Please read and send in as full a discussion as possible at earliest date

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ADVANCE PROOF—*(Subject to revision)*

A 2750-VOLT DIRECT CURRENT SYSTEM.

By A. H. Barringer.

(To be read before the Electrical Section, 9th December, 1909.)

The transmission of energy becomes a remarkably simple matter when direct current is employed, and given that the generators, rotary transformers, and apparatus could be brought to a sufficiently high voltage without the cost becoming prohibitive, and that they could be guaranteed as reasonably reliable and durable, then undoubtedly direct current would be an ideal agent. But the difficulties have proved so many, and the risks of installing such plants so formidable that, except for a few isolated instances, direct current systems of any size operating at over 1,000 volts are practically unknown. Moreover, the results obtained from the few in operation can scarcely be called inviting enough to encourage such enterprise in this field.

Before going into details of the particular system under review, it may be as well to give a brief description of the district which it is operating.

Twickenham is one of the southwestern suburbs of London. It is chiefly residential, as are the other towns along that part of the Thames, and, except for a few sawmills and the like, and the National Physical Laboratory, there are no power-users. This lack of day load is probably what influenced the designers to run D.C. in the first instance, for otherwise it is more than usually well-adapted to alternating current. It is so scattered that there has