

taken until quite recently. The Edison General Electric Company seems to have the honor of being the first to solve the problem in a comprehensive manner. The transmission of power from one central power-house, containing all the boilers and engines, to the forty and more different buildings which go to make up the Schenectady Works of the Edison Company, has attracted attention from all sides. A New York publication, *Power*, chiefly devoted to mechanical interests, considers the matter of so great importance that in its February issue it gives a full and graphic description of the manner in which the elimination of the various defects mentioned above is effected.

The power-house is situated almost in the middle of a piece of land twelve acres in extent, and is surrounded on all sides by the different buildings to which it supplies the necessary power. This house contains a battery of boilers of over 2,000 horse power capacity, the engines necessary to drive the electric generators, and the generators themselves. Radiating in all directions run the conductors through special Edison underground tubes, to the different buildings, where they are connected to Edison motors which in turn are connected by belts to the shafting serving to operate the machinery. By the adoption of this method the general aspect of the interior of the buildings is entirely changed. Formerly, there stood in a corner of each building a small independent engine connected by steam piping to the boiler-house, giving off its superfluous steam, smelling of lubricating oil and raising the temperature occasionally to an unbearable degree. Now, in the place of the engine, and occupying, perhaps, less than a quarter of the space, is a small motor, a switchboard and a regulator. One throw of a small switch lever, the motor is running noiselessly, and the whole machinery in the building is in motion. There is no trouble, no engine on centre, no steam, no smell and no dirt. The attention required by the motor is very slight, and one of the workmen looks after it without allowing it to interfere with his ordinary occupation to any appreciable degree. The machinery in the forty odd buildings, operated by the motors, drawing their motive force—electricity,—from the central power-house, gives employment to over 3,500 men. Electricity is also conveyed along the wires to the different testing-rooms, where all kinds of electrical power apparatus is continually under delicate test. In addition, the two largest machine shops, properly so called, where the big Edison dynamos and their smaller brothers are assembled, and the foundry, are each equipped with travelling cranes, which are operated ex-

clusively by means of electrical motors. These are so constructed that they respond immediately to the slightest desire of the motor-man, and are capable of raising and transferring immense weights with ease and rapidity. Here also are to be found the huge shears for cutting iron, and the large and small trip hammers, all owing their working ability to electricity generated at a point many hundreds of yards distant.

In addition *Power* gives the following facts in figures :

The power plant comprises an Armington & Sims 10 x 12 engine of 150 horse power, driving on one 100-kilowatt railroad generators and two 100-kilowatt standard generators, and another Armington & Sims engine of same proportions in reserve, coupled to one 50-kilowatt and one 100-kilowatt generator. A small engine of same make of 25 horse power drives three 8.5-kilowatt generators. There are also two 300 horse power Edison triple automatic engines, each driving two of the new Edison 100-kilowatt multipole dynamos, and a 150 horse power triple automatic engine driving two 60-kilowatt generators of former standard Edison type. The boiler battery consists of three boilers of 500 horse power each and three of 250 horse power each, making a total of 2,250; this will eventually be raised to 3,000 horse power when the three additional 250 horse power boilers are put up. The present generator of dynamo capacity is about 1,000 kilowatts. This will be increased to 1,400 kilowatts as soon as possible, and the normal capacity of the power station will then be 1,900 power. The normal output is about 950 horse power at the present moment, but this is increasing as the new shops go up. The present floor area of the Schenectady Works is 11.84 acres. Current is distributed to 43 motors of standard Edison type, which would represent a capacity of 1,324 kilowatts if run to their full capacity. About 20,000 feet of single conductor wire is used to convey the power from the central house to the motors, and this does not include the wiring of the buildings or the conductors laid in Edison underground tubes. The voltage of the motor circuit is 250 volts, the lights running on 125 volt circuits. The loss of power in transmission is small when compared with the enormous loss when steam was conveyed to the small independent engines in the scattered buildings.

Thus it will be seen from the foregoing that from the points of view of both economy and expediency the days of the universal use of steam alone in power transmission are numbered. The impetus has been given to a new departure, and the progressive nineteenth century ideas will effect the rest.—*Manufacturers' Gazette*.

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