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Form 34. 250-12-1-05.

No. 1052

# American Institute of Electrical Engineers,

95 LIBERTY STREET, NEW YORK.

APPLICATION FOR TRANSFER FROM THE GRADE OF ASSOCIATE TO THAT OF MEMBER.

2281.

Extracts from the Constitution, as Amended May 21st, 1901.

## ARTICLE II.

### MEMBERSHIP.

1. The corporate members of the INSTITUTE shall be designated as Members and Associates. Members and Associates shall be equally entitled to all of the rights and privileges of the INSTITUTE, except eligibility to the offices of President and Vice-President, which shall be limited to Members; and Members only shall be entitled to a diploma. There shall also be Honorary Members, who shall be entitled to all the rights and privileges of the INSTITUTE, except the right to vote for officers and hold office.

2. A **Member** shall have been an Associate, and at the time of his transfer to membership he shall be not less than twenty-seven years of age, and shall be:

*a*. A Professional Electrical Engineer; or

*b*. A Professor of Electrical Engineering; or

*c*. A person who has done important original work of recognized value to electrical science.

3. To be eligible to membership as a professional Electrical Engineer, the applicant shall have been in the active practice of his profession for at least five years: he shall have had responsible charge of work for at least two years, and shall be qualified to design as well as direct electrical engineering works. Graduation from a School of Engineering of recognized standing shall be considered the equivalent of one year's active practice.

4. To be eligible to membership as Professor of Electrical Engineering, the applicant shall have been in responsible charge of a course of Electrical Engineering at a college or technical school of recognized standing for a period of at least two years.

5. An **Associate** shall be a person who is interested in or connected with the study or application of electricity.

## ARTICLE III.

3. An application for transfer from the grade of Associate to that of Member shall be made in a form prescribed by the Board of Directors, and shall embody a full record of the general technical education of the candidate and of his professional career. It shall be signed by the applicant, and shall refer to at least five members by whom he is personally known. Each of these references shall be requested by the Secretary to fill out a prescribed confidential form, to be addressed to the Board of Directors. No such application for transfer shall be considered until at least five favorable replies have been received. The Board of Directors, or the Board of Examiners, in the event of failure of replies, or receipt of unfavorable replies, may call upon the applicant to furnish additional names. Should an applicant for transfer certify that he is not personally known by five members, the Board of Examiners may accept references for the deficiency, to professional engineers of standing.

## ARTICLE IV.

### DUES.

1. The entrance fee, payable on admission to the INSTITUTE, shall be five (5) dollars. A fee of ten (10) dollars shall be paid on transfer to the grade of Member, which shall include the fee for a diploma.

2. The Annual dues shall be fifteen (15) dollars for members and ten (10) dollars for Associates.

3. The annual dues of Members and Associates residing in foreign countries other than Canada and Mexico, shall be ten (10) and five (5) dollars, respectively.

## REFERENCES.

See Article III. Section 3.

As references occasionally fail to reply to inquiries, thus delaying action, applicants are requested to send names of more than five full members if possible.

Dr. Samuel Sheldon 192 Fifth Ave. New York

Bion J. Arnold 1514 Marquette Bldg. Chicago

B.A.Behrend Bullock Elec. Co. Cincinnati O.

Prof. D.C.Jackson Madison Wis.

Wm. B. Jackson Madison Wis.

C.S.Reno 610 Bayaller St. Cincinnati

## SPECIAL INSTRUCTIONS TO APPLICANT.

Statements of fact responsive to the following inquiries, are desired for the information of the Board of Directors and Board of Examiners.

These statements may be required to be verified by the oath of the applicant.

When required to give references to "Professional Engineers of Standing," preference should be given to full members of the American Institute of Civil Engineers, the American Society of Mechanical Engineers, American Institute of Mining Engineers, the Society of Naval Architects and Marine Engineers, the Canadian Society of Civil Engineers, all of America, or the Institution of Civil Engineers, the Institution of Mechanical Engineers, and the Institution of Electrical Engineers of Great Britain.

1. What is your full name? Give date and place of birth.
2. Please state under which one or more of clauses *a*, *b*, *c* of Section 2, Article II, quoted above, in your opinion, you are eligible for transfer to membership.
3. What is your general and technical education; where and how acquired?
4. (*a*) State in full the nature of the work done by you as a professional electrical engineer, during a period of five years or more, noting especially the work of which you have had responsible charge. Or,

   (*b*) State in what college or technical school of recognized standing you have had responsible charge for two years or more of a course of electrical engineering. Or,

   (*c*) State fully, instances of important original work of recognized value to electrical science which you have done.

