

steam, just about enough exhaust steam to meet feedwater heating requirements. Any additional steam required for this purpose will come from the 30-lb steam system through a reducing valve. It is contemplated that one of the existing smaller feedwater pumps will carry the plant load during most of the summer season, or the two in parallel will carry the loads in the winter season. This will always leave one or more feed-pumps idle, ample time being provided for maintenance and stand-by capacity.

The coal-handling system, continuous blowdown equipment, ash-

fuel boilers. This was done in order to provide two methods of getting coal from the car to the main boiler coal bunkers, permitting maintenance on any of the coal-hoisting equipment at any time and promoting continuity of operation.

New Turbine

The steam loading diagrams showed the maximum required steam loading upon which a new turbine size might be selected. Conditions of minimum hydrogeneration over the past ten years, minimum steam requirements over the calendar year,

maximum steam available from wood refuse (which reduces by-product power available from turbine extraction), no steam flow to dryers of paper machines but full power required to keep paper machines running, and peak electrical loads on system were considered. The important by-product power, previously discussed, received utmost consideration. Finally studies of electrical power requirements of the new paper machine and pulp requirements were superimposed upon the electrical loads of the existing system to determine the total electrical requirements.

Under the most extreme conditions it was considered that 6400 kw would be required for the expansion program. An .8 power factor 6000-kw turbine-generator was selected with extraction at 30-lb pressure. This size provides no expansion for future growth conditions; however, variations in river flow conditions should provide ample time for planned maintenance and overhaul periods so that the equipment can be kept in best condition for low-water periods.

Load studies further indicated that



Left and below—Three Elliott Crocker-Wheeler 25-hp, 3600-rpm motors driving desuperheater water pumps.

handling equipment, combustion control, feedwater regulation, ventilation, coal scales, and feedwater treatment were, in general, extensions of existing systems. The installation of the equipment and clearing of the site involved the removal of two stoker-fired boilers, their coal bunkers, removal of their induced-draft fans, duct work, and relocation of an existing bucket elevator in front of the stoker-fired boilers.

The latter boilers were then equipped with a small coal silo, and the existing bucket elevator adapted for use with this silo. Further adaptation was made to transfer coal from the old bucket elevator to the new bunkers supplying the two large powdered-

