

THE INTERNATIONAL NICKEL COMPANY OF CANADA, LTD.

H.P. each and two triplex oil pumps, one a spare, furnishing hydraulic power for the governors to control the supply to each of the water wheels. Back of the wheels, on a high platform, is the switching equipment. All of the generators' output from both buildings is here distributed and handled by remote electric control through the various breakers. These breakers are all situated over the transformers to the rear of the switching and alongside the substation, together with the switching performances of the machines. The electric energy developed is a 3-phase, 25-cycle current and is generated for the transformers at a nominal voltage of 2,600. There it is stepped-up to 33,000 for transmission to the mines and the smelter.

The transmission line consists of two sets of three No. 1 B. & S. gauge copper wires arranged with equilateral triangle 4-foot spacing. The wires are supported by stands made up of A-poles with a common cross-arm. The stands are spaced at about 150 feet and number around 1,150 in all. The poles are untreated and, after 14 years of service, are seemingly good for as many more years. Practically no replacements have been made. The cross-arms have been painted the usual mineral red and during the current year it was found necessary to replace about 10 per cent on account of dry rot.

The current delivered to the mine at Creighton and to the smelter at Copper Cliff is stepped-down at these points to 2,200, 550, and 110 volts for various uses. The lighting circuits everywhere are 110 volts and most of the motors about the plants are 550 volts. Motor generator sets furnish direct current to charge the battery and trolley locomotives underground, on the furnace charge floor, and to dump slag pots at the smelter. The 2,200-volt circuits drive the larger machines in the power houses at both mines and smelter.

At the mines, the maximum portion of the power is consumed by the hoists, the air compressor, and the rock-house motors. In the hoist house, the 1,500 K.V. capacity flywheel motor-generator set furnishes D.C. energy for one 1,800 H.P. Wellman-Seaver-Morgan hoist. In the compressor building, two Ingersoll-Rand compressors use 923 rated K.V.A. each at full load, and a Belliss & Morecom compressor uses 900 K.V.A. at full load. Each of these furnishes approximately 5,000 cubic feet of air at 100 lb. per square inch. In the rock-house, about 500 rated horse-power is used when in full operation.

In the event of the current being interrupted from any cause, there is in constant readiness at the smelter an auxil-