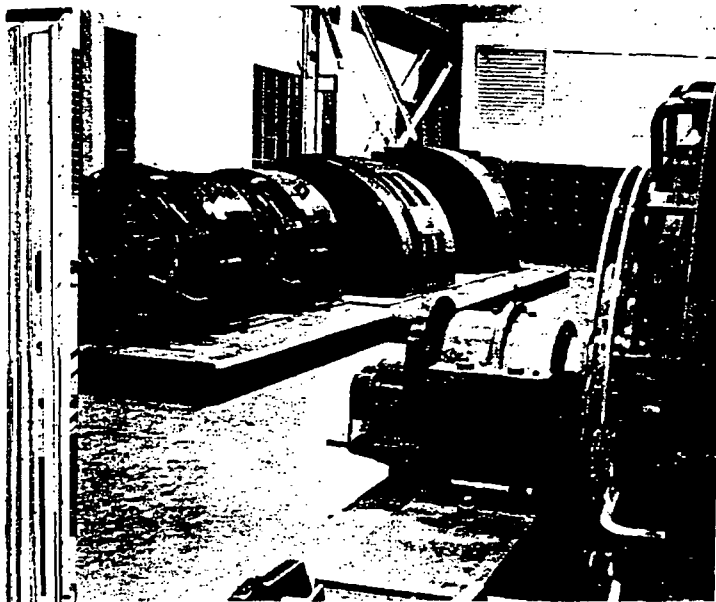
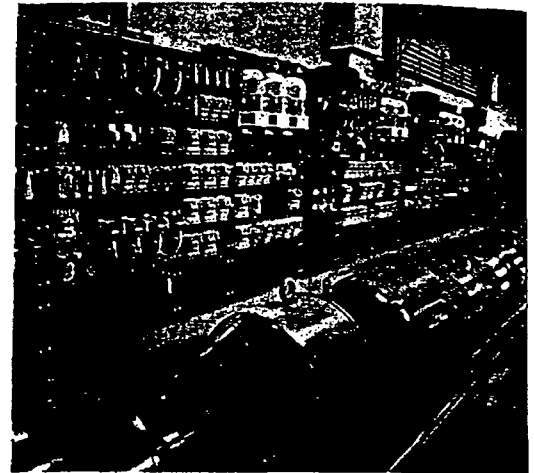




*This is a view of the Elliott motor-generator set taken across the outboard bearing pedestal of the 3000-hp main drive motor. The two 800-kw generators (one for each reel drive motor) are on the near side of the 4500-hp, 13,200-volt, 514-rpm synchronous motor driver. Beyond the synchronous motor is the 2500-kw, 600-volt d-c generator which serves the main mill motor. Against the rear wall is the a-c control center and above that is the lowered opening through which air is re-circulated to the air filter. All large machines are furnished with enclosing covers which direct the cooling air from the cellar, across each machine, and on out into the motor room.*



*A view of the d-c control board, the very complex nerve center of all the d-c machines. The Elliott C-W exciter sets are lined up in front of the board. The motor room is spacious, well designed, adequately lighted, and it is functionally painted.*

to the preceding coil and pulled through successive baths of sulphuric acid and hot water. After passing through a trimming unit that produces a machined edge by shearing approximately a half inch from either side of the strip, the steel is recoiled on a tension reel.

From the pickling line, the coils go to the new reversing cold mill where, by screw-down pressure and tension, the strip of steel is reduced to specified gage and finish. The main building of the cold mill is 300 ft long by 100 ft wide and 63 ft high. The adjoining motor room, which houses the mill's electrical equipment, is of steel and concrete block construction. The mill is known as a "4-high" mill because the two "work rolls," through which the strip of steel passes back and forth as it is alternately wound

and unwound by tension reels on either side of the mill, are supported by two "back-up rolls."

The Newport mill is capable of handling coils weighing up to 40,000 lb with an inside diameter of 24 in. and an outside diameter of 65 in. When reduced to .015 in. in thickness the coiled strip of steel is approximately 5800 ft long.

After being cold rolled, the coils go to a continuous flying shear where the steel is uncoiled, flattened, and cut to proper lengths and width according to ordered sheet specifications. The sheets are then annealed in gas-fired, controlled-atmosphere furnaces, are temper-passed, and—after thorough final inspection for surface finish, gage, and size—are packaged for shipment.

Ground was broken for the project

January 19, 1954, and placement of concrete for the mill's heavy foundations—1116 cubic yards in all—began less than a month later on February 18. Erection of the mill was started last August 30, and the first test run of steel was rolled November 30.

The Bliss 18 in. by 49 in. by 56 in. single-stand, four-high reversing cold mill is designed to reduce hot-rolled pickled strip from 0.080/.130 in. to finish gages of .015/.050 in. Hot-rolled coils, having an inside diameter of 24 in. and a maximum outside diameter of 67 in. are fed from a 100-kw drag pay-off unit, through a threader leveler (with over-running clutch) to the mill, and wound on the 1000-hp winding reel. This reel is located on the entry side of the mill and is used for winding and unwinding the coil for all succeeding passes. The nominal top speed is 1775 fpm.

The mill and reels are controlled by a variable-voltage control system to provide continuous speed adjustment from the low threading speed to any desired running speed. Speeds below 711 fpm are obtained by volt-