State fully any facts you may deem likely to assist in determining the question or questions here under inquiry.

*Name in full* Arthur William Berresford -- Born in Brooklyn, N.Y., July 9th, 1872.

*Present Address* Home 348 Prospect Ave. ) Milwaukee, Wisconsin.
Business c/o The Cutler-Hammer Mfg. Co.)

*Occupation* General Manager The Cutler-Hammer Mfg. Co. Eligible under Clause "a".

**This Record Must be Signed by Applicant with Pen and Ink.**

Milwaukee, Wis., July 21, 1906.

My technical education was largely along electrical lines, and was obtained at the Brooklyn Polytechnic Institute and Cornell University. I graduated from the former Institution in June of 1892, with degree of Bachelor of Science in Electricity, and entered the Senior Class at Cornell the following September. I took the electrical course at Cornell and graduated in June 1893, with the degree of Mechanical Engineer in Electricity.

On graduation, I entered the employ of the Brooklyn City Railroad Co., as Electrician, which continued during a period of approximately one year, in which time I was in touch with all branches of their electrical work, and actually worked in all departments, except that of power houses. During this period I was not at any time in responsible charge of work.

On leaving the Brooklyn City Railroad Co., I entered the employ of H.B.Coho & Co., in sales and installation work, and also carried on certain experimental work of private nature.

In the Fall of 1895, I entered the employ of the Riker Electric Motor Co., as designer, remaining in this position until the Spring of 1896, when I entered the employ of the Ward Leonard Electric Co., in charge of design and testing work. In this position, I was responsible for the detailed design of the apparatus, and for the testing of all material shipped. The business of this Company consisted then, as it does today, in the manufacture of rheostats and electric controlling devices, rheostats, however, constituting the larger portion of their business.

In the Spring of 1898, and in connection with two others, I purchased from Receiver the assets of the Iron Clad Rheostat Co. of Westfield, N.J., and organized the Iron Clad Resistance Co., of which I was Vice-President. The business of this Company was of the same character as that of the Ward Leonard Electric Co., and my position was essentially the same, with the exception that I was directly responsible for the manufacture of the entire output.

In the late Summer of 1900, this concern was sold to The Cutler-Hammer Mfg. Co. of Milwaukee, Wis., and I entered the employ of the latter Company in the Engineering Department. In the Spring of 1901, I was made Superintendent, and later was made Secretary of the Company, and still later General Manager, which position I now hold. During the last five years, I have been directly in charge of and responsible for the entire output of this Company, which is of extremely varied nature. The apparatus manufactured consists of electric controlling devices, particularly for power service, and covers practically the entire field of application of electric power, and the problems which present themselves require a thorough knowledge and experience with power translating apparatus and its installation and design.





The Company in question is the largest in this country, and probably the largest in the world, manufacturing this class of apparatus exclusively, and at the present time employs between 500 and 600 men. In many of the problems met with, the rheostat as such plays merely an incidental part, and the knowledge, application and devising of means for meeting the problems form by far the more important part.

While not presenting as many difficulties of design or construction as other types of apparatus, I may remark as an instance of apparatus manufactured, two large motor starting rheostats supplied the Carnegie Steel Co., which, while nominally for 1500 HP 220 V. motors, were actually of 2200 HP capacity. I instance this apparatus to show that the problems presented are of some magnitude, and are not those ordinarily considered as being embodied under the general heading of rheostat work. We are at the present time working on the problem of control of 4000 HP reversing motors for the driving of the rolls themselves. Further lines of manufacture include specialized forms of control for mill motors in steel mill work, and specialized apparatus for the control of motors under any and all conditions of operation, both direct and alternating current.

It is my definite belief that the present extension of the electric motor to various applications in the trade has been greatly furthered by the provision of proper controlling apparatus, in the absence of which, however well designed or constructed, the electric motor could not have been used.

For the past five years all such apparatus manufactured by this Company has been subject to my control, and in many instances has been designed directly under my supervision, and I feel that the knowledge and experience which I possess, together with the work done under my direction in the general field of application of electrical power, entitle me to admission to full membership in the American Institute of Electrical Engineers.

I have entered into this more or less extended explanation of the trade relations of the Company with which I am connected, and my connection therewith, as I doubt whether applications for transfer to full membership have previously been made by other parties engaged in this line of work. Comparatively speaking, the number of control engineers or experts is small, which probably accounts for this condition.

I respectfully submit the above statement of my qualifications, and sincerely trust that it may receive favorable consideration.

Arthur William Berresford.