

The Canadian Engineer

An Engineering Weekly

THE HIGH TENSION TRANSMISSION SYSTEM OF THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO.

FOURTH ARTICLE.

Dundas Station.—The Dundas station (Fig. 25) is the main inter-switching station of the present system, and from here the outgoing transmission lines radiate to the various sub-stations.

The station equipment consists of four 750 kv-a. oil insulated, water cooled, 110,000 to 13,200-volt Westinghouse

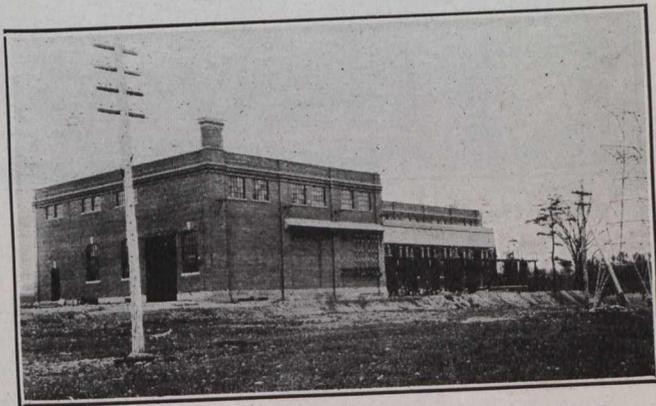


Fig. 25.—The Dundas Inter-switching Station.

step-down transformers, employed to supply the city of Hamilton and vicinity; seven 110,000-volt Westinghouse electrically operated circuit-breakers equipped with condenser type bushings; six sets of outdoor type, 110,000-volt, electrolytic lightning arresters and two sets of 13,200-volt, electrolytic lightning arresters.

Seven 110,000, three-pole automatic solenoid-operated oil switches, one for each incoming and outgoing line and one for each bank of three 750-kv-a. transformers are also installed. Two sets of 110,000-volt buses are supported on horizontal I-beams near the roof, in a manner similar to those at the Niagara Falls station. Disconnecting switches are provided on the line side of the oil switches, while on the station side two sets are installed and so arranged that any of the lines may be connected to either set of buses. (Fig. 26).

The same method of installing and removing transformers is employed as at Niagara. In fact, the same ar-

range is in all stations in the system. The transformers are connected star delta with low-tension winding potential of 13,200 volts. A spare transformer is provided to replace the transformers of the connected bank, in case any of them become disabled.

The 13,200-volt switches and busbars are enclosed in concrete cells. The present structures accommodate the transformer switch, two line switches, and the service transformer switch. They are all automatic, electrically controlled oil switches, each provided with relays best suited for the requirements of the service for which they are employed. Service transformers are provided to supply light and power to the station. Three oil-insulated, self-cooled, 75-kv-a. transformers, stepping down from 13,200 to 2,200 volts serve the town of Dundas. (Fig. 27).

The apparatus in the station is operated from an enclosed control room situated at one end of the high-tension switch room, in which are located the main control and service boards, similar to those at Niagara. The control switchboard carries all the control switches operating at 110-volt d.c. for the remote control of the high and low-tension

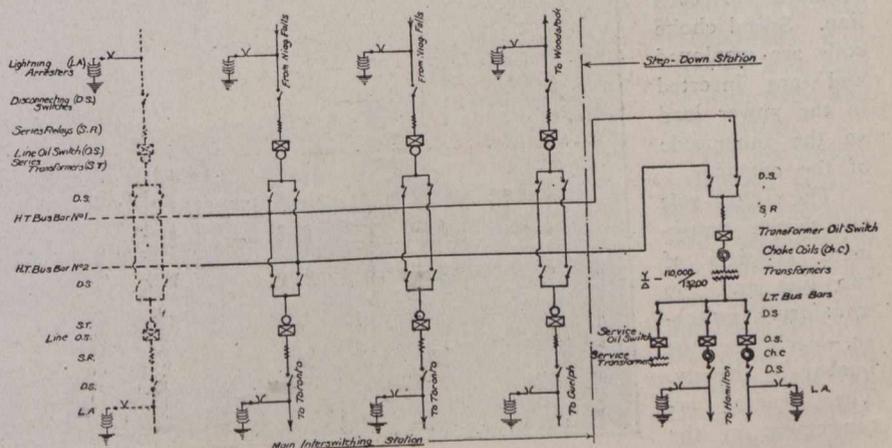


Fig. 26.—Wiring Diagram, Dundas Station.

power switches, and also the meters. The service board is a regular switchboard employed to distribute the power to the different lighting and power circuits in the station.