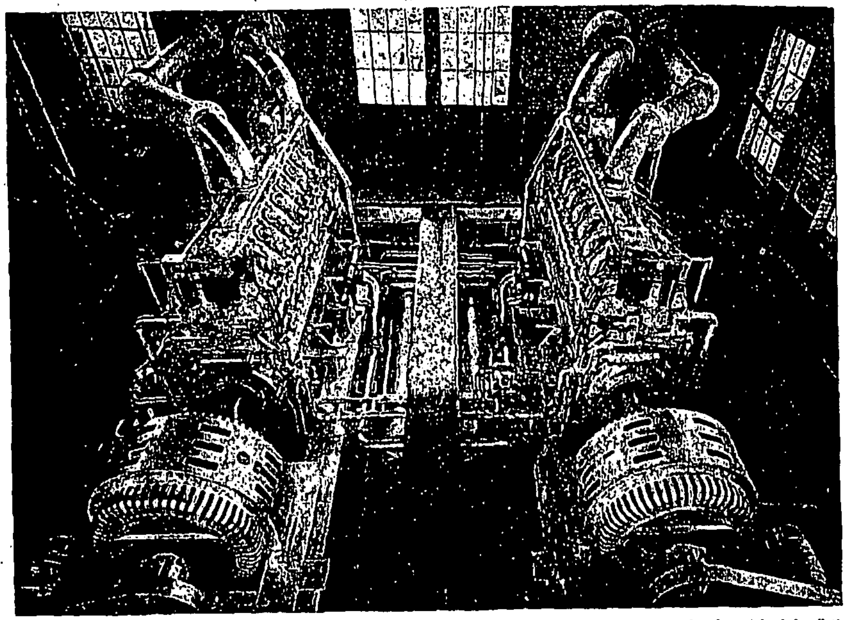


Grating removed to show piping below floor.

DIESEL ENGINE SETS . . . . . .

1600 H.P. General Motors, model 16-278-A, 16 cylinder Diesel Engine, bore 8¾", stroke 10½", R.P.M.—720—direct connected to—New 1250 K.V.A. Ideal Electric & Manufacturing Co Generator, 2400 volts, 3 phase, 60 cycle A.C. @ .8 p.f. Belted exciter—New 10 K.W. Ideal Elec. & Mfg. Co.

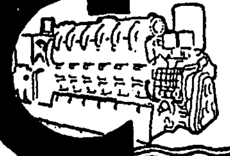
The illustration above shows an actual installation of two of the sets described, for a midwestern utility. This set, Cusac engineered from start to finish has proven completely satisfactory. These two sets, in operation now, can be seen by appointment. Similar installations can be made in the next six months from units now in our inventory.

AIR COMPRESSORS . . . . .

1—WORTHINGTON, 1898 c.f.m. actual at 125 p.s.i., 2 stage, cylinder size 26" x 16" x 18", direct connected to 400 H.P. synchronous Electric Machinery motor. Complete with starter, intercooler, aftercooler, air receiver, m.g. set and miscellaneous accessories. NEW. Immediate delivery.

1—WORTHINGTON, 2685 c.f.m. actual at 125 p.s.i., 2 stage, cylinder size 30" x 18½" x 21", direct connected to 600 HP synchronous Electric Machinery motor. Complete with starter, intercooler, aftercooler, air receiver, m.g. set and miscellaneous accessories. NEW. Immediate delivery.

"Cusac engineered", means a complete, competent, dependable engineering service—from purchase of equipment to final installation and approval. Our reputation is based on performance—not promises. Our installations carry a new machine guarantee backed with a performance bond.



F. L. CUSAC *and Associates Inc.*

DIESELS

Wabash 5860

BOARD of TRADE BLDG. — — CHICAGO

THESE UNITS CHECKED—RELIABLE—AVAILABLE NOW

TURBO GENERATORS

Non-Condensing

ITEM No. 932: 1500 KW, 480 volt, non-condensing turbo generator. ISP 185#, 500° F. T.T., 40# gauge back pressure. Built about 1930. Moore turbine, Form 3-T. Water rate: 1000 WK, 53#/KWH; 1500 KW, 48.1#/KWH; 2000 KW, 43.2#/KWH.
Generator GE. 1500 KW, .8 PF, 60/3/480 volt, direct connected 18½KW exciter; entire generator rewound 1945. Condition reported excellent.

