THE INDUSTRIAL POWER COMMITTEE

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THE WORK of the American Institute of Electrical Engineers consists largely of the presentation and discussion of papers on:

1. New inventions and discoveries in the electrical field.
2. Compilation and review of the art in some particular line.
3. Description of installations.
4. Presentation of analytical studies of peculiar conditions and phenomena.
5. Subjects of general interest to electrical engineers.

The development of the electrical art has proceeded so rapidly that classification of the same in the Institute activities has not been made in all lines. The following outline prepared for use of the proposed International Electrical Congress is probably as good as any:

1. *Generation, Transmission and Distribution.* Central station and substation design, control and operation. Long-distance transmission of electric power.
2. *Apparatus Design.* Generators, motors and transformers. The rating of machinery.
3. *Electric Traction and Transportation.* City, surface and rapid-transit railways; interurban and trunk lines; electric vehicles, ship propulsion, mine railways, elevators and hoists.
4. *Electric Power for Industrial and Domestic Use.* Factories, mills, refrigeration, heating devices, etc.
5. *Lighting and Illumination.* Arc and incandescent lighting; the science and art of illumination.
6. *Protective Devices; Transients.* Switches, circuit breakers; condensers; electrostatics; disruptive phenomena; high-frequency phenomena.
7. *Electrochemistry and Electrometallurgy.* Electrolytic and metallurgical apparatus and processes.
8. *Telegraphy and Telephony.* (a) All communication of in-

telligence by the use of wires. (b) Electromagnetic waves and radio-telegraphy and telephony.

9. *Electrical Instruments and Electrical Measurements.* Switch-board, portable, standard and absolute instruments. Testing and standardization methods; absolute measurements.

10. *Central Station Economics.* Load factors, power factors, measurement of maximum demand and all problems affecting the economy of central stations; also rates, their regulation and legislation.

11. *Electrophysics.* Radioactivity; Röntgen rays; gas and vapor conduction; electron theory; constitution of matter, etc.

12. *Miscellaneous.* Such as history and literature of electrical engineering; symbols and nomenclature; engineering education and ethics.

As the activities in different lines have increased, technical committees have been appointed in the Institute to provide fields for the presentation and discussion of engineering papers on these different subjects. In some cases where the Institute has not provided this opportunity in time, separate organizations outside of it have been formed, and the number of these has now reached the point where the matter is deserving of very serious consideration. The multiplicity of organizations, with their proceedings and conventions, is involving the various memberships in such a considerable expense in time and money that any improvement in efficiency in co-ordinating such functions will be very warmly welcomed.

There is no field of activity in electrical work at the present time more important than that concerning the use of electric power in manufacturing industries. The rapid growth of this field and the wonderful possibilities for future development make it of great importance and interest to the consulting engineer, to the electrical manufacturer, and to the power companies, as well as to the industrial organizations themselves.

It is the object of the Industrial Power Committee to provide opportunity for such engineering activities in this field as is demanded by the situation, and by the desires of electrical engineers engaged in this work. That such a demand can be, at best, only supplied in part is self-evident.

Industrial power work from an engineering standpoint consists largely in the application of electric motors, controllers and auxiliary apparatus to the driving of the various machines which are used in the different industries, and involved in this,

of course, are the many questions concerning the supply of power.

The engineering work of the Industrial Power Committee may be divided into four more or less distinct parts.

1. Electric motors.
2. Controllers and auxiliary devices.
3. Conditions involved in motor application.
4. The application of electric motors to manufacturing processes.

A presentation of the subject of "electric motors" was made at the session the Midwinter Convention in New York in February; the subject of "conditions involved in motor application" was treated at the Cleveland Meeting; the subject of "controllers and auxiliary devices" is to be discussed at Pittsburgh, and a topical discussion on "the application of electric motors to manufacturing processes" is to be held at the Annual Convention in June.

Engineering work, properly understood, must have some direct relation with commercial activity, and the Industrial Power Committee desires to have its work of such a nature as to be of direct assistance to the various operating and commercial organizations who look to the Institute for the source of their engineering information. Such a development is, naturally, in process of growth and far from being in any final or complete form.

An attempt is being made during the present year to bring before the Institute, in the form of papers and discussions, a more or less complete survey of the present state of the art of motor application, and, like all first attempts, this must necessarily be somewhat imperfect and incomplete, and yet it is a beginning in a line of development which should become of very great value.

In addition, the Industrial Power Committee is arranging a series of lectures composed of lantern slides with a type-written copy of the lecture, to be kept at Institute headquarters in New York and to be available for any of the Institute Sections and Branches desiring the same.

It is hoped that future construction on this foundation will be along the line of an annual report by the Committee which would cover this subject more thoroughly and completely than can be done by papers and discussions, such reports to be in the nature of an engineering handbook on the subject and to

furnish such technical information as can be used, by those interested in the subject, as the foundation for developments in practical lines by the power companies, by the manufacturers and the various interested engineers, as well as a text book for use in educational institutions. Such a handbook, revised as occasion may require and kept up to date, would be a very valuable contribution by the Institute to the industry, and would be contributing in a very proper way to its function as an engineering society. It is with the object of laying the foundation for such work that the program for this year was laid out.

In the discussions at the meetings under the auspices of the Industrial Power Committee it is desired to have the result of experience presented as clearly and as forcibly as possible, and also to have divergent points of view brought out in such a way as to contribute to the understanding of the subject. This means that differences of opinion when properly expressed are highly desirable, and that cooperation between men engaged in various parts of this activity, in pooling their various and probably different points of view, is one of the desirable results.

The technical committees of the Institute at the present time have a very fitful and uneven activity and are probably but the forerunners of a future form of organization which will meet the natural demands of the membership as the future growth of the art and of the Institute necessitates. It must of course be the primary object of the membership of such a committee to supply such requirements and to assist in such progressive activity as conditions may justify.

The work which is being done by the Industrial Power Committee this year will, it is hoped, be but the foundation of a continued activity in the future which will finally develop material in such concrete form as will be of the most useful assistance to the profession and to the whole electrical and manufacturing industry.