4                        |                                         |                |                                           |
| ✓ Ohio State Univ.                     | Columbus, Ohio       | Sargent & Lundy             | 1951                       | 225                   | 615                          | 1       | 80                             | BW           | 6.7                         | 4.4                        | 24.3                                    | DB             | 3.0                                       |
| ✓ Villanova College                    | Villanova, Pa.       | Gilboy & O'Malley           |                            | 220                   |                              | 2       | 30                             | CE           | 5.5                         | 1.5                        | 28.5                                    |                | 0                                         |
| ✓ Dominion Alkali & Chem Co.           | Beauharnois, Quebec  |                             | 1949                       | 213                   | 360                          | 2       | 18                             | CB           | 2.5                         |                            |                                         |                |                                           |
| ✓ Howard Smith Paper Mills, Ltd.       | Montreal, Quebec     |                             | 1948                       | 213                   | Sat                          | 1       | 15                             | CB           |                             |                            |                                         |                |                                           |
| ✓ American Forge Co.                   | Niles, Calif.        |                             | 1948                       | 200                   | Sat                          | 1       | 24.6                           | EC           |                             |                            |                                         |                |                                           |
| ✓ Belcher Oil Co.                      | Miami, Fla.          |                             | 1949                       | 200                   | Sat                          | 1       | 17                             | CB           | 2.1                         |                            |                                         |                |                                           |
| Bowser, Inc.                           | Fort Wayne, Ind.     |                             | 1949                       | 200                   | Sat                          | 2       | 25                             | EC           | 3.9                         |                            | 30.0                                    |                |                                           |
| ✓ Briggs Mfg Co.                       | Youngstown, Ohio     |                             | 1950                       | 200                   | 366                          | 1       | 74                             | BW           | 7.6                         | 2.7                        |                                         |                |                                           |
| ✓ Buffalo State Hospital               | Buffalo, N.Y.        |                             | 1950                       | 200                   | 364                          | 4       | 53.5                           | BW           | 8.3                         |                            |                                         |                |                                           |
| ✓ Canadian Pacific Rwy.                | Montreal, Que.       |                             | 1950                       | 200                   | 495                          | 2       | 20                             | FW           |                             |                            |                                         |                |                                           |
| ✓ Celina Stearic Acid Co.              | Celina, Ohio         |                             |                            | 200                   | Sat                          | 1       | 18                             | Vo           |                             |                            |                                         |                |                                           |
| ✓ Crown Zellerbach Co.                 | West Linn, Oregon    |                             |                            | 200                   | 500                          | 2       | 120                            | BW           | 10.0                        | 5.0                        | 33.5                                    |                | 0                                         |
| ✓ Dalhousie Univ.                      | Halifax, Nova Scotia | Engrg Serv Co.              | 1950                       | 200                   | Sat                          | 2       | 15                             | FW           | 13.6                        | 6.0                        | 33.6                                    |                | 0                                         |
| ✓ D Norman Beatty Memorial Hosp.       | Westville, Ind.      |                             | 1950                       | 200                   | 366                          | 3       | 40                             | UI           | 6.0                         | 1.8                        |                                         |                |                                           |
| ✓ Foote Mineral Co.                    | Exton, Pa.           |                             | 10-49                      | 200                   | Sat                          | 1       | 21                             | EC           | 3.5                         | 1.0                        | 26.0                                    | DB             |                                           |
| ✓ Gillet Carbonizing Co.               | Lowell, Mass.        |                             | 1948                       | 200                   | Sat                          | 2       | 17                             | CB           |                             |                            |                                         |                |                                           |
| ✓ Girard College                       | Philadelphia, Pa.    |                             | 1949                       | 200                   | 366                          | 1       | 12                             | BW           | 2.5                         |                            |                                         |                |                                           |
| Hotel Dennis                           | Atlantic City, N.J.  | Pennell & Wiltburger        | 9-50                       | 200                   | Sat                          | 1       | 14                             | Bi           |                             |                            |                                         |                |                                           |
| International Harvester Co.            | West Pullman, Ill.   | E K Moore                   | 1950                       | 200                   | 377                          | 1       | 60                             | Vo           | 8.4                         | 2.4                        | 31.0                                    |                |                                           |
| ✓ Minneapolis-Moline Co.               | Moline, Ill.         |                             | 1948                       | 200                   | 370                          | 2       | 25                             | MI           | 4.0                         |                            |                                         |                |                                           |
| ✓ Moose Lake State Hospital            | Moose Lake, Minn.    | Toltz, King & Day           | 1950                       | 200                   | 378                          | 1       | 24                             | UI           | 3.5                         | 1.1                        | 27.5                                    |                | 0                                         |
| ✓ Morgan Dyeing & Bleaching Co.        | Racine, Ill.         | E H Casson                  | 1949                       | 200                   | 366                          | 1       | 30                             | BW           |                             |                            |                                         |                |                                           |
| ✓ New York & Pennsylvania Co.          | Lack Haven, Pa.      |                             | 1949                       | 200                   | 500                          | 1       | 70                             | EC           | 8.5                         | 3.2                        | 30.9                                    |                |                                           |
| ✓ New York & Pennsylvania Co.          | Willsboro, N.Y.      |                             | 3-50                       | 200                   | Sat                          | 2       | 8                              | EC           | 4.1                         |                            |                                         |                |                                           |
| ✓ Oswego Falls Corp.                   | Fulton, N.Y.         | Burns & Roe                 | 1950                       | 200                   | 415                          | 3       | 50                             | RS           | 6.9                         | 2.2                        | 28.1                                    | DB             | 1.1                                       |
| ✓ Parafine Co.                         | Metuchen, N.J.       |                             | 1950                       | 200                   | 365                          | 2       | 40                             | BW           |                             |                            |                                         |                |                                           |
| Reeves Mfg Co.                         | Dover, Ohio          | Paul Prince & Assoc         | 1949                       | 200                   | Sat                          | 2       | 40                             | EC           | 5.8                         | 1.8                        | 29.0                                    | DB             |                                           |
| ✓ Rock Island Refining Corp.           | Rock Island, Ind.    |                             | 1950                       | 200                   | 470                          | 1       | 36                             | Vo           | 5.3                         | 2.1                        | 25.0                                    |                |                                           |
| ✓ St Joseph's Hospital                 | Lancaster, Pa.       |                             | 9-50                       | 200                   | 353                          | 3       | 13.5                           | BW           | 2.5                         | 0.5                        |                                         |                |                                           |
| ✓ St Peter State Hospital              | St Peter, Minn.      | Toltz, King & Day, Inc.     | 1-50                       | 200                   | Sat                          | 1       | 28                             | EC           | 5.0                         | 1.3                        | 28.0                                    | DB             |                                           |
| ✓ Sears Roebuck & Co.                  | Seattle, Wash.       | H W Beecher                 |                            | 200                   | Sat                          | 2       | 22                             | BW           | 6.5                         |                            |                                         |                |                                           |
| ✓ A G Spaulding & Bros, Inc.           | Chicopee, Mass.      |                             | 11-50                      | 200                   | Sat                          | 1       | 16                             | Bi           |                             |                            |                                         |                |                                           |
| State Penitentiary                     | Jefferson City, Mo.  | Fitzpatrick & Nash          | 2-50                       | 200                   | Sat                          | 2       | 28                             | Wt           | 2.8                         | 0.7                        | 51.5                                    | DB             | 0                                         |
| ✓ Slaughter Chemical Co.               | Niagara Falls, N.Y.  |                             | 1949                       | 200                   | 366                          | 1       | 45                             | BW           | 6.8                         |                            |                                         |                |                                           |
| ✓ Suni-Citrus Products Co.             | Haines City, Fla.    |                             |                            | 200                   |                              | 1       | 25                             | EC           |                             |                            |                                         |                |                                           |
| U S Dept of Interior                   | Rifle, Colo.         |                             | 1950                       | 200                   | 385                          | 1       | 15                             | UI           | 2.5                         | 0.7                        | 29.3                                    |                |                                           |
| ✓ U S Tobacco Co.                      | Chicago, Ill.        |                             | 1948                       | 200                   | 378                          | 1       | 40                             | BW           | 6.5                         |                            |                                         |                |                                           |
| ✓ Univ of Alberta                      | Edmonton, Alta.      |                             | 1950                       | 200                   | 382                          | 2       | 50                             | FW           |                             |                            |                                         |                |                                           |
| ✓ Univ of Toronto                      | Toronto, Ont.        | H G Acres                   | 1951                       | 200                   | 387                          | 2       | 75                             | JI           | 8.0                         | 4.1                        | 21.7                                    |                |                                           |
| ✓ Walla Walla College                  | Walla Walla, Wash.   | E F Cross                   | 1949                       | 200                   | Sat                          | 2       | 20                             | EC           | 6.2                         | 0.6                        |                                         | DB             |                                           |
| ✓ Wells Linen Supply Co.               | Springfield, Mass.   |                             | 1948                       | 200                   | Sat                          | 1       | 22                             | RS           | 3.3                         |                            |                                         |                |                                           |
| ✓ Western Milk Corp.                   | Rochester, N.Y.      |                             | 1949                       | 200                   |                              | 1       | 4                              | CB           |                             |                            |                                         |                |                                           |
| ✓ Westinghouse Elec Corp.              | Hyde Park, Mass.     |                             | 1950                       | 200                   | 371                          | 2       | 30                             | BW           | 3.7                         | 1.0                        |                                         |                | 0                                         |