ITEM No. 691: 1000 KW, 480 volt, non-condensing turbo generator. ISP 400# gauge, 700° F. T.T., 10# gauge back pressure, 60/3/480 volt. Built about 1934.
Westinghouse turbine single impulse wheel type. Turbine satisfactory for operation at 325 psig and up to 400 psig. Typical water rate: at 325 psig, 625° F. T.T., 16.7# absolute back pressure, and at full load 24.4#/KWH.
Generator recently rewound, complete with direct connected exciter. Condition reported excellent.

TURBO GENERATORS

Condensing Extraction

ITEM NO. 432: 500 KW turbo generator, extraction condensing. One 500 KW Moore-Allis Chalmers. ISP 150#, 480° T.T., 60/3/480 volt, surface condenser, 10/25# g. extraction.
Turbo Data: 750 HP Moore, S/N 1200, built 1928. Exciter 25 KW, 125 volt.
Condenser Data: Wheeler, S/N 4100, 2 pass, surface.

TURBO GENERATORS

Condensing

ITEM NO. 1194: *General Description:* 1000 KW, GE turbo generator, 60/3/480 volt, ISP 130#, surface condenser equipped, built about 1922.

ITEM NO. 809: 8000 KW Turbo Plant—Condensing.
Two 5030 KW GE, 60/3/2400 volt condensing turbo generators, ISP 300#, 100° SH, built 1917; turbines rebuilt 1935 (GE).
Turbo: S/N 12,300, 4-stage. Rebuilt, rebucketed, renozzled 1935. Generator stators rewound 1935.
Condenser: Will be supplied new or rebuilt—surface condensers, pumps, ejectors, etc.

ITEM NO. 808: 5000 KW Turbo Generator—Condensing.
General Description: 5000 KW, GE, 60/3/2300 volt, ISP 180#, 100° SH.
Condenser Data: Surface condenser, built 1943, with new air ejector.
History & Condition: Built about 1920. Completely rebuilt and overhauled.

ITEM NO. 837: One 1500 KW, GE 60/3/2300 volt turbo generator. ISP 325#, 480° T.T. with surface condenser.
History & Condition: Built 1923. Operated until March 1, 1948.

ITEM NO. 38: One 750 KW, GE, 150# ISP, 60/3/2300 volt, with surface condenser.
Turbo Data: S/N 27,300, Curtis, Form B, 3 stage.
Generator Data: S/N 2,008,800, Type ATB-3, Form T.
Condenser Data: C H Wheeler, 2100 sq. ft.
History & Condition: Installed 1923, continuous operation to 1925, *12,000 hours from 1925 to 1929, then standby to 1939.* Public Utility maintenance.

ITEM NO. 840-T: 600 KW, GE, Condensing Turbo Generator, 60/3/2400 volt, ISP 200#. Jet condenser equipped. Built about 1929. Turbine S/N 36,000. Excellent condition.

ITEM NO. 85: One 500 KW Westinghouse turbo generator, 60/3/2400 volt, 150# ISP, with surface condenser and auxiliaries. Built 1927—rebuilt 1938.
Condenser Data: Wemco, S/N 2700, 750 sq. ft., circulating and condensate pumps, motor driven, LeBlanc air ejector.

ITEM NO. 62: 300 KW Turbo Generator—Condensing.
300KW Wemco, 60/3/120/208 volt, ISP 150#, 27" vacuum, surface condenser and steam auxiliaries. Direct connected exciter.
Condenser Data: Surface type, size 800, with steam jet air ejector, motor driven condensate pump.
History & Condition: Built 1927. Late in 1941 entire set reconditioned by Westinghouse, including rewinding generator, renozzling turbine, balancing rotor. Supplied new bullgear, new oil pump for gears, new distribution panel. Unit never used since.

