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### THE COST OF GENERATING POWER WITH DIESEL OIL ENGINES

STATISTICS FROM PLANTS AT SHERMAN AND CLEBURNE, OPERATED BY THE TEXAS POWER AND LIGHT CO.—ACCEPTANCE TEST AND OPERATING COSTS.

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THE Diesel oil engine was invented by Dr. Rudolf Diesel, the first working engine being produced in 1897. Since that time they have been gradually perfected until they have become a most reliable and efficient source of power. The demand for them has increased to such an extent that a large number of firms, including some of the largest and most reliable, both in America and abroad, are beginning their manufacture.

Up to the present time a considerable amount of information has been published relative to their operation and test, but accurate information as to the results to be

accomplished by the use of Diesel engines over extended periods and under the varying conditions of actual practice, is mainly wanting. The Texas Power and Light Company are at present operating two Diesel oil engine plants, one at Sherman and the other at Cleburne, and it is the purpose of this article to set forth the actual operating results obtained under every-day operating conditions.

The Sherman plant consists of three 225-h.p., 3-cylinder, 4-stroke cycle engines, manufactured by the Busch-Sulzer Bros., Diesel Engine Company, of St. Louis, Mo., each engine being direct-connected to a 150-

Sherman Gas and Electric Company's 3-16-24 Diesel Engine No. 138.

Time	Volts	Amp.	Volts	Amp.	W-Mtr.	R.P.M.	Oil	O. Com. Gals.	Air-P.	K.W.
5 p.m.	242	640	247	650	4876.0	162	—	—	72 a.t.m.	—
6 "	238	635	245	640	4891.3	164	3 0	—	.2 "	153.3
7 "	242	635	243	650	4907.0	164	19.0	16.0	71 "	156.7
8 "	237	640	246	640	4922.4	164	34.5	15.5	71 "	154.0
9 "	240	655	243	665	4938.3	163	18.0	15.5	70 "	159.0
10 "	240	650	241	665	4954.2	163	14.5	14.5	70 "	159.0
11 "	243	620	240	675	4970.0	164	15.5	15.5	67 "	158.0
12 "	240	640	242	665	4985.8	163	14.5	14.5	69 "	158.0
1 a.m.	238	640	243	665	5001.7	104	13.0	13.0	—	159.0
2 "	240	640	242	662	5017.5	164	28.0	15.0	69 "	158.0
3 "	239	655	242	670	5033.2	163	14.0	14.0	69 "	157.0
4 "	240	650	242	670	5049.1	165	28.5	14.5	69 "	159.0
5 "	240	650	242	670	5065.2	164	14.5	14.5	69 "	161.0
6 "	240	655	242	675	5081.2	164	29.0	14.5	69 "	160.0
7 "	239	665	242	680	5097.2	164	14.0	14.0	69 "	160.0
8 "	238	670	241	690	5113.0	163	28.5	14.5	70 "	158.0
9 "	238	670	240	680	5129.0	163	14.0	14.0	70 "	160.0
10 "	239	665	241	680	5145.2	163.5	29.3	15.3	70 "	162.0
11 "	240	655	243	660	5161.25	164	13.5	13.5	70 "	160.5
12 "	238	665	241	675	5177.5	164	28.25	15.25	70 "	162.5
1 p.m.	238	665	241	675	5193.2	164	14.0	14.0	70 "	157.0
2 "	240	670	243	675	5209.5	162	29.5	15.5	70 "	163.0
3 "	242	660	244	665	5225.66	162	15. 3/4	15.75	70 "	161.6
4 "	246	655	{ 250	655	5242.4	{ 160	33. 1/4	19.5	72 "	167.4
5 "	243	675	{ 251	685	5259.25	{ 161	17.75	17.75	72 "	168.5
5.05	250	0	250	0	—	170	—	—	—	—

TOTAL KW. DEVELOPED DURING TEST.

Total hours run - - - - - 24  
 Total K.W. developed - - - - - 38325  
 Average K.W. developed per hour - - 159.6—232.4 H.P. at 92% Eff. of G.  
 Maximum K.W. developed in one hour - 168.5—245.0 " "  
 Average air pressure - - - - - 70 atmospheres  
 (Oil consumption as shown averages 9.41 Gals. per 100 K.W. hours=6.46 Gals. per 100 B.H.P. hours.)