## Institutional Power Plants: 200 Psi and Above

| Air-heater surface,<br>per boiler, 100 sq ft | Air-heater type | Dust collectors | F-D FANS       |                    | I-D FANS       |                    | Firing         | FUEL  |                                |                           | FEED PUMPS     |              | TURBINES          |            |              |                    |                  |                     | Generator cooling | CONDENSERS       |               |      |  | Total boiler capacity incl new units, 1000 lb | Total generator capacity incl new units, 1000 kw |
|----------------------------------------------|-----------------|-----------------|----------------|--------------------|----------------|--------------------|----------------|-------|--------------------------------|---------------------------|----------------|--------------|-------------------|------------|--------------|--------------------|------------------|---------------------|-------------------|------------------|---------------|------|--|-----------------------------------------------|--------------------------------------------------|
|                                              |                 |                 | Drive          | Air-volume control | Drive          | Gas-volume control |                | Type  | Heating value, 1000 Btu per lb | Ash-fusion temperature, F | Drive          | Flow control | Capacity, 1000 kw | Speed, rpm | Manufacturer | Backpressure, psia | No. of bleed pts | Surface, 1000 sq ft |                   | No. water passes | Tube material |      |  |                                               |                                                  |
|                                              | Mo              | MT              | S, V           | MT                 | S, D           | UF SS(137)         | C              | 14.0  |                                | 1M, 1T                    | S, R           |              |                   |            |              |                    |                  |                     |                   |                  | 165           |      |  |                                               |                                                  |
|                                              | Tu              | Mo              | M              | D                  | M              | D                  | H <sub>y</sub> | 11.5  |                                | 3M, 1T                    |                |              |                   |            |              |                    |                  |                     |                   |                  | 80            |      |  |                                               |                                                  |
| 0                                            | Mo              | M               | D              | M                  | H <sub>y</sub> | SS(306)            | C              | 13.7  | 2400                           | 2M, 1T                    | H <sub>y</sub> | 1.0          | 5000              | Wo         | 4.7          | 0                  | A                |                     |                   |                  | 125           | 1.0  |  |                                               |                                                  |
| 0                                            | Tu              | Mo              | M              | D                  | MT             | D                  | O              | 12.7  |                                | 1M, 1T                    | R              |              |                   |            |              |                    |                  |                     |                   |                  | 44            |      |  |                                               |                                                  |
|                                              | Tu              | Mo              | M              | D                  | MT             | D                  | O              | 12.0  |                                | 2M, 1T                    | R              |              |                   |            |              |                    |                  |                     |                   |                  | 90            |      |  |                                               |                                                  |
| 0                                            | O               | MT              | V              |                    | D              | SS(86)             | C              | 12.0  | 2200                           | 3Du                       | R              |              |                   |            |              |                    |                  |                     |                   |                  | 45            |      |  |                                               |                                                  |
|                                              | Mo              | T               | S              | T                  | S, D           | SS                 | C              | 13.3  | 2100                           | 1M, 1Du, 1MT              | R              |              |                   |            |              |                    |                  |                     |                   |                  | 140           |      |  |                                               |                                                  |
|                                              | Mo              | M               | D              | M                  | D              | UF                 | C              | 13.5  |                                | 2M, 1T                    |                |              |                   |            |              |                    |                  |                     |                   |                  | 90            |      |  |                                               |                                                  |
| 0                                            | Mo              | M               | D              | M                  | D              | TG(180)            | An             | 11.0  |                                | 1M, 1T                    | R              |              |                   |            |              |                    |                  |                     |                   |                  | 45            |      |  |                                               |                                                  |
|                                              | Mo              | M               | H <sub>y</sub> | M                  | H <sub>y</sub> | SS(50)             | C              | 11.0  |                                | 3T                        | S, R           | 0.2          | 3600              | MI         | 4            | 1                  |                  |                     |                   |                  | 70            |      |  |                                               |                                                  |
| 0                                            | Mo              | M               | V              | M                  | D              | O                  | C              | 18.3  |                                | 1M, 1T                    | R              |              |                   |            |              |                    |                  |                     |                   |                  | 85.6          | 1.5  |  |                                               |                                                  |
|                                              | Tu              | M               |                | M                  | D              | O                  | C              | 12.0  |                                | 2T                        |                |              |                   |            |              |                    |                  |                     |                   |                  | 24            |      |  |                                               |                                                  |
|                                              | Mo              | M               | D              | MT                 | D              | G                  | C              | 1.0   |                                | 2Du                       | S, R           |              |                   |            |              |                    |                  |                     |                   |                  | 105           |      |  |                                               |                                                  |
|                                              | Mo              | T               | S              | T                  | S              | SS(152)            | C              | 13.5  | 2400                           | 1M, 2T                    | H <sub>y</sub> |              |                   |            |              |                    |                  |                     |                   |                  | 13            |      |  |                                               |                                                  |
| 11.5                                         | Tu              | Mo              | MT             | MT                 | D              | P                  | C, O           | 1.1   |                                | 4T                        | R              |              |                   |            |              |                    |                  |                     |                   |                  | 111           |      |  |                                               |                                                  |
|                                              | Tu              | Mo              | M              | S                  | M              | S                  | HF             | 4.5   |                                | 2M, 2T                    | R              |              |                   |            |              |                    |                  |                     |                   |                  | 54            |      |  |                                               |                                                  |
|                                              | Mo              | M               | V              | M                  |                | SS(108)            | C              | 12.5  | 2500                           | 1M, 2T                    |                | { 1.5<br>1.5 | 3600<br>3600      | Wo<br>Wo   | 1.0<br>35    | 1<br>0             | A<br>A           | 1.7                 | 2                 | Ad               | 269           |      |  |                                               |                                                  |
|                                              | Mo              | M               | D              | M                  |                | SS                 | C              | 13.2  | 2240                           | 2Du                       | R              |              |                   |            |              |                    |                  |                     |                   |                  | 200           |      |  |                                               |                                                  |
|                                              |                 |                 |                |                    |                |                    |                |       |                                | 1T, 1Du                   | S, R           |              |                   |            |              |                    |                  |                     |                   |                  | 105           | 3.0  |  |                                               |                                                  |
|                                              |                 |                 |                |                    |                |                    |                |       |                                |                           |                |              |                   |            |              |                    |                  |                     |                   |                  | 23            |      |  |                                               |                                                  |
|                                              |                 |                 |                |                    |                |                    |                |       |                                |                           |                |              |                   |            |              |                    |                  |                     |                   |                  | 40            |      |  |                                               |                                                  |
|                                              |                 |                 |                |                    |                | SS                 | C              | 13.5  |                                |                           |                |              |                   |            |              |                    |                  |                     |                   |                  |               |      |  |                                               |                                                  |
| 15.9                                         | Tu              | Mo              | MT             | D                  | T              | O                  | C              | 14.0  | 2700                           | 1M, 3T                    | R              |              |                   |            |              |                    |                  |                     |                   |                  | 250           |      |  |                                               |                                                  |
| 8.6                                          | Tu              | Mo              | M              | V                  | M              | D                  | UF             | 14.5  | 2900                           | 2Du                       | R              |              |                   |            |              |                    |                  |                     |                   |                  |               |      |  |                                               |                                                  |
| 6.6                                          | Tu              |                 | T              | T                  | V              | O                  | C              | 14.2  | 2700                           |                           |                |              |                   |            |              |                    |                  |                     |                   |                  | 428           | 12.9 |  |                                               |                                                  |
|                                              |                 |                 | T              | T                  | S              | O                  | C              |       |                                | 1M, 2T                    |                |              |                   |            |              |                    |                  |                     |                   |                  | 240           |      |  |                                               |                                                  |
|                                              |                 |                 | T              | T                  | V              | O                  | C              | 18.1  |                                | 1M, 3T                    | S              |              |                   |            |              |                    |                  |                     |                   |                  | 190           | 2.7  |  |                                               |                                                  |
|                                              |                 |                 | M              | D                  | T              | G                  | C              | 1.0   |                                | 3T                        |                |              |                   |            |              |                    |                  |                     |                   |                  | 210           |      |  |                                               |                                                  |
|                                              |                 |                 |                |                    | D              | SS                 | C              | 13.8  |                                | 1Du, 1M, 1T               |                | 0.9          | 1200              | MI         | 5            | 1                  | A                |                     |                   |                  | 48            | 0.9  |  |                                               |                                                  |
| 0                                            | Mo              | M               | D              | M                  | D              | SS(182)            | C              | 12.0  | 2200                           | 1T                        | R              | 5.0          | 3600              | GE         |              | 1                  | A                | 6.0                 | 2                 | M <sub>u</sub>   | 465           | 14   |  |                                               |                                                  |
| 0                                            | Mo              | M               | D              | M                  | V              | TG(179)            | An             | 11.7  |                                | 2Du                       | R              |              |                   |            |              |                    |                  |                     |                   |                  | 60            |      |  |                                               |                                                  |
|                                              |                 |                 |                |                    | V              | UF(26)             |                | 14.0  |                                | 1M, 1Du                   | S, R           |              |                   |            |              |                    |                  |                     |                   |                  | 36            |      |  |                                               |                                                  |
|                                              |                 |                 |                |                    |                | O                  | C              |       |                                |                           |                |              |                   |            |              |                    |                  |                     |                   |                  |               |      |  |                                               |                                                  |
|                                              |                 |                 |                |                    | D              | O                  | C              |       |                                |                           |                |              |                   |            |              |                    |                  |                     |                   |                  |               |      |  |                                               |                                                  |
|                                              |                 |                 |                |                    |                | O                  | C              |       |                                | 1M                        |                |              |                   |            |              |                    |                  |                     |                   |                  | 38            |      |  |                                               |                                                  |
