openings that are provided on the older machines.

With the Elliott 12,000-sq ft surface condenser provided for this unit, a 28-in. vacuum can be obtained with 85 F circulating water. Photographs show this condenser, its dual-driven circulating pumps, dual condensate pumps and ejector. A steam-operated priming ejector with remote control is installed on the circulating pump. In order to assure an adequate cooling water supply for the new 7500-kw unit, as well as for a future unit, a circulating water aqueduct approximately 200 ft long and 20 ft deep was built under the power plant. This aqueduct has an intake chamber 5 ft wide and a discharge chamber of the same width. The new circulating water pump was therefore located directly under the condenser. At the mouth of this aqueduct an additional traveling screen 102 in. wide, with a capacity of 17,500 gpm, with a 2-ft-per-sec velocity, was installed.

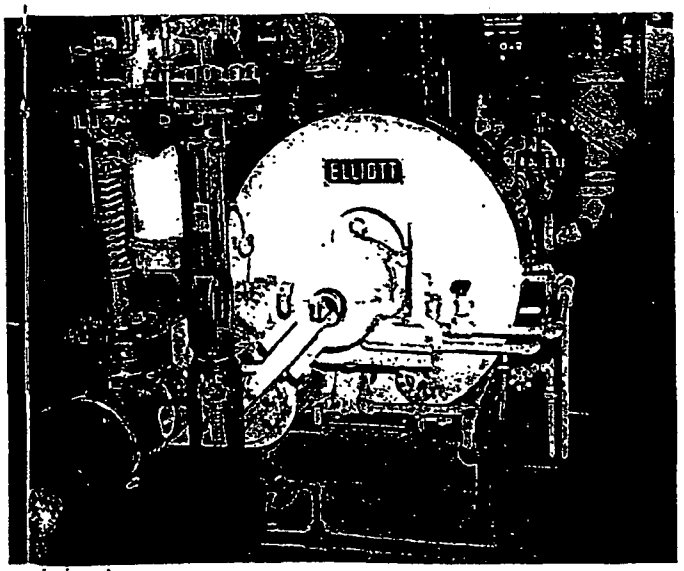
New switchgear was installed, not only for the new units, but for the entire plant and all distribution feeders.

One of the problems commonly encountered in plants of this size and type is that of arranging equipment and control, so that a so-called skeleton crew may provide satisfactory operation. It is not only necessary that the plant be reasonably efficient, but that labor costs per kilowatt-hour be kept at a minimum. With this thought in mind, three control panels located on the turbine floor were set up as a master control point for all station equipment, exclusive of coal handling equipment. These three panels, namely, the boiler control panel, turbine panel, and main switchboard, not only control all equipment but carry a complete visual and audible alarm system for essential equipment.

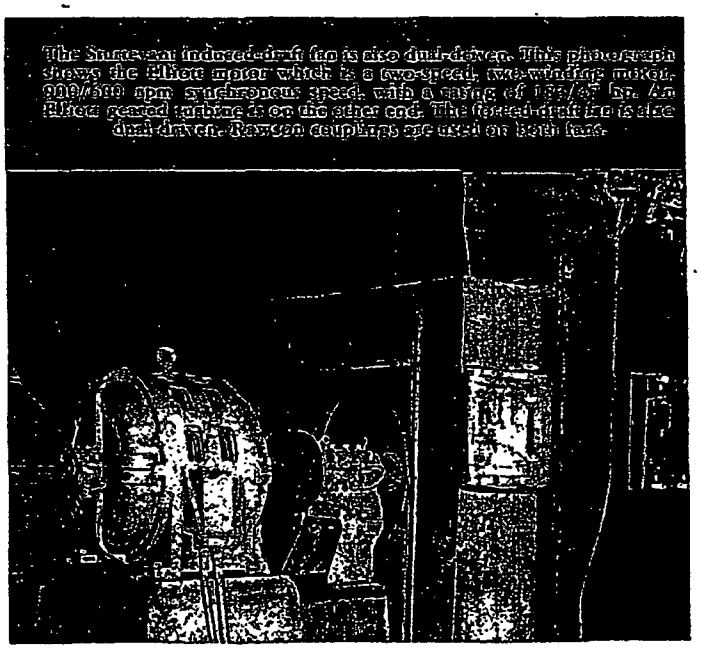
Coal-handling equipment in the new plant addition consists of one 75-ton bucket elevator and one emergency 25-ton bulk flow elevator, each of which has its own track hopper pit. Coal can be routed through the crusher or by-passed around it. Either or both of these elevators can dump on to a horizontal flight conveyor at the top of the 423-ton bunker. Near the bottom of the bunker is located a continuous flow conveyor so arranged that it will supply the old one-ton weigh-larry, which in turn can feed the original boilers. In the new building, coal is taken from the bottom of the bunker by a five-ton weigh-larry to supply the new boiler and a future boiler. A control unit, with interlocks, is located on the ground floor near the track hopper pits.

Needless to say the 1947 Piqua power plant addition is only another step in the expansion program and not the final story. The firm capacity, that is, the capacity prior to the 1947 edition, with one large unit out of service, is now only 150,000 lb of steam per hr or, on the generating end, 12,000 kw. This compares to 100,000 lb of steam per hr or 8000 kw. However, with the addition of another 150,000-lb-per-hr steam generating unit, foundations for which are already installed, and with the installation of an additional turbine-generator unit, the firm capacity of the Piqua plant will then be 300,000 lb of steam per hr and 20,000 kw. Considerable preliminary work has already been undertaken towards the installation of this future equipment, and to safeguard the present loads and those forecast for the next year, auxiliary oil-burning equipment is to be installed on the two original steam generating units. The capacity of this oil-burning equipment per unit will be approximately 20,000 lb of steam per hr.

The Elliott 207-hp steam turbine driving a four-stage, 400-gpm boiler-feed pump is fitted with a differential pressure regulator and equipment for remote control.



The Sturtevant induced-draft fan is also dual-driven. This photograph shows the Elliott motor which is a two-speed, two-winding motor, 900/600 rpm synchronous speed, with a rating of 1[illegible]/67 hp. An Elliott geared turbine is on the other end. The forced-draft fan is also dual-driven. Dawson couplings are used on both fans.



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