

★ NATIONAL
Electric Light
ASSOCIATION.

TWENTIETH CONVENTION.

NIAGARA FALLS, N. Y.
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of credit, a good deal of strength, to that. The judges of the courts—those who are administering the law—know nothing about these mechanical contrivances—of course, don't know much about the scientific—they do not have to know about it scientifically; and there is that ignorance existing, which is present in our legislatures, present in every court. And so, if we who are in this business start out admitting that there cannot be a theft of this thing, that there is no law to punish it, and, therefore, we want to have a new law made for it, don't you see how far we are going? If we were supplying any other product, it would be fully understood, and an indictment under the common law for larceny would thoroughly lie.

THE PRESIDENT: It has been moved and seconded that the chair appoint a committee of three to prepare a report upon this subject, and draft a bill that would be uniform and would apply to all the different states; and the mover of the resolution also suggests that, as soon as that report be drafted, it be forwarded to each of the members of the association. Is it your pleasure that the motion be declared carried?

Carried.

THE PRESIDENT: The convention ordered this morning that the report of the Committee on Standard Electrical Rules, Capt. William Brophy, chairman, should be presented this afternoon. I now call upon Captain Brophy, as chairman of the committee, to present his report.

REPORT OF COMMITTEE ON STANDARD ELECTRICAL RULES

*Mr. President and Members of the National Electric
Light Association:*

At the nineteenth convention of this association, held in New York city, a committee, to be known as the Committee on Standard Electrical Rules, consisting of five members, was appointed, with instructions to select one of its members, or some other person, to represent the National Electric Light Association in the National Conference on Standard Electrical Rules.

This committee was the successor of the one appointed at the fourteenth convention of this association, known as the Committee on Rules for Safe Wiring, and subsequently known as the Committee on Standard Rules for Electrical Construction and Operation, which was discharged on its own recommendation at the same time. This last named committee has labored faithfully since its organization to bring about the much desired end, the establishment of a uniform standard set of electrical rules governing all electrical installations, to be enforced by the five insurance companies and municipal inspection bureaus. This task was no easy one for this committee. Its efforts met with fierce opposition from some, and indifference on the part of others. It received some encouragement from the press at times, and no small opposition at others. Some portions of the insurance

interests looked upon it with favor, but a large portion opposed its aims and purposes. The principal obstacles to be overcome were :

Indifference on the part of those most deeply interested—those engaged in the electrical industries. They somehow believed that the fire underwriters of the country were more powerful than the municipal, state, or even the United States, governments; that any law, edict or rule issued by them, whether right or wrong, could be enforced and must be obeyed. For the benefit of this class, your committee must say that such is not the case. The fire underwriters are the receiving and disbursing agents of nearly the whole of the people of the country, receiving their money as a consideration for indemnity against total loss by fire. The larger proportion of the money they receive is returned as partial compensation for the losses sustained; the balance pays the expenses of the business and a varying amount of profit to the holders of stock and the policy-holders of mutual insurance companies. The greater the care in selecting fire risks, and the more careful the supervision of them while insured, the greater the profit.

The next obstacle to overcome, was the prejudice of the average underwriter against electricity when introduced into the property he insured. To those who witnessed the methods adopted by those who installed the first electric light, and know something of the losses sustained by the insurers and insured, this prejudice is excusable. Up to that time, electricity had proved itself a useful and harmless servant, the only evidence of its ability to produce heat or flame being offered at the contact points of the telegraph relay and key; but when this very small spark was increased at the carbon points to such size and

intensity as to rival in brilliancy the sun's rays, its power for good and evil was wonderfully increased. Those who could keep under perfect control the feeble battery current, did not possess the necessary appliances or knowledge to keep this new form of electrical energy under proper restraint, while the fire underwriters paid heavy tribute to it in the form of burnt offerings and in the shape of indemnity to the policy-holders.