|                                              |                 |                 |                |                    |                | SS(72)             | C              | 14.0  | 2800                           |                           |                |              |                   |            |              |                    |                  |                     |                   |                  | 50            |      |  |                                               |                                                  |
|                                              |                 |                 |                |                    |                | O                  | C              |       |                                | 1M, 1T                    | R              |              |                   |            |              |                    |                  |                     |                   |                  | 74            |      |  |                                               |                                                  |
|                                              |                 |                 |                |                    |                | O                  | C              | 18.0  |                                | 2T, 1Du                   |                | 1.3          | 3600              |            | 10           |                    | A                |                     |                   |                  | 214           | 1.3  |  |                                               |                                                  |
|                                              |                 |                 |                |                    |                |                    |                |       |                                |                           |                |              |                   |            |              |                    |                  |                     |                   |                  | 280           |      |  |                                               |                                                  |
| 0                                            | Mo              | MT              | D, V           | D                  | D              |                    |                |       |                                |                           |                |              |                   |            |              |                    |                  |                     |                   |                  |               |      |  |                                               |                                                  |
| 15.0                                         | Tu              |                 | S              | T                  | S              | WW, O              | HF             | 4-8.0 |                                | 3T                        | S              |              |                   |            |              |                    |                  |                     |                   |                  | 410           |      |  |                                               |                                                  |
|                                              |                 |                 | S              | T                  | S              | WW, O              | HF             | 4-8.0 |                                |                           |                |              |                   |            |              |                    |                  |                     |                   |                  | 30            |      |  |                                               |                                                  |
|                                              |                 |                 | D, V           |                    |                | O                  | C              |       |                                |                           |                |              |                   |            |              |                    |                  |                     |                   |                  | 120           | 1.2  |  |                                               |                                                  |
|                                              |                 |                 | V              |                    |                | TG(128)            | C              |       | 2170                           | 3M                        | R              |              |                   |            |              |                    |                  |                     |                   |                  |               |      |  |                                               |                                                  |
|                                              |                 |                 | V              |                    |                | O                  | C              |       |                                |                           |                |              |                   |            |              |                    |                  |                     |                   |                  |               |      |  |                                               |                                                  |
|                                              |                 |                 | V              |                    |                | O                  | C              |       |                                | 2M                        | R              |              |                   |            |              |                    |                  |                     |                   |                  | 60            |      |  |                                               |                                                  |
|                                              |                 |                 | V              |                    |                | TG(71)             | An             | 12.5  | 2800                           |                           |                |              |                   |            |              |                    |                  |                     |                   |                  |               |      |  |                                               |                                                  |
|                                              |                 |                 | V              |                    |                | TG(154)            | An             | 12.5  | 2800                           | 2T, 1Du                   | R              |              |                   |            |              |                    |                  |                     |                   |                  | 96            |      |  |                                               |                                                  |
|                                              | Mo              | M               | D              |                    | D              | O                  | C              |       |                                |                           |                |              |                   |            |              |                    |                  |                     |                   |                  |               |      |  |                                               |                                                  |
| 0                                            | Mo              | M               | D              |                    | D              | TG(168)            | C              | 11.5  | 2250                           | 1M, 2T                    | R              |              |                   |            |              |                    |                  |                     |                   |                  | 135           |      |  |                                               |                                                  |
|                                              | Mo              | M               | D              |                    | D              | SS(94)             | C              | 11.5  | 2000                           | 2                         | R              |              |                   |            |              |                    |                  |                     |                   |                  | 48            |      |  |                                               |                                                  |
|                                              | 2Mo             | MT              | MT             |                    |                | UF(68)             | C              | 13.0  | 2400                           | 2                         | R              | 0.7          | 4500              | MI         | 5.0          | 1                  | A                | 1.0                 | 2                 | Br               | 72            | 1.1  |  |                                               |                                                  |
|                                              | Mo              | M               | V              | M                  | V              | O, G               | O, G           | 12.5  | 2800                           | 1M                        |                |              |                   |            |              |                    |                  |                     |                   |                  | 45            | 11   |  |                                               |                                                  |
|                                              | Mo              | M               | V              | M                  | V              | SS                 | C              |       |                                | 1M, 2T                    | S, R           |              |                   |            |              |                    |                  |                     |                   |                  | 570           | 17   |  |                                               |                                                  |
| 0                                            | Mo              | M               | V              | T                  | S              | WH                 | WH             | 13.5  | 2400                           |                           |                |              |                   |            |              |                    |                  |                     |                   |                  | 150           | 10   |  |                                               |                                                  |
|                                              | Mo              | M               | V              | M                  | D              | SS(144)            | C              |       |                                | 2M                        |                |              |                   |            |              |                    |                  |                     |                   |                  |               |      |  |                                               |                                                  |
|                                              |                 |                 | V              |                    |                | O                  | C              |       |                                | 4M, 1T                    | R              |              |                   |            |              |                    |                  |                     |                   |                  |               |      |  |                                               |                                                  |
|                                              |                 |                 | V              |                    |                | SS(123)            | C              | 11.0  |                                | 1M, 1Du                   | R              |              |                   |            |              |                    |                  |                     |                   |                  | 65            |      |  |                                               |                                                  |
|                                              |                 |                 | V              |                    | D              | O                  | C              |       |                                |                           |                |              |                   |            |              |                    |                  |                     |                   |                  |               |      |  |                                               |                                                  |
|                                              |                 |                 | V              |                    | D              | UF(43)             | O, G           | 14.2  | 2800                           | 2M, 1T                    | R              |              |                   |            |              |                    |                  |                     |                   |                  |               |      |  |                                               |                                                  |
|                                              | Mo              | M               | D              |                    |                | O, G               | O, G           |       |                                | M                         | R              |              |                   |            |              |                    |                  |                     |                   |                  |               |      |  |                                               |                                                  |
| 0                                            |                 |                 | V              |                    |                | SS                 | C, O           |       |                                |                           |                |              |                   |            |              |                    |                  |                     |                   |                  |               |      |  |                                               |                                                  |
| 0                                            | Mo              | M               | D              | M                  | D              | WW, O              | C              |       |                                |                           |                |              |                   |            |              |                    |                  |                     |                   |                  |               |      |  |                                               |                                                  |
|                                              | Mo              | M               | D              | M                  | D              | C, G               | C              |       |                                | 2M                        | R              |              |                   |            |              |                    |                  |                     |                   |                  | 56            |      |  |                                               |                                                  |
|                                              |                 |                 | D              | M                  | D              | SS(146)            | C              |       |                                | 1M, 1T                    |                |              |                   |            |              |                    |                  |                     |                   |                  | 90            |      |  |                                               |                                                  |
|                                              |                 |                 |                |                    |                | O                  | C              |       |                                |                           |                |              |                   |            |              |                    |                  |                     |                   |                  |               |      |  |                                               |                                                  |
|                                              | Tu              | T               | V              | T                  | D              | O                  | C              | 18.0  |                                |                           | S              |              |                   |            |              |                    |                  |                     |                   |                  |               |      |  |                                               |                                                  |
|                                              | Tu              | T               |                |                    |                | TG(144)            | C, G           |       |                                | 1T, 2Du                   |                |              |                   |            |              |                    |                  |                     |                   |                  | 88            | 1.3  |  |                                               |                                                  |
| 7.0                                          | Tu              | M               | V              | M                  | D              | O, G               | C              | 12.0  | 2000                           |                           |                |              |                   |            |              |                    |                  |                     |                   |                  | 172           | 0.8  |  |                                               |                                                  |
|                                              | Mo              | T               | S              | T                  | S              | P                  | C              | 12.0  |                                | 3Du                       | S, R           |              |                   |            |              |                    |                  |                     |                   |                  | 150           |      |  |                                               |                                                  |
|                                              | Mo              | M               | V              | M                  | D              | SS                 | C              | 16.5  |                                | 2Du                       | R              | 0.3          | 400               | AI         | 3.5          |                    |                  |                     |                   |                  | 40            | 0.3  |  |                                               |                                                  |
|                                              | Tu              | M               | V              | M                  | V              | O                  | C              |       |                                |                           |                |              |                   |            |              |                    |                  |                     |                   |                  | 22            | 0.3  |  |                                               |                                                  |
| .8                                           | Tu              | M               | V              | M                  | V              | O                  | C              | 16.4  |                                | 2M, 1T                    | R              |              |                   |            |              |                    |                  |                     |                   |                  | 60            |      |  |                                               |                                                  |

