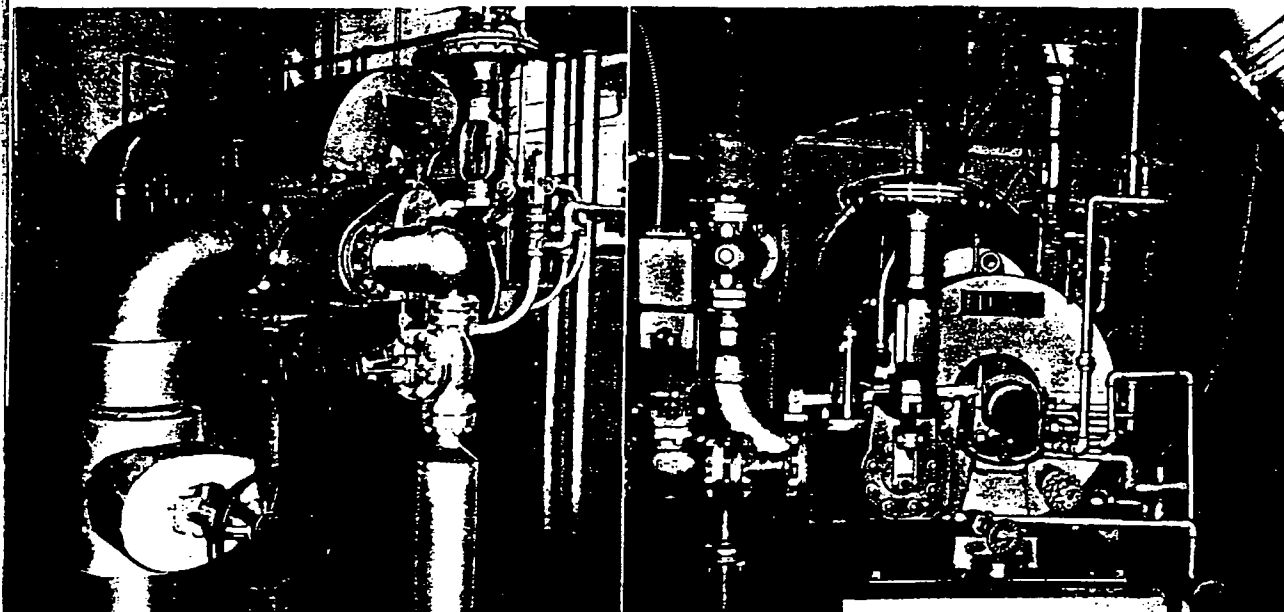




*Geared turbines, with NEMA "A" variable-speed governors, are used to drive draft fans: At left is seen one of three Elliott 204-hp geared turbines driving the induced-draft fans. At the right is shown one of the three Elliott 90-hp geared turbines which drive the forced-draft fans.*

in diameter. The spinneret is immersed in a spinning bath of dilute sulphuric acid and various salts. When the viscose is pumped through the spinneret into the spinning bath, it coagulates because the chemicals in the bath remove from the cellulose the caustic soda and carbon disulfide which heretofore rendered it soluble. Thus the cellulose is again in a solid state in the form of fine filaments. The filaments are twisted and wound on tubes or cones. Between 14,500 and 17,000 yd of thread are wound onto beams approximately 2½ ft in diameter by 5 ft long for shipment.

These processes, performed on a huge commercial scale, of course require a large amount of very reliable electric power, process steam, and water 24 hours a day. The electric power consideration assumes critical importance since the Lowland plant has no external source of power. The 60-cycle electric power needed in the manufacturing process is generated by three Elliott turbine-generator units. Four existing boilers (a fifth is

now being installed) supply steam for turbine throttle inlet conditions of 400 psig and 720 F and serve, also, pressure-reducing stations for process steam. The turbines may operate straight condensing, or steam may be extracted for manufacturing processes at 20 psig. A rayon plant requires large quantities of steam for process in addition to a nominal steam-heating demand. At Lowland, extraction steam from the turbine units is the largest source of process steam, augmented by pressure-reducing make-up stations. When the Lowland plant went into operation, two Elliott 5000-kw turbine-generator units were installed. By 1951 a third unit of essentially duplicate characteristics was installed. Each of these turbines is served by an Elliott 6500-sq ft surface condenser of the horizontal two-pass nondivided water-box type with fabricated steel shell and cast-iron water boxes. In these condensers, the tubes are rolled in the tube plate at both ends by a special Elliott method, eliminating

the necessity of an expansion member in the shell. Each condenser is equipped with a twin two-stage steam jet ejector. The ejectors are so arranged that any stage may be isolated without interference with the operation of the other two-stage element.

Elliott mechanical drive turbines are driving the boiler-feed pumps, the forced- and induced-draft fans, and condensate pumps on Units 1 and 2 in the power plant. Incidentally at the Asheville plant of American Enka Corporation, 10 Elliott steam turbines are employed to drive boiler auxiliary equipment and Elliott steam jet ejectors serve vacuum equipment.

Elliott Crocker-Wheeler motors drive the condensate pumps on Lowland Unit 3. Seventeen Crocker-Wheeler motors, in sizes from 3 to 40 hp, are used in various plant drives, such as rotary blowers, car shaker, conveyor, and numerous pumps handling viscose, brine, salt slurry, etc. A 250-hp, 1765-rpm motor drives a refrigeration machine.