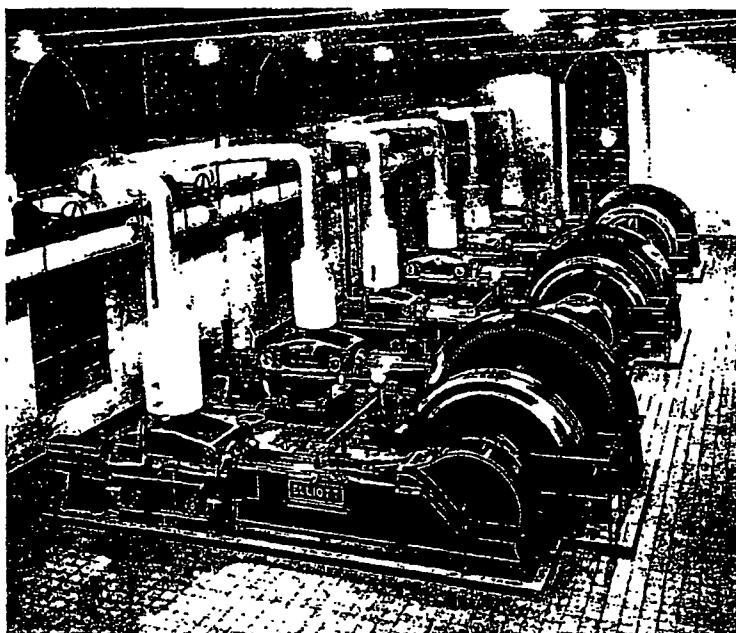




The three Elliott 2500-hp. twin engine units in the New York Hospital are impressive in their beautiful engine room surroundings. Each engine cylinder is protected by a 10" Elliott Welderon receiver separator.

outside steel and brick work is square and the stack is round, there is space in each corner for ventilation and pipe shafts. An 18" atmospheric exhaust pipe is placed in one of these corners. The steel breeching from the boilers enters the smokestack about 7 feet above the sixth story level.

Fuel oil comes to the plant from barges and is stored in six tanks with a total capacity of 136,800 gallons. Several Elliott Twin Strainers are used in handling the fuel oil. They are installed on both suction and discharge sides of the steam-driven pumps handling the oil from the storage tanks. The combustion control system is very complete.

About 2,300,000 lbs. of water are handled per day by two boiler feed pumps, of which only a small portion is raw make-up. No feed water treatment beyond that of de-

aeration is used. Two 150-g.p.m. and two 350-g.p.m. Lecourtenay centrifugal pumps driven by Elliott slip-ring motors are used for supplying the house water. Adequate fire protection is afforded by a reserve tank of 10,000-gal. capacity from which water can be pumped by a four-stage centrifugal fire pump driven by an Elliott 200-hp. variable speed motor.

The Engine Room

The engine room is very attractive, with floors of red Dutch tile, walls of white vitrified brick, and full height cathedral windows. At present, three units, totaling 7500 hp., are installed, and floor space has been provided for two additional engine-generators of the same size as those now installed.

Three Elliott twin-cylinder engines each drive two generators. Each cylinder, having a 26" di-

ameter and a 36" stroke, delivers 1250 hp., so that each unit develops a total capacity of 2500 hp. Each unit drives directly a 3-phase, 60-cycle alternator, supplying 1250 kw. at 80% power factor and operating at 600 volts and 1503 amperes; and also on the same shaft a 300-kw. direct-current generator operating at 250 volts and 1200 amperes. The engine-generator units occupy a floor space approximately 40 by 50 feet.

The Medical and Research Departments of the Hospital require, for X-ray and other special uses, an electrical service, the frequency and voltage of which must not be subject to variations permissible under conditions less exacting. This demand created a real problem in engine governing. A detailed description of governing details on these engines was given in the Winter 1931 issue of POWERFAX. A centrifugal speed governor, embodying a specially designed inertia element, admits oil under pressure through a controlled pilot valve to a mechanism which in turn controls the movement of the engine valves. The rapidity of response of this governor to load changes and the stability of engine operation obtained has fully met the exacting requirements. The engine governing system also includes a Warren Telechron control which maintains the integrated speed of the engine at an average corresponding to 60 cycles per second. The Telechron control motor, with the help of the master clock, has nothing else to do but control the engine speed within correct limits so as to make exactly 216,000 revolutions per day, no more and no less (that is the number of revolutions required to keep all of the electric clocks at the correct time). The controlling device of the master