# 1950 Design Survey of Typical Industrial and

Compiled by J. C. McCabe, Associate Editor

| Company                           | Location                   | Consulting Engineers | First operation new units | Nominal pressure, psi | Nominal steam temperature, °F | BOILERS |                               |               | Firing  | TURBINES         |            |              |                   |                  | Total boiler capacity incl new units, 1000 lb | Total generator capacity incl new units, 1000 kw |
|-----------------------------------|----------------------------|----------------------|---------------------------|-----------------------|-------------------------------|---------|-------------------------------|---------------|---------|------------------|------------|--------------|-------------------|------------------|-----------------------------------------------|--------------------------------------------------|
|                                   |                            |                      |                           |                       |                               | Number  | Capacity, each 1000 lb per hr | Manufacturing |         | Capacity 1000 kw | Speed, rpm | Manufacturer | Backpressure, psi | No. of bleed pps |                                               |                                                  |
| 161 TO 199 PSI                    |                            |                      |                           |                       |                               |         |                               |               |         |                  |            |              |                   |                  |                                               |                                                  |
| Westmoreland Hospital Assn.       | Greensburg, Pa.            | E. D. Tucker         | 1950                      | 196                   | 338                           | 1       | 11                            | UI            | UF(56)  |                  |            |              |                   |                  | 24                                            |                                                  |
| Canadian National Rwy.            | No. Battleford, Sask.      |                      | 1949                      | 192                   | 327                           | 1       | 6                             |               |         |                  |            |              |                   |                  |                                               |                                                  |
| Canadian National Rwy.            | Hudson Bay Junction, Sask. |                      | 1949                      | 192                   | 327                           | 1       | 6                             |               |         |                  |            |              |                   |                  |                                               |                                                  |
| Canadian National Rwy.            | Drumheller, Alta.          |                      | 1949                      | 192                   | 327                           | 1       | 6                             |               |         |                  |            |              |                   |                  |                                               |                                                  |
| York Knitting Mills.              | Woodstock, Ont.            |                      | 1950                      | 192                   | 353                           | 2       | 6                             | CV            | UF      |                  |            |              |                   |                  |                                               |                                                  |
| U. S. Penitentiary                | McNeil Island, Wash.       |                      | 1949                      | 185                   | 480                           | 1       | 13.8                          | Ke            | An      | 1.0              | 4500       | Wo           | 1.0               | 1                | 44.9                                          | 2.1                                              |
| Cane Co.                          | Chicago, Ill.              | Sargent & Lundy      | 1949                      | 180                   | 373                           | 1       | 75                            | BW            | SS(166) |                  |            |              |                   |                  |                                               |                                                  |
| Flinkore Co.                      | East Rutherford, N. J.     | R. R. Imsande        | 1950                      | 180                   | 440                           | 1       | 30                            | RS            |         |                  |            |              |                   |                  | 60                                            |                                                  |
| Raanoke Mills Co.                 | Raanoke Rapids, N. C.      |                      | 180                       | Sat                   | 2                             | 40      | RW                            | SS            |         |                  |            |              |                   |                  | 80                                            |                                                  |
| U. S. Veterans Administration     | Sawtelle, Calif.           |                      | 2-50                      | 180                   | 375                           | 2       | 50                            | UI            | O,G     |                  |            |              |                   |                  | 117                                           |                                                  |
| Zion's Co-op Mercantile Inst.     | Salt Lake City, Utah       |                      | 180                       | 460                   | 1                             | 18.5    | UI                            | O,G           |         | 1.0              | 200        | SE           | 6.0               |                  | 50                                            | 1.0                                              |
| Delaware, Lackawanna & Western RR | Hoboken, N. J.             |                      | 1950                      | 175                   | 378                           | 1       | 60                            | FW            | O       |                  |            |              |                   |                  | 240                                           |                                                  |
| Native Luce Co.                   | Dallas, Pa.                |                      | 1948                      | 175                   | Sat                           | 1       | 18                            | IB            | TG      |                  |            |              |                   |                  |                                               |                                                  |
| Noranda Mines                     | Noranda, Que.              |                      | 10-51                     | 175                   | 525                           | 1       | 22.5                          | JI            | WH      |                  |            |              |                   |                  |                                               |                                                  |
| U. S. Plywood Corp.               | Orangeburg, S. C.          | Lockwood Greene      | 175                       | Sat                   | 1                             | 17      | BW                            | WW            |         |                  |            |              |                   |                  |                                               |                                                  |
| W. J. Jette Co.                   | Montreal, Que.             |                      | 1950                      | 171                   |                               | 2       | 18                            | CV            | O       |                  |            |              |                   |                  |                                               |                                                  |
| Episcopalianne Corp.              | Ottawa, Ont.               |                      | 1950                      | 170                   |                               | 2       | 24                            | CV            | O       |                  |            |              |                   |                  |                                               |                                                  |
| Shorpe & Dahme Inc.               | North Wales, Pa.           |                      | 1950                      | 170                   | Sat                           | 2       | 40                            | CE            | O       |                  |            |              |                   |                  |                                               |                                                  |
| National Institutes of Health     | Bethesda, Md.              |                      | 1952                      | 165                   |                               | 3       | 150                           | EM            | O       |                  |            |              |                   |                  | 450                                           |                                                  |
| 151 TO 160 PSI                    |                            |                      |                           |                       |                               |         |                               |               |         |                  |            |              |                   |                  |                                               |                                                  |
| Acton Rubber Co.                  | Actonville, Que.           |                      | 160                       | Sat                   | 1                             | 15      | CV                            | UF            |         |                  |            |              |                   |                  |                                               |                                                  |
| Adelphian Academy                 | Holly, Mich.               | R. Cole              | 1949                      | 160                   | 363                           | 1       | 12.5                          | WB            | C       |                  |            |              |                   |                  | 25                                            |                                                  |
| Allied Kid Co.                    | Wilmington, Del.           |                      | 1949                      | 160                   | 331                           | 1       | 17                            | BW            | O       |                  |            |              |                   |                  |                                               |                                                  |
| Allis Chalmers Mfg. Co.           | West Allis, Wis.           | F. G. Schmid         | 160                       | 470                   | 1                             | 175     | RS                            | P             |         | 7.4              | 3600       | AC           |                   |                  | 672                                           | 12                                               |
| Arkport Dairies                   | Arkport, N. Y.             |                      | 1950                      | 160                   | Sat                           | 1       | 20                            | EC            | O       |                  |            |              |                   |                  |                                               |                                                  |
| Aran Canning Co.                  | Stockton, Calif.           |                      | 1949                      | 160                   | Sat                           | 1       | 30                            | EC            | O       |                  |            |              |                   |                  |                                               |                                                  |
| Babcock & Wilcox Co.              | Alliance, Ohio             |                      | 1949                      | 160                   | 353                           | 2       | 25                            | BW            | UF      |                  |            |              |                   |                  | 50                                            |                                                  |
| Bailey Meter Co.                  | Cleveland, Ohio            |                      | 1948                      | 160                   |                               | 1       | 10                            | BW            | UF      |                  |            |              |                   |                  |                                               |                                                  |
| Ballantine Brewing Co.            | Newark, N. J.              |                      | 1949                      | 160                   | 350                           | 2       | 35                            | BW            | O       |                  |            |              |                   |                  | 90                                            |                                                  |
| Beecher Falls Mfg. Corp.          | Beecher Falls, Vt.         |                      | 1951                      | 160                   | Sat                           | 2       | 23                            | Wi            | W       | 0.2              | 200        | SE           | 12                |                  | 23                                            | 0.9                                              |
| Bon Secours Hospital              | Grasse Point, Mich.        |                      | 1950                      | 160                   | Sat                           | 1       | 11                            | EC            | O       |                  |            |              |                   |                  |                                               |                                                  |
| Brigham Young Univ.               | Provo, Utah                | Earl Gritton         | 2-50                      | 160                   |                               | 1       | 21                            | UI            | P       |                  |            |              |                   |                  |                                               |                                                  |
| Brown & Williamson Tobacco Corp.  | Petersburg, Va.            |                      | 2-50                      | 160                   | Sat                           | 1       | 20                            | RS            | TG      |                  |            |              |                   |                  |                                               |                                                  |
| Butler Cnty Memorial Hospital     | Butler, Pa.                | Fosdick-Helmer       | 1950                      | 160                   | 338                           | 2       | 20                            | BW            | UF      |                  |            |              |                   |                  | 40                                            |                                                  |
| Butler & Ullman, Inc.             | Hadley, Mass.              |                      | 1948                      | 160                   | 324                           | 1       | 16.5                          | BW            | UF      |                  |            |              |                   |                  |                                               |                                                  |
| H. F. Byrd, Inc.                  | Berryville, Va.            |                      | 1949                      | 160                   | Sat                           | 1       | 16                            | EC            | O       |                  |            |              |                   |                  |                                               |                                                  |