WATER TUBE BOILERS

ITEM NO. 899: *General Description:* One 250 HP, 200# Heine box header boiler with gas and oil burners, Diamond soot blowers, Enco steam atomizing oil burner, Coppus-Dennis Fanmix gas burner, 350 GPM boiler feed pump, and normal trim.

ITEM NO. 841: One 280 HP, 150# Murray box header longitudinal drum boiler, built about 1930.

ITEM NO. 1235: Two 332 HP, 160# B & W lowhead Stirling boilers, with complete controls and auxiliaries. Two Wemco single retort stokers, two Cash combustion controls, instrument panel with flow meters and draft gauges, two Copes feedwater regulators, one boiler fed pump. ASME and N. Y. Std. Excellent condition. Built 1937.

ITEM NO. 948: *General Description:* One 334 HP Vogt 4-drum boiler, 300#, 690° T. T., with puverizer and complete auxiliaries. Capacity 25/30,000#/hr., with rear water walls, Elesco superheater, Diamond soot blowers, complete trim, steel, etc. Installed 1939. Operated eight years.

ITEM NO. 801: One 20,000#/hr. (418HP) B & W integral furnace boiler; 425#, 750° T. T., pulverized coal fired, complete with forced draft burners, Clarage forced draft fan, Diamond soot blowers, Bailey flow meters and gauges. All trim. Built 1940. Laid up end of 1946.

ITEM NO. 891: *General Description:* One 484 HP, 235#, 100° SH, Springfeld sectional header boiler with chain grate stoker, Foster superheater, Diamond soot blowers. Built 1930. Also available—480 HP, 230#, 100° SH, Laskes-Adams boiler with stoker.

ITEM NO. 3: *General Description:* 750 HP, 230 psig Union Iron Works, 4-drum, bent tube boiler, built 1927. 7-retort Westinghouse stoker, forced draft fan, Copes feedwater regulator, Hagan controls, Bailey boiler meter, 150 ft. steel stack, spare tubes, grates, etc. ASME and *Pennsylvania* Std.

ITEM NO. 480: *General Description:* 1000 HP Springfield sectional header boiler, built 1928; 225# allowed, 100° superheat. Boiler complete with structural steel for drum support and standard accessories, fittings, and trim. Now dismantled and ready for immediate shipment.

FIRE TUBE BOILERS

ITEM NO. 972: Two 200 HP, 150#, Titusville, Type XL self contained Fire Tube boilers, gas fired, complete. Two Webster gas burners, Type N.O.E., one steel stack 4' D x 70' high, breeching and connections. ASME, National Board, and Hartford stampings. Built 1938. Used less than 8 years.

ITEM NO. 941: Ten Cleaver Brooks and Cyclotherm Package Boilers, 10 HP, 400#/hr., 100# working pressure, for #3 oil firing. Condensate units, complete spare parts kits. Motors operate on *single phase, 60 cycle, 110/220 volt. Built 1944. Some never used,* all checked, overhauled, tested.

STOKERS and PULVERIZERS

ITEM NO. 811: Three Type E Single Retort Stokers. Single retort underfeed stokers, steam drive, nominal capacity 400 BHP each. Combustion Engineering Co., Type E.H.P., Class 10, Size 10'10", installed with 415 HP bent tube boilers. Furnace width 10'6" and 8'6" as set from floor to C. L. of bottom drum. Purchased and installed June 1943, out of service November 1944. Equipment reported complete and in excellent condition.

ITEM NO. 973: Westinghouse Single Retort Stoker (1943). Moving grate, side dump, underfeed stoker with steam drive, blower and controls. For use with 350 HP B & W type H boiler. Will develop 200% of boiler rating (24,000# steam per hour, 125# pressure) continuous and 250% for 24 hours. Allows 78.5% boiler efficiency at 100% of boiler rating. Clarage centrifugal blower with motor drive. Brooke combustion controls including pressure and furnace draft regulators. Built 1943. Used only 3 months. Controls still in original crate. Dimensions required—furnace width 10'0", depth 8'1¼". Stoker front to face of bridge wall 9'7½".

