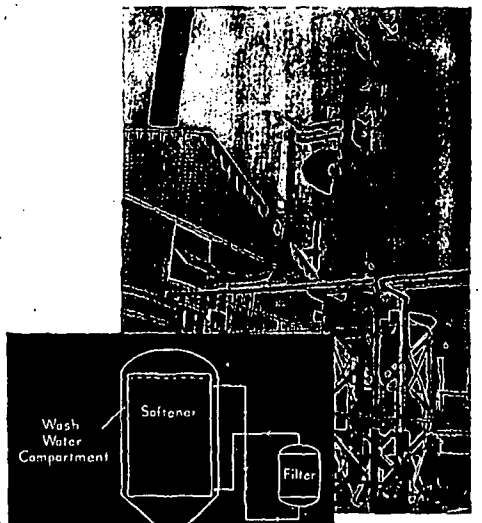
NEWS from the power front

Worthington Pump and Machinery Corporation
Harrison, N. J.

The Only Uniformly Continuous Hot Process Water Softener



Worthington Hot Process Deaerating Softener design eliminates filter backwash troubles.

Continuously uniform water treating results can be obtained *only if treating* process remains undisturbed during recirculation of filter backwash water.

Worthington's exclusive design completely divorces the filter backwashing operation from the treating process, thereby permitting continuously uniform treatment and preventing filter deterioration.

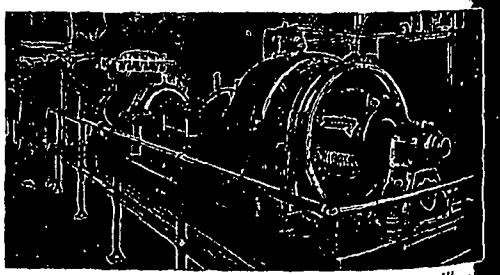
A wash water storage *settling compartment* (see diagram) provides clear, hot, deposit-free water for backwashing purposes, thereby eliminating filter difficulties, increasing the period between backwashing operations and decreasing the time of the backwashing operation. The filter is washed clean with clean water without disturbing the softening process.

10 Years in a Hospital and Never a Patient

Ten years ago, the Oak Forest *Infirmary in Oak Forest, Illinois*, installed a Worthington 600 kw geared direct-current turbine-generating unit.

Over the ten years, the unit has operated continuously and without attention in the way of service except for an inspection every four or five years.

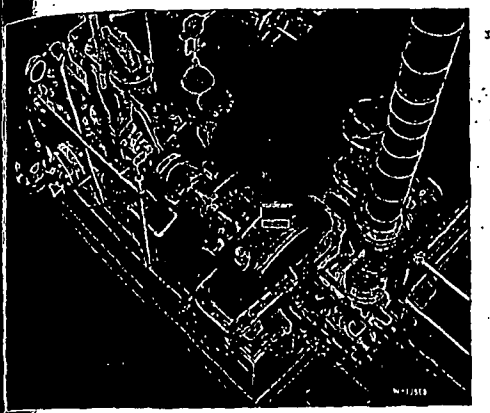
The machine is a non-condensing unit operating on steam at 150 lb initial pressure, 0 deg F superheat, and exhausting to 3 lb back pressure. The exhaust is used for heating water, cooling, baking and to heat various buildings in the institution. No live steam direct from the boilers is used for heating since, in addition to the turbine-generating unit, most of the auxiliaries such as pumps and fans are steam-driven.



Worthington Turbine-Generator—Oak Forest Infirmary, Oak Forest, Ill.

It is estimated that the savings made by running their own plant, over the cost of purchased power and generating steam for heating only, have been substantial, paying for the Worthington unit a number of times over.

Pumping for Pipe Testing



Worthington 4-UX-1 Pump and Worthington T2RA Turbine . . . supplying high pressure water, A. M. Byers Company, Pittsburgh, Penna.

A. M. Byers Company, as you probably know, manufactures wrought iron pipe for many purposes—*particularly for the fast-becoming-popular radiant type* of heating.

All its pipe is carefully tested in the plant, and for this purpose it uses a weighted accumulator system. To supply the high pressure water, Byers selected a Worthington pump and Worthington turbine. *Choice of the* Worthington equipment was based primarily on its compactness, economy in steam consumption, and the speed with which it gets into operation.

The pump is a 4-UX-1, designed for capacities between 350 gpm and 500 gpm, producing 800 lb TDH with 50 ft or more of suction pressure. It runs at 3600 rpm, and the minimum BHP required at the maximum condition is 334.

The turbine is rated 350 Bp at 3600 rpm, and operates on 156 lb steam with 50F superheat and 2 lb gauge back pressure. It is equipped with a hand speed changer.

Sewage Gas Engine Returns $199,000

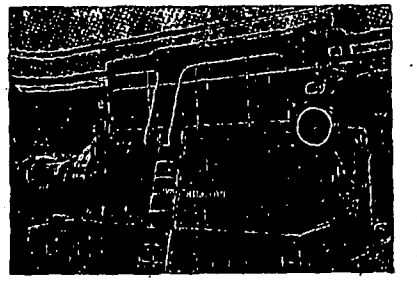
The annual report of the Fort Wayne (Indiana) sewage treatment plant reveals a 1946 saving of $199,000 by the 465 hp Worthington gas engine installation. This brings the total six-year saving to $199,000.

The plant, *considered one of* the outstanding municipal developments in the country and a mecca point for inspection tours by engineers from other communities, was completed in 1940. Fort Wayne had been mandated by the Indiana State Board of Health to cease pollution of the Maumee River, and *now the* sewage is so free of offensive material that the river is capable of sustaining fish life.

Total sewage treated in 1946 amounted to 6,648,960,000 gallons, an average of 18.73 million a day. From this 7,000 tons of sludge was removed, and into it 145,890,000 cubic feet of air was pumped.

The Worthington gas engine was originally purchased at a cost of $30,000. The estimated saving is based on what it would have cost otherwise for additional electric power.

The *engine contributes* to heating the sludge digesters. The sludge is pumped in liquid form into four covered digesters where it is decomposed by bacteriological action, producing methane gas. Heat from the circulating water in the engine is used to *raise the temperature of the* sludge to the desired point for proper bacteriological digestion. In 1946, nine billion BTU's of heat went from the engine to the digesters—equivalent to 650 tons of coal.



Worthington Sewage Gas Engine—Fort Wayne, Indiana, Sewage Treatment Plant.