| Carlisle Tire & Rubber Co.        | Carlisle, Pa.              |                      | 1950                      | 160                   | Sat                           | 1       | 16                            | EC            | SS      |                  |            |              |                   |                  | 26                                            |                                                  |
| Chicago Natural History Museum    | Chicago, Ill.              |                      | 1950                      | 160                   | 338                           | 2       | 20                            | BW            | TG      |                  |            |              |                   |                  | 50                                            |                                                  |
| Chicago Pneumatic Tool Co.        | Frankfort, N. Y.           |                      | 1949                      | 160                   | 338                           | 3       | 20                            | BW            | SS      |                  |            |              |                   |                  | 60                                            |                                                  |
| Chicago Screw Co.                 | Bellwood, Ill.             |                      | 1949                      | 160                   | 338                           | 3       | 16.5                          | BW            | O       |                  |            |              |                   |                  | 49.5                                          |                                                  |
| City of Baltimore Airport         | Baltimore, Md.             |                      | 1949                      | 160                   | Sat                           | 2       | 25                            | EC            | O       |                  |            |              |                   |                  | 50                                            |                                                  |
| City of Chicago                   | Chicago, Ill.              |                      | 7-50                      | 160                   | 347                           | 3       | 29                            | WB            |         |                  |            |              |                   |                  |                                               |                                                  |
| Coca Cola Co.                     | Baltimore, Md.             |                      | 1949                      | 160                   | 338                           | 1       | 16                            | BW            | O       |                  |            |              |                   |                  |                                               |                                                  |
| Concord Steam Corp.               | Concord, N. H.             |                      | 1-50                      | 160                   | Sat                           | 1       | 25                            | RS            | O       |                  |            |              |                   |                  | 60                                            |                                                  |
| Corps of Engineers                | Albuquerque, N. M.         | Black & Veatch       | 1949                      | 160                   | 338                           | 2       | 33                            | BW            | O,G     |                  |            |              |                   |                  |                                               |                                                  |
| Cuyahoga Soap Co.                 | Cleveland, Ohio            |                      | 1950                      | 160                   | 338                           | 1       | 9                             | BW            | UF      |                  |            |              |                   |                  |                                               |                                                  |
| Davidson College                  | Davidson, N. C.            | Wm. Wallace II.      | 1950                      | 160                   | Sat                           | 1       | 20.8                          | CE            | UF      |                  |            |              |                   |                  |                                               |                                                  |
| Denver Sewer Pipe & Clay Co.      | Denver, Colo.              |                      | 160                       | 358                   | 1                             | 27      | BW                            | SS            |         |                  |            |              |                   |                  |                                               |                                                  |
| M. H. Detrick Co.                 | Aurora, Ill.               |                      | 1949                      | 160                   | 353                           | 1       | 15                            | BW            | O,G     |                  |            |              |                   |                  |                                               |                                                  |
| Diamond Pwr. Specialty Co.        | Lancaster, Ohio            | Austin Co.           | 1950                      | 160                   | 338                           | 2       | 6                             | BW            | UF      |                  |            |              |                   |                  | 12                                            | 0                                                |
| Doctors' Hospital                 | New York, N. Y.            |                      | 1949                      | 160                   | 338                           | 2       | 17                            | BW            | O       |                  |            |              |                   |                  | 66                                            |                                                  |
| Durham High School                | Durham, N. C.              |                      | 1950                      | 160                   | 353                           | 1       | 16                            | BW            | UF      |                  |            |              |                   |                  |                                               |                                                  |
| Euclid Road Machinery Co.         | Euclid, Ohio               | Mayer & Valentine    | 1950                      | 160                   | Sat                           | 2       | 20                            | EC            | UF      |                  |            |              |                   |                  | 40                                            |                                                  |
| Export Leaf Tobacco Co.           | Richmond, Va.              |                      | 1948                      | 160                   | Sat                           | 1       | 36                            | EC            | O       |                  |            |              |                   |                  | 90                                            |                                                  |
| Export Leaf Tobacco Co.           | Wilson, N. C.              |                      | 1950                      | 160                   | Sat                           | 2       | 14                            | EC            | O       |                  |            |              |                   |                  |                                               |                                                  |
| Warren Featherbone Co.            | Three Oaks, Mich.          |                      | 1949                      | 160                   | 353                           | 1       | 13                            | BW            | UF      |                  |            |              |                   |                  |                                               |                                                  |
| Forest Products Treating Co.      | Dallas, Ore.               |                      | 1949                      | 160                   | Sat                           | 2       | 16                            | EC            | SS      |                  |            |              |                   |                  | 32                                            |                                                  |
| Gallo Winery                      | Modesto, Calif.            | G. E. Rahm           | 9-50                      | 160                   | Sat                           | 1       | 26                            | Bi            | O,G     |                  |            |              |                   |                  |                                               |                                                  |
| General Electric Co.              | Bridgeville, Pa.           |                      | 1949                      | 160                   | 338                           | 1       | 12                            | BW            | UF      |                  |            |              |                   |                  | 20                                            |                                                  |
| General Electric Co.              | Circleville, Ohio          |                      | 1949                      | 160                   | Sat                           | 2       | 25                            | EC            | UF      |                  |            |              |                   |                  | 50                                            |                                                  |
| Glen Raven Cotton Mills           | Glen Raven, N. C.          |                      | 1949                      | 160                   | Sat                           | 1       | 20                            | EC            | O       |                  |            |              |                   |                  |                                               |                                                  |
| Goodjohn Sash & Door Co.          | Leavenworth, Kan.          |                      | 1949                      | 160                   | 353                           | 1       | 10                            | BW            | WW      |                  |            |              |                   |                  | 10                                            |                                                  |
| Greenwood Mills                   | Greenwood, S. C.           | McPherson & Co.      | 1950                      | 160                   | 344                           | 2       | 10                            | BW            | UF      |                  |            |              |                   |                  |                                               |                                                  |
| Grinnell Corp.                    | Providence, R. I.          |                      | 1949                      | 160                   | 312                           | 1       | 20                            | BW            | O       |                  |            |              |                   |                  |                                               |                                                  |
| A. Gross & Co.                    | Newark, N. J.              |                      | 1949                      | 160                   | Sat                           | 1       | 35                            | RS            | SS      |                  |            |              |                   |                  | 75                                            |                                                  |
| Hamilton Mfg. Co.                 | Columbus, Ind.             |                      | 1950                      | 160                   |                               | 1       | 24                            | Vo            | TG      |                  |            |              |                   |                  |                                               |                                                  |
| Marding Carpers, Ltd.             | Brantford, Ont.            |                      | 10-50                     | 160                   | 125                           | 1       | 15                            | FW            | UF      |                  |            |              |                   |                  | 30                                            |                                                  |
| Houdaille-Hershey Corp.           | Decatur, Ill.              |                      | 1949                      | 160                   | 338                           | 2       | 15                            | BW            | O,G     |                  |            |              |                   |                  | 56                                            |                                                  |
| Hovars Beverage Corp.             | Buffalo, N. Y.             |                      | 3-50                      | 160                   | Sat                           | 2       | 21                            | UI            | SS      |                  |            |              |                   |                  | 42                                            |                                                  |
| Ithaca Gun Co., Inc.              | Ithaca, N. Y.              |                      | 1950                      | 160                   | 320                           | 1       | 10                            | RW            | TG      |                  |            |              |                   |                  |                                               |                                                  |
| Kraft Foods, Inc.                 | Kendallville, Ind.         |                      | 1949                      | 160                   | Sat                           | 2       | 16                            | EC            | C       |                  |            |              |                   |                  | 32                                            |                                                  |
| Lancaster General Hospital        | Lancaster, Pa.             |                      | 1949                      | 160                   | Sat                           | 2       | 16                            | EC            | UF      |                  |            |              |                   |                  |                                               |                                                  |
| Land O'Lakes Creamery             | Marshfield, Wis.           |                      | 1949                      | 160                   | Sat                           | 2       | 20                            | EC            | SS      |                  |            |              |                   |                  | 40                                            |                                                  |
| Land O'Lakes Creamery             | Whiteland, Wis.            |                      | 1949                      | 160                   | Sat                           | 3       | 50                            | EC            | SS      |                  |            |              |                   |                  | 22                                            |                                                  |
| Lehigh Valley Farmers Co-op       | Allentown, Pa.             |                      | 1948                      | 160                   | 350                           | 2       | 11                            | UI            | TG      |                  |            |              |                   |                  |                                               |                                                  |
| Libby-McNeill-Libby               | Grilev, Calif.             |                      | 1949                      | 160                   | Sat                           | 1       | 32                            | EC            | O       |                  |            |              |                   |                  |                                               |                                                  |