Under such circumstances, who could blame these powerful bodies for taking alarm and looking upon the new candidate for public approval with disfavor? They were between two fires, as it were--those caused by electricity improperly harnessed, and that of enthusiastic admiration kindled in the breasts of their policy-holders for the electric light; they would have it, even if it did increase the fire hazard. How to get out of this dilemma was the burning question. They did not want to abandon a formerly profitable part of their business, but feared they must. Two remedies were tried: First, increased insurance rates was the penalty exacted for the introduction of electric lights. This plan proved ineffectual, because it did not prevent losses in excess of premium rates, and it opened up a new field for the illegitimate underwriter, who preys on the insurer and insured alike in the end. The second remedy proved more effective. They called to their aid some of those who were supposed to know how to lead this new and unknown force along the straight and narrow path designed for it, and not permit it to wander into their domain and change fat dividends to heavy assessments. Such men were scarce, and most, if not all, of those engaged were obliged to learn by experience the best methods of procedure; the same

can be said of those engaged in the electrical business. The acquisition of such experience, up to a few years ago, proved very costly to the fire underwriters and others as well.

Gradually, fire insurance associations appointed one or more inspectors to examine the electric light wires, lamps and fixtures installed in their territory, and to enforce certain rules and requirements, generally made by themselves. With the rapid advance of the electrical industries, changes in these were inevitable, but lack of uniformity proved to be a crying evil. The best and most reasonable requirements were formulated in those sections of the country where the electric light had found a foothold earliest. Most of the inspectors, instead of profiting by the experience of those longest in the business, and adopting the rules formulated by them, insisted on issuing productions of their own, so that the so-called insurance rules differed as widely as the excise laws of Maine and New York. Some sections of the country were fortunate enough to have men who were empowered to make rules and enforce them; whose elevation to such position did not make them dizzy, and cause them to issue impractical requirements, the enforcement of which did not always serve any good purpose, but made life a burden to those who were so unfortunate as to come under their jurisdiction, whether manufacturers, contractors or producers of electrical energy. But other sections were not so fortunate. Among all the burdens that those in the electrical business have had to bear in the past, the whims and caprices of the authors of insurance rules have not been the least.

The loss of time and money, caused by conflicting requirements, became so great in time that a movement was inaugurated by this association for securing uni-

formity of rules—a codification of the best, and repeal of the productions of cranks and impracticals. This task was accomplished by your former committee, the result of their labors approved, and the first national code issued by this association. It was also adopted by the insurance associations, who thus recognized the good work performed. After the issue of this national code, it was thought that all the troubles here described were ended. Such, however, was not the case, for while the best representative men of the fire insurance associations agreed that the electrical engineers or electric light superintendents were the proper ones to formulate rules and requirements, and the insurance associations should enforce them, there were others holding subordinate positions who could not bear to have this sentiment put in practice. As a result of such feeling, an organization arose, known as The Underwriters' National Electric Association, which has claimed the sole right to issue new or amend the original rules first issued by this association, and has, in the past, insisted that the electric and allied interests should have no voice therein. As time rolled by, and the organization increased in numbers, this sentiment changed somewhat, due to the influence of broad-minded, practical men, who are members of it, and to the efforts of your former and present committees, and last, but not least, to those of the National Conference on Electrical Rules, which was organized through the untiring efforts of the chairman of the Committee on Standard Rules for Electrical Construction and Operation and his associates.

As a result of our combined efforts, the last codification of, and amendments to, the national code is the result of the combined efforts of the National Conference on Standard Electrical Rules and the Underwriters' National Electric Association.

The right to do this is what your committees have contended for in the past, and have finally obtained. Your present Committee on Standard Electrical Rules selected its chairman to represent you in the National Conference on Standard Electrical Rules, which was organized at a meeting held in the city of New York, on March 18th and 19th, 1896, consisting of representatives of insurance, electrical and kindred interests, from the following organizations: National Electric Light Association, American Institute of Electrical Engineers, American Street Railway Association, National Board of Fire Underwriters, American Institute of Architects, International Association of Fire Engineers, Underwriters' National Electric Association, Factory Mutual Insurance Association, American Society of Mechanical Engineers, Western Union Telegraph Company, Postal Telegraph Company, American Bell Telephone Company, General Electric Company and Westinghouse Electric and Manufacturing Company. The complete list of official delegates and organizations to whom invitations were extended, can be found in the report of the committee presented at the last convention, and published in the last volume of the proceedings of this association.

