

ST. LAWRENCE POWER PROJECT

Amid the orderly bustle of construction at Ontario Hydro's Robert H. Saunders-St. Lawrence Generating Station, work is already well under way on a significant new phase in the building of the mighty giant.

An Ontario Hydro engineering team is now working closely with the representatives of the Canadian General Electric Company and the Canadian Westinghouse Co. Ltd. on the installation of the first four of 16 generators for the powerhouse, scheduled for initial operation in July of this year.

Fitting the 650-ton generators into the massive Canadian powerhouse climaxes more than three years of work on the St. Lawrence Power Project. For it was in August of 1954 that officials of Canada and the United States, and of Ontario Hydro and the Power Authority of the State of New York, gathered to launch the project.

Since 1954, Ontario Hydro and the Power Authority, working as partners, have directed a peak work force of some 12,000 in bringing the project toward completion. The generator installation work represents the ultimate construction phase on the powerhouse, and will continue until 1960 when the last of the units will go into service.

The immense, 60,000-kva units are being manufactured by Canadian Westinghouse and the Canadian General Electric Company, each of which is supplying eight of the generators. Through rigorous planning, the components for each unit are manufactured, and shipped progressively so that parts for each unit arrive at Cornwall on the precise date that erection of each generator is scheduled to start.

The shipping weight of a complete generator is approximately 1,310,000 pounds, and transportation of the parts from factory to the powerhouse is made by railway or truck. Many of the problems created in handling these behemoths can be readily appreciated for the weight of some of the components is immense. A complete rotor weighs about 250 tons, a stator 145 tons and a shaft 58 tons. Once at the powerhouse, the generator parts are installed in the completed generator pits with the assistance of a 300-ton capacity main gantry crane in the powerhouse.

An interesting feature of the installation is the design of the main thrust bearing. This bearing is designed to carry a load of approximately 1,400 tons, including a hydraulic thrust of some 1,100 tons, due to the turbine and the weight of its shaft and runner. It is also of interest to note that when the unit is working, it will rotate at a speed of 94.7 r.p.m. or 1½ times a second.

Each generator is approximately equivalent in height to a three-story house. Each has 56 miles of copper wire and nearly 195,000 punched laminations in its construction. Even more startling is the fact that four of the machines

could supply all the power required by a city the size of Hamilton.

The design of the St. Lawrence powerhouse differs from the majority of the Commission's other hydraulic stations in that the plant is of the modified outdoor type. Instead of the conventional superstructure over the generating rooms, the units will be protected by removable covers. These covers split in the middle, and are operated electrically to slide apart on tracks, exposing the generator.

Thus exposed, the individual units are simply lifted out, and can be disassembled and removed by means of the 300-ton gantry crane, to the enclosed erection bay for major maintenance work.

While the installation of the generators testifies to the advanced stage of construction achieved to date on the mighty new powerhouse, work is continuing also on the placing of concrete and the installation of mechanical parts for the matching turbines supplied by the English Electric Company.

By the end of 1957, a total of 880,000 cubic yards of concrete - approximately 90 per cent of the total required - had been placed in the powerhouse. In addition, speedings for all the turbines were in place.

Now in an advanced stage of construction, the Robert H. Saunders-St. Lawrence G.S. represents Ontario Hydro's last major source of hydro-electric power. When completed, it will contain turbo-generator equipment of the most advanced and efficient design, representing a major addition to the Commission's resources.

MAPLE PRODUCTS, 1957

Farm value of maple products in 1957 amounted to \$10,342,000, up 4 per cent from the preceding year's \$9,936,000 and the 1950-54 average of \$9,942,000, the Dominion Bureau of Statistics reports in a special statement. Output of maple products (expressed as syrup) in 1957 rose to 3,134,000 gallons from the preceding year's 2,677,000 and the 1950-54 average of 2,626,000 gallons.

Production of maple syrup last year increased to 3,068,000 gallons from 2,618,000 in 1956. Average farm price dropped to \$3.27 per gallon from \$3.70 but the gross farm value rose to \$10,031,000 from \$9,676,000. Maple sugar output rose to 661,000 pounds from 586,000, average farm price to 47¢ per pound from 44¢, and gross farm value to \$311,000 from \$260,000.

Gross farm value of maple syrup produced in 1957 amounted to \$8,328,000 versus \$8,336,000 in the preceding year. Ontario was next with \$1,574,000 versus \$1,272,000, New Brunswick \$95,000 versus \$51,000, and Nova Scotia \$34,000 versus \$17,000. Production of maple sugar in Quebec had a farm value of \$236,000 versus \$230,000, New Brunswick \$58,000 versus \$21,000, Nova Scotia \$10,000 versus \$5,000, and Ontario \$7,000 versus \$4,000.