AC - Allis-Chalmers Mfg Co  
An - Anthracite  
Bi - Bigelow  
BL - Black liquor  
BW - Babcock & Wilcox Co

C - Coal, bituminous  
CB - Cleaver-Brooks Co  
CE - Combustion Engineering  
Superheater Inc  
CV - Canadian Vickers Ltd

D - Damper  
DL - DeLaval Steam Turbine Co  
EC - Erie City Iron Works  
EL - Elliott Co  
EM - Edge Moor Iron Works Inc

FF - Foster Wheeler Corp  
G - Gas  
GE - General Electric Co  
HF - Hoggard Fuel  
IB - International Boiler Works

JI - John Inglis Co Ltd  
JL - James Leffel & Co  
Ke - E Keeler  
KB - Kewanee Boiler Corp  
WI - Murray Iron Works Co

# Institutional Power Plants: Below 200 Psi

Compiled by J C McCabe, Associate Editor

| Company                               | Location                | Consulting Engineers           | First operation, new units | Nominal pressure, psi | Nominal steam temperature, F | BOILERS |                                |              | Firing | TURBINES          |            |              |                    |                  | Total boiler capacity incl new units, 1000 lb | Total generator capacity incl new units, 1000 kw |
|---------------------------------------|-------------------------|--------------------------------|----------------------------|-----------------------|------------------------------|---------|--------------------------------|--------------|--------|-------------------|------------|--------------|--------------------|------------------|-----------------------------------------------|--------------------------------------------------|
|                                       |                         |                                |                            |                       |                              | Number  | Capacity, each, 1000 lb per hr | Manufacturer |        | Capacity, 1000 kw | Speed, rpm | Manufacturer | Backpressure, psia | No of bleed pits |                                               |                                                  |
| Libbey-McNeil-Libbey                  | Sunnyvale, Calif.       |                                | 1948                       | 160                   | Sat                          | 1       | 8                              | EC           |        |                   |            |              |                    |                  | 59.7                                          |                                                  |
| Liberty Hosiery Mills, Inc.           | Gibsonville, N. C.      |                                | 1949                       | 160                   | Sat                          | 1       | 19                             | EC           |        |                   |            |              |                    |                  | 10                                            |                                                  |
| Liebherr Breweries, Inc.              | Brooklyn, N. Y.         |                                | 1949                       | 160                   | 450                          | 1       | 50                             | EC           | UF     |                   |            |              |                    |                  | 120                                           |                                                  |
| Lincoln Electric Co.                  | Euclid, Ohio            |                                | 1950                       | 160                   | Sat                          | 2       | 36                             | EC           | SS     |                   |            |              |                    |                  | 45                                            |                                                  |
| Locke Insulator Corp.                 | Baltimore, Md.          |                                | 1949                       | 160                   | 353                          | 1       | 25                             | BW           | O      |                   |            |              |                    |                  | 26                                            |                                                  |
| Loyola Univ.                          | Chicago, Ill.           |                                | 1949                       | 160                   | 338                          | 1       | 26                             | BW           | SS     |                   |            |              |                    |                  | 36                                            |                                                  |
| Lucky Lager Brewing Co.               | Azuza, Calif.           |                                | 1950                       | 160                   | 353                          | 2       | 18                             | BW           | O      |                   |            |              |                    |                  | 28                                            |                                                  |
| Manning, Maxwell & Moore              | Stratford, Conn.        |                                | 1949                       | 160                   | 358                          | 1       | 16                             | BW           | O      |                   |            |              |                    |                  | 27                                            |                                                  |
| Marymount Hospital                    | Garfield Heights, Ohio  |                                | 1949                       | 160                   | 353                          | 2       | 13.5                           | BW           | O      |                   |            |              |                    |                  | 62                                            |                                                  |
| McLouth Steel Co.                     | Trenton, Mich.          |                                | 1949                       | 160                   | 353                          | 2       | 31                             | BW           | O      |                   |            |              |                    |                  | 34.6                                          |                                                  |
| Memorial Hospital                     | Houston, Texas          |                                | 1950                       | 160                   | Sat                          | 2       | 17.3                           | CE           | G      |                   |            |              |                    |                  | 38                                            |                                                  |
| Mills College                         | Oakland, Calif.         | Hudson & Grady                 | 1950                       | 160                   | 338                          | 1       | 25                             | BW           | O, G   |                   |            |              |                    |                  | 55                                            |                                                  |
| Mohawk Paper Mills                    | Cohoes, N. Y.           |                                | 1949                       | 160                   | Sat                          | 1       | 25                             | EC           | UF     |                   |            |              |                    |                  | 50                                            |                                                  |
| Monarch Laundry                       | Chicago, Ill.           | E. Casson                      | 1949                       | 160                   | Sat                          | 1       | 30                             | CE           | SS     |                   |            |              |                    |                  | 20                                            |                                                  |
| Mt. St. Mary's Hospital               | Niagara Falls, N. Y.    | J. Fruchbaum                   | 1949                       | 160                   | Sat                          | 2       | 20                             | EC           | UF     |                   |            |              |                    |                  | 36                                            |                                                  |
| Mt. Sinai Hospital                    | Minneapolis, Minn.      |                                | 1950                       | 160                   | Sat                          | 2       | 20                             | RS           | C, G   |                   |            |              |                    |                  | 25                                            |                                                  |
| Victor Managhan Co.                   | Greenville, S. C.       | J. P. Stevens & Co.            | 1949                       | 160                   | 353                          | 2       | 18                             | BW           | SS     |                   |            |              |                    |                  | 30                                            |                                                  |
| Moore Bath Hotel                      | Waukesha, Wis.          |                                | 1950                       | 160                   | 344                          | 1       | 13                             | BW           | O      |                   |            |              |                    |                  | 67                                            |                                                  |
| Niles Glass Works                     | Niles, Ohio             |                                | 1949                       | 160                   | 353                          | 1       | 36                             | BW           | UF     |                   |            |              |                    |                  | 27                                            |                                                  |
| North Carolina College                | Durham, N. C.           |                                | 1950                       | 160                   | Sat                          | 2       | 30                             | EC           | UF     |                   |            |              |                    |                  | 78.5                                          |                                                  |
| North Texas State College             | Denton, Texas           | Yandell, Cowan, Love Engr. Co. | 10-49                      | 160                   | Sat                          | 2       | 9                              | Vo           | G      |                   |            |              |                    |                  | 40                                            |                                                  |
| Norwalk State Hospital                | Norwalk, Calif.         |                                | 1949                       | 160                   | Sat                          | 1       | 33                             | EC           | O      |                   |            |              |                    |                  | 11                                            |                                                  |
| Oakland County Service Ctr.           | Pontiac, Mich.          | Hyde & Bobbio                  |                            | 160                   | Sat                          | 3       | 22                             | EC           | O      |                   |            |              |                    |                  | 40                                            |                                                  |
| Ohio Rubber Co.                       | Long Beach, Calif.      |                                | 4-50                       | 160                   | Sat                          | 1       | 20                             | EC           | O, G   |                   |            |              |                    |                  | 420                                           |                                                  |
| Oregon State Hospital                 | Salem, Ore.             | Thos. Taylor                   | 1950                       | 160                   | 353                          | 3       | 26                             | BW           | O, HF  |                   |            |              |                    |                  | 40                                            |                                                  |
| Pacific Colony State Hospital         | Spadra, Calif.          |                                |                            | 160                   | 320                          | 1       | 20                             | UI           | C, HF  |                   |            |              |                    |                  | 30                                            |                                                  |
| Pacific Lumber Agency                 | Sumner, Wash.           |                                | 1949                       | 160                   | Sat                          | 1       | 6                              | EC           | HF     |                   |            |              |                    |                  | 40                                            |                                                  |
| Pacific States Cast Iron Pipe Co.     | Provo, Utah             |                                | 1949                       | 160                   | Sat                          | 2       | 10                             | EC           | O, G   |                   |            |              |                    |                  | 40                                            |                                                  |
| Peralta Hospital                      | Oakland, Calif.         | Garthorne, Buonaccorsi, Murry  | 1950                       | 160                   | Sat                          | 2       | 14                             | EC           | O, G   |                   |            |              |                    |                  | 40                                            |                                                  |
| Pesco Products Co.                    | Bedford, Ohio           |                                | 1950                       | 160                   | Sat                          | 2       | 40                             | EC           | SS     |                   |            |              |                    |                  | 40                                            |                                                  |
| Peter Paul Inc.                       | Newark, Conn.           |                                | 11-50                      | 160                   | Sat                          | 2       | 9                              | B            | O      |                   |            |              |                    |                  | 420                                           |                                                  |
| Pilgrim State Hospital                | Brentwood, N. Y.        |                                | 1949                       | 160                   | 370                          | ...     | 70                             | UI           | UF     | 2.5               | 3600       | Wo           | 5                  |                  | 40                                            |                                                  |
| Polyclinic Hospital                   | Cleveland, Ohio         |                                | 1949                       | 160                   | Sat                          | 2       | 8                              | EC           | UF     |                   |            |              |                    |                  | 48                                            |                                                  |
| Providence Memorial Hospital          | El Paso, Texas          |                                | 1950                       | 160                   | ...                          | 2       | 10                             | Vo           | C, G   |                   |            |              |                    |                  | 48                                            |                                                  |
| Quaker Maid Co.                       | Bloomdale, Ohio         |                                | 1949                       | 160                   | Sat                          | 1       | 27                             | EC           | SS     |                   |            |              |                    |                  | 48                                            |                                                  |
| Revere Copper & Brass                 | Baltimore, Md.          |                                | 1949                       | 160                   | 353                          | 2       | 15                             | BW           | O      |                   |            |              |                    |                  | 48                                            |                                                  |
| Revere Copper & Brass                 | Rome, N. Y.             |                                | 1-50                       | 160                   | 353                          | 1       | 38                             | WB           | SS     |                   |            |              |                    |                  | 48                                            |                                                  |
| Rich Ladder Mfg. Co.                  | Cincinnati, Ohio        |                                | 1949                       | 160                   | 338                          | 2       | 10                             | BW           | O      |                   |            |              |                    |                  | 48                                            |                                                  |
| Rockwell Mfg. Co.                     | Freeport, Ill.          |                                | 1949                       | 160                   | 344                          | 2       | 10                             | BW           | SS     |                   |            |              |                    |                  | 48                                            |                                                  |