That body appointed a committee on code, consisting of seven members, one of whom was your representative. To this committee was assigned the task of amending and codifying Standard Electrical Rules. At the time of the last meeting of the National Conference upon Standard Electrical Rules, a large amount of work was done by representatives of the various electrical, insurance, architectural and allied interests, tending toward the adoption of the one single standard code of rules. A pamphlet had been prepared embracing the various codes used most extensively in

this country and abroad, and, after these had been in substance considered, and many changes, omissions and additions suggested, it was deemed desirable that the results of the two days' careful discussion should be handed over to a special committee of seven, with the president a member *ex-officio*, which committee should draft a code based upon the lines suggested, and then refer the same back to the conference for its approval.

Since the meeting of the conference, the committee has, by meetings and correspondence, carefully taken up the work assigned to it. The most important meetings were held October 16th and 17th, 1896, and December 11th and 12th, 1896. Between these two dates, *i. e.*, on December 8th and 9th, the annual meeting of the Underwriters' National Electric Association was held, and at the October meeting of the Code Committee, it was decided that the committee, through one of its members (Mr. Merrill), should submit the draft already prepared by them to the Underwriters' National Electric Association, to secure the benefit of their criticism and suggestions, and with a view of insuring a hearty co-operation on their part. It was so arranged that a joint meeting should be held, of our Committee of the Code and a committee from their association, to facilitate the preparation of the final draft of the code. This meeting, held in December, 1896, was very successful, and it was jointly agreed by the two committees: (1) That the title of the new set of rules was to be "The National Electrical Code;" (2) that the National Board of Fire Underwriters, in printing the code, should give on the inside of the cover due credit to the National Conference for its work, and place upon the cover the names of all the associations forming the National Conference, as fast as these bodies gave their indorsement of the code;

(3) that, as far as possible, the code should be left in the form as then presented, save that the classification as recommended be tentatively adopted, and, after being set up by the printer, be resubmitted in dummy form for final consideration by the members of both committees.

The members of the Code Committee of the National Conference, having met in New York, May 19th, 1897, passed the following resolutions:

Resolved, That each delegate who attended the National Conference on Standard Electrical Rules be sent a copy of the Standard Electrical Code, stating that said code had met with the approval of the Code Committee of the National Conference and the Code Committee of the Underwriters' National Electric Association, and stating the belief of our committee that there was no necessity for calling the conference together again as a body, entailing, as it would, a very considerable sacrifice of time and money, and requesting their immediate reply if they acquiesce in this recommendation and approve of the report submitted by the committee and by the president, secretary and treasurer of the conference itself. In the event of their objecting, and desiring that the conference be called together as a body to receive the committee's report, answer is to be made within ten days, or their opinion is to be considered as favorable, and the code reports published through the press by the Code Committee, and each delegate represented at the conference requested to bring same formally before his association for approval.

A meeting of the committee was held in Boston on the 5th instant, at which its previous action was ratified, and the code, as a whole, unanimously adopted.

The National Electric Light Association was the first to adopt and issue a national standard code of rules, and if it now adopts the new codification of them, it will be indorsing, not only the unanimous findings of its committee, but the unanimous action of the Code Committee of the National Conference on Electrical Rules, which conference was organized under the auspices of the association; and, furthermore, it will be the first body represented in the National Conference to do so, and your committee earnestly recommends that you give your approval.

Respectfully submitted,

WM. BROPHY, Chairman.

DISCUSSION

CAPTAIN BROPHY: Mr. President, I believe I was one of the original members of the first conference, held at Cape May, to bring about this result. I have been a member of this committee from that time until now. I have labored faithfully to bring about this end. Sometimes, as I have described here, the task seemed almost hopeless, but I never was ready to yield the right of the men engaged in the electrical business to have their say in the formation of rules under which they were obliged to install their apparatus. As I said before, I have given both time and means to bring about this end. I hope to see it consummated; then I shall be satisfied, and shall consider my work done.