ITEM NO. 832: Two B & W, Type E Pulverisers. Direct fired pulverisers, 4250# coal per hour each. New 1942. Rated 4250#/hr. each bituminous coal based on 78% thru #200 U.S. Sieve, 98% plus thru #50 U.S. Sieve. Blower fan, V-belt drive, feeder motors (60/3/440 volt), starters, Bailey feeder controllers, piping, airducts, temperature recorders, draft gauges, etc. Installed 1942. Operated 6 months. Equivalent steam capacity (estimated) 43,000#/hr. each.

TRANSFORMERS

60 Cycle Power and Distribution

ITEM NO. 828: *General Description:* One 2500 KVA, 60 cycle, 3 phase, 2400 to 480 volts, OISC, Outdoor.
Primary: 2400 volts with 2-2½% taps above and 2 below normal.
Secondary: 480 volts.
Designed and built 1946 to AIEE specs, using tank and frame of older unit. Delivered 1947 with standard NEMA guarantee (now expired). Never in service.

ITEM NO. 1150: *General Description:* Three 200 KVA, GE, 60 cycle, 3 phase, 4160 to 240/480 volts, Built 1942.
General Data: S/N 5,812,000, Type H.

TRANSFORMERS

60 Cycle Furnace

ITEM NO. 344 & 5: Two 4000 KVA Furnace Transformers (1943). Pennsylvania transformers, 22 KV primary, 93-328 volts secondary. Reactance 5% to 35%. Built 1942 and 1943. Indoor transformers. 4000 KVA, 40° C, oil immersed water cooled, motor operated primary tap changer. Separate steel core reactor.
History & Condition: #1 new 1942, under load 1 year. Excellent condition. #2 new 1943, never energised. Excellent condition.

ITEM NO. 873: 1000 KVA Furnace Transformer—3 Phase. One 1000 KVA Kuhlman, 60 cycle, 3 phase, 7200 to 218/84 volts with reactor.
History & Condition: About 14 years old. Removed from service during war to make room for larger unit.

ITEM NO. 350: Unused 200 KVA Furnace Transformer—3 phase. One 200 KVA Wemco, 60 cycle, 3 phase, 230 to 120/60 volts with reactor and voltage regulator. S/N 1,400,300. Type SL, OISC, Indoor, L. Spec. 339173, cont. 55° C rise for alumina and magnesia melting furnace.
Impedance: Internally mounted iron core reactor increases normal reactance to 30% total reactance. Reactor has straight line characteristics up to 2½ times normal current. Unused. Never hooked up. Built 1939.

ENGINE GENERATORS

ITEM NO. 810: 800 KW Skinner Unaflow Engine with AC or DC Generator. One 800 HP steam engine, S/N 10,800, 29" x 38" heavy duty side crank automatic Universal Unaflow right hand, 150 RPM, ISP 150 to 200#, back pressure 5 to 10#.
Generator Data: DC—Wemco 800 KW, 230 volt, 2400 amps, 2 wire, 150 RPM. AC—Wemco 800 KW, .8 PF, 60/3/480 volt, 942 amps., 150 RPM, Type EB. Built 1927. Engine and two generators now connected together and operated as one unit. Can be sold separately.

ITEM NO. 803: 520 KW Steam Engine Generator, Condensing. Skinner Universal Unaflow Horizontal, 60 cycle, 3 phase, 440 volt, with surface condenser. Wheeler surface condenser. 750 sq. ft., 3-pass, with steam driven condensate pump and steam jet air pump. Built 1920. Original generator rotor replaced with split cast steel rotor. Condenser bought new in 1927.

Also **DIESEL ENGINE GENERATORS, SURFACE CONDENSERS**

PAUL STEWART & CO., INC.

UNION TRUST BUILDING *PHONE: MAIN 3427* CINCINNATI 2, OHIO