| Rosedale Knitting Co.                 | Reading, Pa.            | Wertz Engrg                    | 1948                       | 160                   | 350                          | 2       | 18                             | EC           | O      |                   |            |              |                    |                  | 48                                            |                                                  |
| St. Francis Convent                   | Mishawaka, Ind.         |                                | 1950                       | 160                   | 338                          | 2       | 17.5                           | BW           | C      |                   |            |              |                    |                  | 48                                            |                                                  |
| St. John's Hospital                   | Brooklyn, N. Y.         | Eade, Freund & Campbell        | 1949                       | 160                   | Sat                          | 1       | 14                             | EC           | TG     |                   |            |              |                    |                  | 48                                            |                                                  |
| St. Joseph Hospital                   | Memphis, Tenn.          | T. J. O'Brien                  | 1949                       | 160                   | 344                          | 2       | 15                             | BW           | C      |                   |            |              |                    |                  | 48                                            |                                                  |
| St. Vincent's Hospital                | Birmingham, Ala.        | J. A. Evans                    | 1950                       | 160                   | Sat                          | 2       | 8                              | EC           | O, G   |                   |            |              |                    |                  | 48                                            |                                                  |
| San Bernardino County Hospital        | San Bernardino, Calif.  | Stackley & Bamford             | 1949                       | 160                   | 344                          | 3       | 15                             | BW           | O, G   |                   |            |              |                    |                  | 48                                            |                                                  |
| San Jacinto Grannace                  | Houston, Texas          |                                | 1949                       | 160                   | Sat                          | 2       | 20                             | EC           | G      |                   |            |              |                    |                  | 48                                            |                                                  |
| San Lorenzo Nurseries                 | Los Angeles, Calif.     |                                | 1949                       | 160                   | Sat                          | 1       | 30                             | EC           | O      |                   |            |              |                    |                  | 48                                            |                                                  |
| Seelbach Hotel                        | Louisville, Ky.         |                                | 1950                       | 160                   | ...                          | 1       | 30                             | Vo           | TG     |                   |            |              |                    |                  | 48                                            |                                                  |
| Self Memorial Hospital                | Greenwood, S. C.        |                                | 1950                       | 160                   | 344                          | 2       | 10                             | BW           | UF     |                   |            |              |                    |                  | 48                                            |                                                  |
| Shaw Univ.                            | Raleigh, N. C.          |                                | 1949                       | 160                   | Sat                          | 2       | 12                             | EC           | UF     |                   |            |              |                    |                  | 48                                            |                                                  |
| T. S. Simms & Co., Ltd.               | St. John, New Brunswick |                                | 10-50                      | 160                   | Sat                          | 1       | 11.5                           | FW           | SS     |                   |            |              |                    |                  | 48                                            |                                                  |
| Southern Baptist Theological Seminary | Louisville, Ky.         |                                | 1950                       | 160                   | ...                          | 1       | 15                             | Vo           | UF     |                   |            |              |                    |                  | 48                                            |                                                  |
| Spalding Laundry Dry Cleaning         | Louisville, Ky.         |                                | 1948                       | 160                   | 366                          | 1       | 28.5                           | BW           | SS     | 0.3               | 225        | SE           |                    |                  | 28.5                                          | 0.3                                              |
| Spartan Mills                         | Spartanburg, S. C.      |                                | 1949                       | 160                   | 353                          | 2       | 13.8                           | BW           | UF     |                   |            |              |                    |                  | 48                                            |                                                  |
| Stanford Univ.                        | Stanford, Calif.        | G. E. Rahm                     | 1949                       | 160                   | Sat                          | 1       | 36                             | B            | C, G   |                   |            |              |                    |                  | 48                                            |                                                  |
| Texas Prison System                   | Huntsville, Texas       |                                | 1950                       | 160                   | ...                          | 2       | 20                             | Vo           | C, G   |                   |            |              |                    |                  | 48                                            |                                                  |
| Tutweiler Hotel                       | Birmingham, Ala.        |                                | 1948                       | 160                   | ...                          | 1       | 5.2                            | UI           | SS     |                   |            |              |                    |                  | 48                                            |                                                  |
| U. S. Atomic Energy Comm.             | Albuquerque, N. M.      | Black & Veatch                 | 1950                       | 160                   | 350                          | 4       | 60                             | UI           | O, G   |                   |            |              |                    |                  | 48                                            |                                                  |
| U. S. Veterans Admin                  | Altoona, Pa.            |                                | 1949                       | 160                   | 353                          | 3       | 13.6                           | BW           | C      |                   |            |              |                    |                  | 48                                            |                                                  |
| U. S. Veterans Admin                  | Fort Wayne, Ind.        |                                | 1949                       | 160                   | Sat                          | 3       | 27                             | EC           | O      |                   |            |              |                    |                  | 48                                            |                                                  |
| U. S. Veterans Admin                  | Hot Springs, S. D.      |                                | 5-50                       | 160                   | 338                          | 1       | 25                             | WB           | SS     |                   |            |              |                    |                  | 48                                            |                                                  |
| U. S. Veterans Admin                  | Iowa City, Ia.          |                                | 1950                       | 160                   | Sat                          | 3       | 16                             | EC           | SS     |                   |            |              |                    |                  | 48                                            |                                                  |
| U. S. Veterans Admin                  | Lexington, Ky.          |                                | 1950                       | 160                   | ...                          | 3       | 26.4                           | Vo           | SS     |                   |            |              |                    |                  | 48                                            |                                                  |
| U. S. Veterans Admin                  | Little Rock, Ark.       |                                | 1950                       | 160                   | Sat                          | 3       | 6.9                            | EC           | G      |                   |            |              |                    |                  | 48                                            |                                                  |
| U. S. Veterans Admin                  | Manchester, N. H.       |                                | 1949                       | 160                   | Sat                          | 3       | 12                             | EC           | O      |                   |            |              |                    |                  | 48                                            |                                                  |
| U. S. Veterans Admin                  | Omaha, Neb.             |                                | 1950                       | 160                   | Sat                          | 3       | 6.9                            | EC           | SS     |                   |            |              |                    |                  | 48                                            |                                                  |
| U. S. Veterans Admin                  | Phoenix, Ariz.          |                                | 1950                       | 160                   | Sat                          | 3       | 10                             | EC           | C      |                   |            |              |                    |                  | 48                                            |                                                  |
| U. S. Veterans Admin                  | Poplar Bluff, Mo.       |                                | 1950                       | 160                   | Sat                          | 1       | 8                              | EC           | C, G   |                   |            |              |                    |                  | 48                                            |                                                  |
| U. S. Veterans Admin                  | Portland, Ore.          |                                | 1950                       | 160                   | Sat                          | 3       | 16                             | EC           | C      |                   |            |              |                    |                  | 48                                            |                                                  |
| U. S. Veterans Admin                  | St. Cloud, Minn.        |                                | 1-50                       | 160                   | 337                          | 2       | 25                             | WB           | SS     |                   |            |              |                    |                  | 48                                            |                                                  |
| U. S. Veterans Admin                  | Spokane, Wash.          |                                | 1949                       | 160                   | 338                          | 3       | 11                             | BW           | C      |                   |            |              |                    |                  | 48                                            |                                                  |
| U. S. Veterans Admin                  | Walla Walla, Wash.      |                                | 1950                       | 160                   | Sat                          | 3       | 12                             | EC           | O      |                   |            |              |                    |                  | 48                                            |                                                  |
| Univ. of Alabama                      | University, Alabama     |                                | 1949                       | 160                   | Sat                          | 1       | 27.5                           | Vo           | UF     |                   |            |              |                    |                  | 48                                            |                                                  |
| Univ. of Iowa                         | Pocatello, Idaho        | Earl Gritton                   | 1948                       | 160                   | 353                          | 2       | 33                             | BW           | P, C   |                   |            |              |                    |                  | 48                                            |                                                  |
| Univ. of Maryland                     | Princess Anne, Md.      | James Posey                    | 1950                       | 160                   | Sat                          | 2       | 13.5                           | EC           | UF     |                   |            |              |                    |                  | 48                                            |                                                  |
| Utah Canning Co.                      | Opden, Utah             |                                | 1950                       | 160                   | 353                          | 2       | 12                             | BW           | G      |                   |            |              |                    |                  | 48                                            |                                                  |
| Washington State Pen.                 | Walla Walla, Wash.      | C. C. Moore                    | 1949                       | 160                   | 347                          | 1       | 18                             | BW           | UF     |                   |            |              |                    |                  | 48                                            |                                                  |
| Wilberforce College                   | Wilberforce, Ohio       | R. S. Curl & Assoc             | 10-50                      | 160                   | 350                          | 1       | 30                             | UI           | SS     |                   |            |              |                    |                  | 48                                            |                                                  |
| 150 TO 159 PSI                        |                         |                                |                            |                       |                              |         |                                |              |        |                   |            |              |                    |                  |                                               |                                                  |
| Evenson Estate                        | Boston, Mass.           |                                | 11-49                      | 155                   | Sat                          | 1       | 15                             | B            | O      |                   |            |              |                    |                  |                                               |                                                  |
| Abbott Dairies                        | Philadelphia, Pa.       |                                | 8-50                       | 150                   | Sat                          | 2       | 8.5                            | B            | O      |                   |            |              |                    |                  |                                               |                                                  |
| Alfred Mills, Inc.                    | Farmington, Va.         |                                | 1948                       | 150                   | 360                          | 1       | 5.0                            | CB           | C      |                   |            |              |                    |                  |                                               |                                                  |

