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DEPARTMENT OF ELECTRICAL ENGINEERING

McGILL UNIVERSITY

MONTREAL

August 25th, 1933.

Sir Arthur W. Currie, G.C.M.G.,K.C.B.,LL.D.,
Principal,
McGill University, Montreal.

Re: The High Voltage Laboratory at McGill and the Inclusion of Instruction in High Voltage Phenomena in the Course in Electrical Engineering.

Dear Sir Arthur,

Following our conversation of yesterday regarding the development of a modern high voltage laboratory at McGill and the inclusion of instruction in high voltage phenomena in the course in Electrical Engineering, I beg to offer the following comments.

To develop a high-voltage laboratory which would enable us to test the apparatus used on the large power systems of today would require equipment for at least 1,000,000 volts at 60 cycles and a lightning generator of the same or higher voltage for impulse testing. A large and expensive building would be required with an open space of some acres around it for outdoor structures and tests. The laboratory would have to be located outside the city and would require a staff to operate and maintain it and a power supply of probably 5000 kilowatts at least.

Such a laboratory would easily cost over $1,000,000 and the yearly operating expenses including the cost of power might run to $25,000 to $50,000.

The National Research Council expect to establish a high voltage laboratory in Ottawa in the future, and we are not justified in attempting to develop such a laboratory at McGill University.

Our present high voltage laboratory is equipped to develop 200,000 volts, 60 cycles but the capacity of the transformers is small and we have no accurate metering equipment. The present building is large enough to house a transformer capable of developing 350,000 volts or even 500,000 volts which would enable us to test apparatus for use on systems up to 132,000 volts. The necessary machinery and