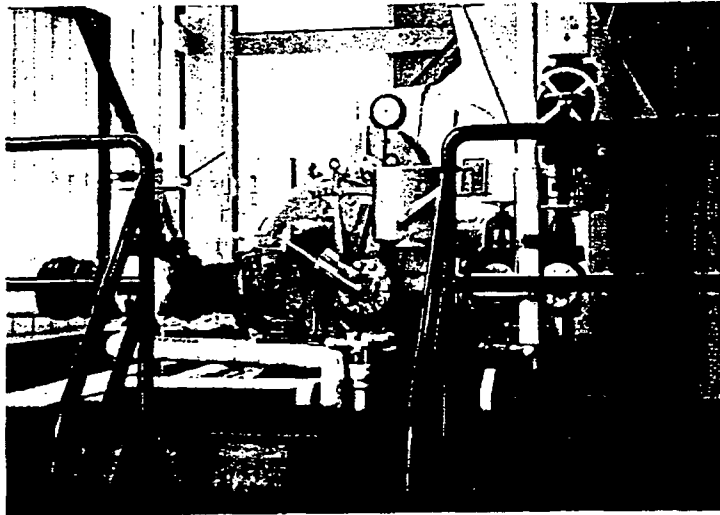


HOW TURBINE DRIVES ARE USED IN NEW BOILER PLANT FOR AUTOMOTIVE MANUFACTURER

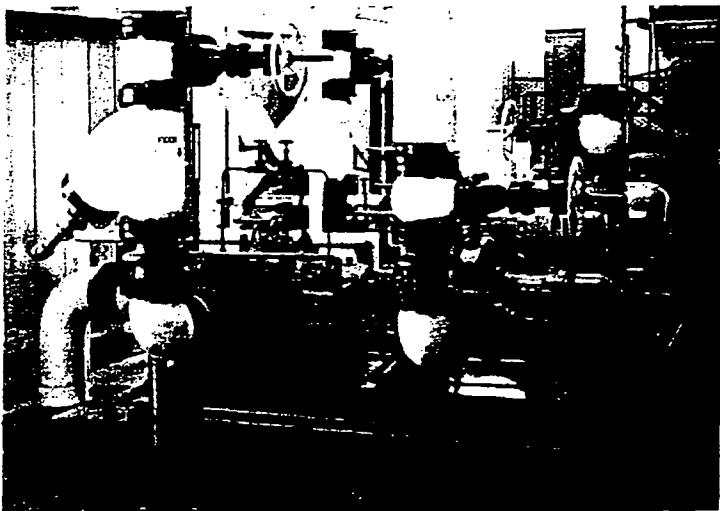
BOTH turbines and motors are used on the draft fans and the boiler-feed pumps in the new boiler plant of an automotive manufacturer. In this plant, steam is generated for use in heating, processing, and driving air compressors, as well as for air-conditioning the administrative and manufacturing buildings. The new boiler plant houses two 80,000-psi units.

Each boiler is provided with a single-inlet, single-width, forced-draft fan which is equipped with variable inlet vanes and outlet dampers by which the operation of the fan is controlled, and this control is in parallel with the control for overfire air, reinjection air, and rotor-cooling air. The forced-draft fan is driven by a 40-hp motor and has a capacity of 30,600 cfm. The induced-draft fan for each boiler is a double-inlet, two-thirds-width unit of 52,500 cfm capacity. These fans are driven by Elliott geared steam turbines, equipped with variable-speed governors. The fans are controlled by varying the speed of the turbine through an auxiliary diaphragm-operated needle valve actuated by furnace draft.

There are two boiler-feed pumps, one turbine-driven and one motor-driven. Normally the turbine-driven pump is used.



Above -- one of the Elliott geared turbines driving induced-draft fans through reduction gears. To facilitate periodic inspection, forced- and induced-draft fans are installed at an elevation about halfway between the operating floor and the top of the boilers. Fans and drives are mounted on a common baseplate which minimizes the possibility of any misalignment under conditions from cold starting to warm full-load operation.



This photograph shows the boiler-feed pumps. Normally the turbine-driven pump in the foreground is used, but an identical motor-driven pump is available.