|                            |                                |                            |                                 |                                                                 |
|----------------------------|--------------------------------|----------------------------|---------------------------------|-----------------------------------------------------------------|
| O - Oil                    | SE - Skinner Engine Co         | UF - Underfeed stoker      | W - Wood                        | W - Worthington Pump & Machy Corp, Moore Steam Turbine Division |
| P - Pulverized-fuel firing | SS - Sprockler stoker          | UI - Union Iron Works      | WH - Waste Heat                 |                                                                 |
| R - Regulator              | T - Turbine drive              | V - Valve control          | WB - Wm Bras Boiler & Mfg Co    |                                                                 |
| RS - Riley Stoker Corp     | TG - Traveling-grate stoker    | VK - Vickers Keeler Co     | WE - Westinghouse Electric Corp |                                                                 |
| S - Speed control          | Ti - Titusville Iron Works Div | Vo - Henry Vogt Machine Co | Wi - Wickes Boiler Co           |                                                                 |
|                            |                                |                            |                                 | (150) - Stoker grate area, sq ft                                |
|                            |                                |                            |                                 | (1) - Gas-engine driven                                         |

# Industrials and Institutionals: Below 200 Psi

Compiled by J C McCabe, Associate Editor

| Company                            | Location                | Consulting Engineers | First operation new units | Nominal pressure, psi | Nominal steam temperature, F | BOILERS |                                |               | Firing  | TURBINES         |            |              |                  |                  | Total boiler capacity incl new units 1000 lb fuel per unit 1000 hr | Total generator capacity incl new units 1000 kw |
|------------------------------------|-------------------------|----------------------|---------------------------|-----------------------|------------------------------|---------|--------------------------------|---------------|---------|------------------|------------|--------------|------------------|------------------|--------------------------------------------------------------------|-------------------------------------------------|
|                                    |                         |                      |                           |                       |                              | Number  | Capacity, each, 1000 lb per hr | Manufacturing |         | Capacity 1000 kw | Speed, rpm | Manufacturer | Backpressure psi | No. of bleed pis |                                                                    |                                                 |
| ✓ Balentine Packing Co.            | Greenville, S. C.       |                      | 1950                      | 150                   |                              | 2       | 5.8                            | CS            | O       |                  |            |              |                  |                  |                                                                    |                                                 |
| Ballard Oil Co.                    | Wethersfield, Conn.     |                      | 2-50                      | 150                   | Sat                          | 1       | 5.0                            | Bi            | O       |                  |            |              |                  |                  |                                                                    |                                                 |
| W. B. Beach                        | Petersburg, Va.         |                      | 9-50                      | 150                   | Sat                          | 1       | 9.5                            | Bi            | O       |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ Breyer Ice Cream Co.             | Long Island City, N. Y. |                      | 1949                      | 150                   |                              | 1       | 8.5                            | CB            | O       |                  |            |              |                  |                  |                                                                    |                                                 |
| Bridgeport Industrial Serv.        | Shelton, Conn.          |                      | 10-50                     | 150                   | Sat                          | 1       | 5.0                            | Bi            | O       |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ Brown & Williamson Tobacco       | Lexington, Ky.          |                      | 12-48                     | 150                   | 36                           | 1       | 9.0                            | CB            | O, G    |                  |            |              |                  |                  |                                                                    |                                                 |
| Benrus Watch                       | Waterbury, Conn.        |                      | 7-49                      | 150                   | Sat                          | 2       | 7                              | Bi            | O       |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ Burney Bros. Bakery              | Chicago, Ill.           |                      | 1950                      | 150                   |                              | 5       | 5.8                            | CB            | O, G    |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ Canadian Car & Foundry Co.       | Montreal, Canada        |                      | 1949                      | 150                   | Sat                          | 1       | 40                             | FW            | SS      |                  |            |              |                  |                  | 94                                                                 |                                                 |
| Canadian Car & Foundry Co.         | Montreal, Canada        |                      | 1949                      | 150                   | Sat                          | 1       | 40                             | FW            | SS      |                  |            |              |                  |                  | 100                                                                |                                                 |
| Canadian Pacific Rwy.              | Winnipeg, Manitoba      |                      | 1950                      | 150                   | 466                          | 3       | 25                             | JI            | SS      |                  |            |              |                  |                  |                                                                    |                                                 |
| Capital Record, Inc.               | Los Angeles, Calif.     |                      | 1950                      | 150                   | 250                          | 1       | 6.9                            |               | O       |                  |            |              |                  |                  |                                                                    |                                                 |
| Carnation Co.                      | Sherbrooke, Que.        |                      | 1950                      | 150                   |                              | 1       | 36                             | CV            | C       |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ Chrysler Corp.                   | Detroit, Mich.          |                      |                           | 150                   |                              | 1       | 5                              | CB            | O       |                  |            |              |                  |                  |                                                                    |                                                 |
| Commercial Solvents Corp.          | Terre Haute, Ind.       |                      |                           | 150                   | Sat                          | 2       | 25                             | Wi            | O       |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ Congoleum-Nairn Co.              | Cedarhurst, Md.         |                      |                           | 150                   | 366                          | 3       | 35                             | RS            | SS      |                  |            |              |                  |                  | 135                                                                |                                                 |
| ✓ Crowley's Milk Co.               | Paterson, N. J.         |                      | 1948                      | 150                   |                              | 1       | 5.2                            | CB            | O       |                  |            |              |                  |                  |                                                                    |                                                 |
| Dept. of Justice                   | Kingston, Ontario       |                      | 1950                      | 150                   | 465                          | 1       | 21                             | JI            | UF      |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ Dickinson County Hosp.           | Iron Mountain, Mich.    |                      | 1950                      | 150                   |                              | 2       | 5.8                            | CB            | O       |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ Doernbecher Mfg. Co.             | Portland, Ore.          |                      |                           | 150                   | 358                          | 1       | 45                             | RS            | O, HF   | 0.5              | 3600       | AC           | 5                |                  | 100                                                                | 0.5                                             |
| ✓ Dolly Madison Dairies            | Eau Claire, Wis.        |                      | 1948                      | 150                   |                              | 1       | 5.2                            | CB            | O       |                  |            |              |                  |                  |                                                                    |                                                 |
| Elliot Hospital                    | Manchester, N. H.       | R. D. Kimball        | 11-49                     | 150                   | Sat                          | 3       | 6.0                            | Bi            | O       |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ Elmira Reformatory               | Elmira, N. Y.           |                      | 1949                      | 150                   | 366                          | 4       | 16                             | BW            | UF(96)  | 1.0              | 4500       | Wo           | 4                | 0                | 64                                                                 | 1.6                                             |
| ✓ Falstaff Brewing Corp.           | St. Louis, Mo.          |                      | 1949                      | 150                   | Sat                          | 1       | 48                             | BW            | TG(110) |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ Falls City Creamery Co.          | Falls City, Nebr.       |                      | 1948                      | 150                   |                              | 1       | 5.2                            | CB            | O       |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ Firkin Hospital                  | Neptune, N. J.          |                      | 11-49                     | 150                   | Sat                          | 1       | 7.5                            | Bi            | O       |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ Florida Tar & Creosote Corp.     | Tampa, Fla.             |                      | 1948                      | 150                   | 366                          | 1       | 4.3                            | CB            | O       |                  |            |              |                  |                  |                                                                    |                                                 |
| Ford Motor Co.                     | Cleveland, Ohio         | Fairbrother, Miehlis | 1951                      | 150                   | Sat                          | 3       | 60                             | Wi            | TG      |                  |            |              |                  |                  | 360                                                                | 0                                               |
| Ford Motor Co.                     | Cincinnati, Ohio        | Fairbrother, Miehlis | 1950                      | 150                   | Sat                          | 3       | 100                            | Wi            | TG      |                  |            |              |                  |                  | 75                                                                 | 0                                               |
| ✓ Gladding, McBean & Co.           | Glendale, Calif.        |                      | 1948                      | 150                   | Sat                          | 1       | 17                             | CB            | O, G    |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ Interlake Tissue Mills Co.       | Merritt, Ont.           |                      | 1949                      | 150                   | 416                          | 1       | 33                             | FW            |         |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ Joliet Arsenal                   | Joliet, Ill.            |                      | 1950                      | 150                   |                              | 2       | 5.8                            | CB            | O       |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ Keeler State Street Restaurant   | Albany, N. Y.           | A. E. Offner         | 1-51                      | 150                   | Sat                          | 2       | 4                              | Bi            | O       |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ Lane Star Brewing Co.            | San Antonio, Tex.       |                      | 1949                      | 150                   | Sat                          | 1       | 16                             | EC            | O, G    |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ Marlin Rockwell Corp.            | Plainville, Conn.       |                      | 8-50                      | 150                   | Sat                          | 1       | 14                             | Bi            | O       |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ H. McLachlan & Co.               | Danbury, Conn.          |                      | 11-49                     | 150                   | Sat                          | 1       | 7.5                            | Bi            | O       |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ Michigan Milk Producers          | Imlay City, Mich.       |                      | 5-50                      | 150                   | Sat                          | 2       | 12                             | Bi            | C       |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ Mohican Hotel                    | New London, Conn.       |                      | 8-49                      | 150                   | Sat                          | 1       | 4                              | Bi            | O       |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ Neo-Gravure Printing Co.         | Westhewen, N. J.        |                      | 1950                      | 150                   |                              | 3       | 8.7                            | CB            | O       |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ Northern Engraving & Mfg.        | La Crosse, Wis.         |                      | 1950                      | 150                   |                              | 4       | 5.8                            | CB            | O       |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ Notage Laundry                   | Brooklyn, N. Y.         |                      | 9-50                      | 150                   | Sat                          | 1       | 8.5                            | Bi            | O       |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ Perkins Institution              | Watertown, Mass.        | Hollis French        | 8-50                      | 150                   | Sat                          | 4       | 8.5                            | Bi            | O       |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ Power & Combustion Inc.          | Baltimore, Md.          |                      | 6-50                      | 150                   | Sat                          | 1       | 4                              | Bi            | O       |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ Reilly Tar & Chemical Co.        | Fairmont, W. Va.        | H. R. Horner         | 1949                      | 150                   | Sat                          | 1       | 17                             | CB            | O, G    |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ Ridgeview Farms Dairy            | Chicago, Ill.           |                      | 1949                      | 150                   | Sat                          | 1       | 6.9                            | CB            | O, G    |                  |            |              |                  |                  | 9                                                                  |                                                 |
| ✓ St. Joseph's Hospital            | St. Joseph, Mich.       |                      | 1950                      | 150                   |                              | 3       | 7                              | CB            | O       |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ St. Lawrence State Hosp.         | Ogdensburg, N. Y.       |                      | 9-51                      | 150                   | 365                          | 4       | 40                             | T             | SS      | 1.0              | 1200       | Wo           |                  |                  | 160                                                                | 1.0                                             |
| ✓ Scholtz Memorial Hospital        | Waterloo, Iowa          |                      | 1950                      | 150                   |                              | 2       | 7                              | CB            | O       |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ Stokely Foods, Inc.              | Indianapolis, Ind.      |                      | 1949                      | 150                   | Sat                          | 1       | 50                             | RS            | SS(126) |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ Swedish American Hospital        | Rockford, Ill.          |                      | 1950                      | 150                   |                              | 2       | 8.7                            | CB            | O       |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ Truett Hospital, Baylor Univ.    | Dallas, Texas           |                      | 1950                      | 150                   | Sat                          | 1       | 5                              | EC            | G       |                  |            |              |                  |                  |                                                                    |                                                 |
| United Shoe Machy. Corp.           | South Middletown, Mass. |                      | 9-50                      | 150                   | Sat                          | 1       | 11                             | Bi            | O       |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ United States Rubber Co.         | Manchester, N. H.       |                      | 1949                      | 150                   | 365                          | 2       | 2                              | CB            | O       |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ Van Raalte Co., Inc.             | Bryson City, N. C.      |                      |                           | 150                   | Sat                          | 1       | 8                              | EC            | C       |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ Verana Chemical Co.              | Newark, N. J.           |                      | 1950                      | 150                   | Sat                          | 2       | 5.8                            | CB            | O       |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ Winnebago State Hospital         | Winnebago, Wis.         | Gates, Moe & Weiss   | 11-50                     | 150                   | Sat                          | 3       | 12                             | UI            | UF      |                  |            |              |                  |                  |                                                                    |                                                 |
| R. L. Ziegler, Inc.                | Tuscaloosa, Ala.        |                      | 9-50                      | 150                   | Sat                          | 1       | 7.5                            | Bi            | O       |                  |            |              |                  |                  |                                                                    |                                                 |
| (149 PSI AND BELOW)                |                         |                      |                           |                       |                              |         |                                |               |         |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ Beatty Bros. Ltd.                | Fergus, Ont.            | Taylor Engrg.        | 12-49                     | 145                   | 355                          | 1       | 40                             | FW            | SS(129) |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ Van Raalte, Inc.                 | Athens, Tenn.           |                      |                           | 140                   | Sat                          | 1       | 5                              | CE            | SS(30)  |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ All Steel Equipment, Inc.        | Aurora, Ill.            |                      | 1949                      | 125                   |                              | 2       | 12                             | CB            | O, G    |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ Alloy Metal Sales, Ltd.          | Toronto, Ont.           |                      |                           | 125                   |                              | 1       | 4                              | JI            | UF      |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ American Can Co.                 | Chatham, Ont.           |                      | 11-50                     | 125                   | Sat                          | 2       | 20                             | JI            | O       |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ Canadian National Rwy.           | Harneyville, Ontario    |                      | 1950                      | 125                   | Sat                          | 2       | 9                              |               | SS      |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ Carol-May Finishing Co.          | Concord, N. C.          |                      | 1948                      | 125                   | Sat                          | 1       | 4.3                            | CB            | O       |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ Dayton State Hospital            | Dayton, Ohio            | Carl Lorimer         | 1950                      | 125                   | Sat                          | 1       | 17.5                           | UI            | UF      |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ Dept. of Public Wks.             | Smith Falls, Ont.       |                      | 1950                      | 125                   | Sat                          | 3       | 25                             | JI            | SS      |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ Haneoye Falls Cream Prod.        | Haneoye Falls, N. Y.    |                      |                           | 125                   | Sat                          | 1       | 6                              | CB            | O       |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ Johnson Steel & Wire Co.         | Rochester, Mass.        |                      | 1948                      | 125                   |                              | 1       | 5.2                            | CB            | O       |                  |            |              |                  |                  | 15                                                                 |                                                 |
| ✓ H. E. Koontz Creamery, Inc.      | Baltimore, Md.          | Lester Gardner       | 1948                      | 125                   |                              | 1       | 5                              | IB            | O       |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ Reliance Electric & Engrg Co.    | Ashabula, Ohio          |                      | 1948                      | 125                   | Sat                          | 1       | 10.5                           | CB            | O       |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ Southern Cotton Oil Co.          | Memphis, Tenn.          |                      |                           | 125                   | Sat                          | 3       | 33                             | CE            | G       |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ U. S. Veterans Admin.            | Rutland Heights, Mass.  |                      | 1948                      | 125                   |                              | 1       | 4.3                            | CB            | O       |                  |            |              |                  |                  | 26                                                                 |                                                 |
| ✓ Thomas Young Greenhouses         | Bound Brook, N. J.      | P. H. Copenheimer    | 1949                      | 125                   | Sat                          | 3       | 15                             |               | UF      |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ Slippery Rock State Tchrs. Coll. | Slippery Rock, Pa.      | Rust Engrg.          | 1951                      | 120                   | Sat                          | 2       | 20                             |               | UF      |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ Bridgeport Pipe & Engrg. Co.     | Bridgeport, Conn.       | Fletcher Thompson    | 11-50                     | 100                   | Sat                          | 4       | 6.5                            | Bi            | O       |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ Canadian Car & Foundry           | Montreal, Canada        |                      | 1-50                      | 100                   | Sat                          | 1       | 15                             | JI            | O       |                  |            |              |                  |                  | 18                                                                 |                                                 |
| ✓ Cravenette Co. of U.S.A.         | Hoboken, N. J.          |                      |                           | 100                   | 250                          | 1       | 16                             | CB            | O       |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ Cycleweid Cement Prod.           | Trenton, Mich.          | Giffels & Varlet     |                           | 100                   | 292                          | 2       | 10.5                           | CB            | O       |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ Douglas & Lamson Co.             | Detroit, Mich.          | C. S. Harrison       |                           | 100                   | Sat                          | 1       |                                |               |         |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ Hollinger Gold Mines             | Timmins, Ont.           |                      | 1949                      | 100                   | 388                          | 1       | 20                             | FW            | HF      |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ Reliance Electric & Engrg Co.    | Ashabula, Ohio          |                      | 1948                      | 100                   | Sat                          | 1       | 7                              | CB            | O       |                  |            |              |                  |                  |                                                                    |                                                 |
| ✓ Warren Petroleum Co.             | Wavvsille, Okla.        | Cresser Engrg.       | 10-49                     |                       |                              |         |                                |               |         | 2.0              | 327        | El           |                  |                  |                                                                    |                                                 |