MR. AYER: As a member of this committee, I have been associated with Captain Brophy for a number of years, and there is no one that knows bet-

ter than I the immense amount of labor that he has devoted to this work. I realize, as all the members of the association do, the attitude of the insurance interests, the adoption of rules by those interests, their refusal to recognize the rules of this association, and our repeated efforts to bring about some sort of harmony, and feel now that we have not only done that, but that we have associated with us in indorsing the National Code of Rules the American Institute of Electrical Engineers, a body that has heretofore refused to consider this question, for the reason that they preferred to keep out of all commercial matters and keep the Institute free from any association with commercial factors whatever, as is the case in almost all institutions of a similar character. But they have realized the importance of the subject, and have given their influence to bring about this common result, because they felt that it was necessary for the development of practical electrical work on proper lines that every effort, every power, every influence, should be brought to bear to bring about a universally standard code, and to avoid the unlimited amount of friction which had developed in the past. In addition to that, there is the National Board of Fire Underwriters, the American Institute of Architects, the International Association of Fire Underwriters, the Underwriters' National Electric Association, the Factory Mutual—covering all of the important insurance interests—the American Street Railway Association, of course, as well,—when all that has been accomplished is taken into consideration, we realize the value of the work done. And I want to say right here—and I cannot say it too strongly, I want to repeat it—that Captain Brophy is the man that has done it. We have all done a little pushing and a

little helping, but he has been the leader ; it has been his baby from the beginning, until now he has got a well developed child. The rules are long. They are better than those we adopted at our last revision of the rules. They are not just what we want in every particular,—I do not think we shall ever get them so—but I think we can take no chances in unanimously adopting the recommendation of the chairman of this committee, to be the first to indorse the national code.

MR. SEELY : Mr. President, I should like to ask Captain Brophy whether the municipalities have not adopted these rules. In the city of New York, the fire department has an inspector of wiring, and I think he is present here ; I should like to hear from him—Mr. Henderson.

THE PRESIDENT : We should be glad to hear from Mr. Henderson, if he is present.

MR. CARNES : Mr. President, I should like to move the adoption of the report.

CAPTAIN BROPHY : I should like to answer Mr. Seely, that among other things I have tried to do in bringing this about is to inaugurate an association of municipal inspectors, so that they would act with every one else and have the thing harmonious. That will be consummated within a very short time.

THE PRESIDENT : It has been moved and seconded that the report of the Committee on Standard Electrical Rules be received, and the suggestions therein adopted. I might say that this is one of the things that, through the energy of our chairman of this committee, has been brought to a successful conclusion this year. It has not been the work of a year, however. From the very commencement, as stated by Captain Brophy, this work has been carried on by

him and by other energetic members of our association, from time to time, under the greatest possible difficulties. At first, the fire insurance parties would not receive any suggestions at all from the electric companies. They made their own rules, and they were, like the laws of the Medes and Persians, unalterable. But to-day we see that this association, through the chairman of its committee, has been successful, not only in having the rules adopted that were first promulgated by this association, but that all the other leading bodies of the country that are interested in such matters were willing to meet in a general conference to discuss these rules, and I think that it is with a great deal of gratification that we may assure ourselves that, if this resolution is passed to-day, we shall be the first to indorse the codification of the rules as agreed upon by all these various bodies, as we were the first to start the agitation. Is it your pleasure that the National Electric Light Association be the first to indorse this codification.

MR. CARNES: I should like to ask Captain Brophy—for information—if the adoption of these rules by the National Board of Underwriters does not commit and hold them, or does that license them to make additions hereafter, as they may see fit, for their inspectors, without the consent of this association? They have no such right, have they?

CAPTAIN BROPHY: No, sir; they have now conceded the right of others.

MR. CARNES: Why I ask the question,—we are very much annoyed in Tennessee by these little slips of paper issued by some unrecognized authority; and the more ignorant the inspector with whom you have to deal, the more annoying become these little unauthorized slips, until it requires more patience than

most of us have to submit to it. I am now rather at war with the Board of Underwriters because I declined to recognize them.

CAPTAIN BROPHY: I will say that hereafter you can return the slips, and hold up this code as the one that you are called on to work under, and nothing else.

THE PRESIDENT: Gentlemen, are you ready for the question?

MR. BEAN: Mr. President, I would suggest that you ask for a rising vote on that resolution.

THE PRESIDENT: At the suggestion of Mr. W. Worth Bean, I would ask all in favor of adopting the resolution to indicate it by rising to their feet.

THE PRESIDENT: I declare the motion carried unanimously. (Applause.)

THE PRESIDENT: The next order on the programme is a paper on municipal lighting, by Mr. W. Worth Bean, of St. Joseph, Michigan. I will call upon Mr. Bean to read his paper.