COORDINATION ACTIVITIES WITH THE EDISON ELECTRIC INSTITUTE

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1. GENERAL

1.01 This section presents information on The Edison Electric Institute. The aims and organization of The Edison Electric Institute are outlined in this section. Also included are several reports of the Joint General Committee.

1.02 This section is reissued to reestablish it as a current Bell System Practice. This section has been out of print and this revision restores it as an available practice. Minor editorial changes have been made in the text.

1.03 The organized cooperative work now being carried on with the electric light and power companies through The Edison Electric Institute had its beginning in arrangements established between the Bell System and the National Electric Light Association (NELA) in 1921. The NELA was dissolved in 1933. The Edison Electric Institute was organized the same year and later indicated its desire to continue the cooperative work. The original cooperative work has therefore proceeded without important interruption since 1921.

1.04 The reports of the Joint General Committee of the NELA and Bell Telephone System, with only minor editorial changes, were reissued as "Reports of the Joint General Committee of The Edison Electric Institute and Bell Telephone System" in 1945 under a single cover. That document originally reprinted verbatim three input reports. Two of these reports, concerned with inductive coordination, have since been reprinted in Section 873-800-061. The third report ("Principles and Practices for Joint Use of Wood Poles by Supply and Communications Companies") is reprinted in its entirety in Part 5 of this section.

2. THE EDISON ELECTRIC INSTITUTE

2.01 The Edison Electric Institute was organized in 1933 with the following objectives:

(a) "The advancement in the public service of the art of producing, transmitting, and distributing electricity and the promotion of scientific research in such field."

(b) "The ascertainment and availability to the members and the public of factual information, data, and statistics relating to the electric industry."

(c) "To aid its operating company members to generate and sell electric energy at the lowest possible price commensurate with safe and adequate service, giving due regard to the interests of consumer, investor, and employee."

2.02 The officers of The Edison Electric Institute consist of a President, several Vice-Presidents, a Managing Director, a Treasurer, and a Secretary. The Managing Director is in charge of the staff which is maintained by the Institute in a permanent office in Washington, D. C. In addition to the officers, there is a governing body known as the Board of Directors, which has charge of the general activities and business of the Institute. The Board of Directors determines what other committees shall be created and defines the scope of authority. The membership of such committees is appointed by the President. The technical work is carried on by the technical committees.

2. Part of the staff of the Institute in Washington, D. C. consists of a group of engineers (under a Director of Engineering) whose duties include consideration of inductive and structural coordination matters. This group takes an active part in the joint work carried on by The Edison Electric Institute and the Bell System, as described later. The advice and services of this group are also available to member companies of The Edison Electric Institute on coordination as well as other matters.

3. ORGANIZATION FOR JOINT WORK WITH THE EDISON ELECTRIC INSTITUTE

3.01 The Joint General Committee of The Edison Electric Institute and Bell Telephone System initially was formed to continue the work formerly carried on by the Joint General Committee of the NELA and the Bell System. In a consolidation of joint activities in October, 1948, this Joint General Committee was dissolved and its active functions assumed by its former subsidiary body, the Joint Committee on Plant Coordination.

3.02 The Joint Committee on Plant Coordination of The Edison Electric Institute and Bell Telephone System is charged with two areas of responsibility:

(a) Developing information on induction and structural coordination matters

(b) Making information and recommendations directly available to the operating power and telephone companies.

3.03 The Joint Committee on Plant Coordination, when active, is to be made up of personnel in a position to secure the review and approval of respective organizations of the results of the committee work. The Chairman of the Transmission and Distribution Committee of The Edison Electric Institute is an ex-officio member of this committee. The detailed work of this committee is assigned to subcommittees who are responsible for organizing and carrying forward the specific phases of the work covered by their assignments. Subcommittees have issued reports on "Mutual Assistance in General Emergency Situations Affecting Both Power and Telephone Service," "Buried Power and Telephone Distribution Systems—Analysis of Primary Cable Fault Tests and Evaluation of Experiences With Random Separation," and "Joint Use of Poles in Rural Areas."

3.04 While the principal objectives of the joint committees are to work out general cooperative methods and develop needed technical information, the advice of these committees can be secured in specific situations if this is found desirable. The Network Services Department can arrange for this, if occasion arises, in connection with any case referred to it by an operating telephone company.

4. OTHER COOPERATIVE ARRANGEMENTS WITH THE EDISON ELECTRIC INSTITUTE

4.01 In addition to the formal arrangements described above, there is close cooperation between the American Telephone and Telegraph Company and The Edison Electric Institute staff in Washington, D. C. in connection with both the technical and operating phases of coordination. Through informal contacts, as well as through the formal organization, the possibility for difference of opinion in the field regarding basic information is minimized. In some operating problems, The Edison Electric Institute is invited to assist in the field studies by the operating power companies in much the same way as the American Telephone and Telegraph Company is invited to assist by the Associated Companies. Both The Edison Electric Institute and the American Telephone and Telegraph Company participate with other organizations in the work of the American National Standards Institute, which includes preparation of the National Electrical Safety Code and the National Electrical Code.

5. REPORTS OF JOINT GENERAL COMMITTEE OF THE EDISON ELECTRIC INSTITUTE AND BELL TELEPHONE SYSTEM

REPORTS OF

JOINT GENERAL COMMITTEE

OF

EDISON ELECTRIC INSTITUTE

AND

BELL TELEPHONE SYSTEM

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OFFICE OF
JOINT GENERAL COMMITTEE
OF
EDISON ELECTRIC INSTITUTE
AND BELL TELEPHONE SYSTEM
New York, July 9, 1945.

MEMBER COMPANIES OF E. E. I.
ASSOCIATED COMPANIES OF BELL SYSTEM:

For a number of years, the following reports of the Joint General Committee of the NELA and Bell Telephone System have formed a satisfactory basis for the coordination of the electrical facilities of electric supply companies and communication facilities of the Bell System.

> Principles and Practices for the Inductive Coordination of Supply and Signal System—December 9, 1922.*
>
> Principles and Practices for the Joint Use of Wood Poles of Supply and Communication Companies—February 15, 1926.
>
> Allocation of Costs Between Supply and Communication Companies—October 15, 1926.*

The supply of copies of the original issue of these reports has been exhausted and, accordingly, they have been reprinted. In this reissue, the three reports have been included under a single cover. A few editorial changes have been made which involve no change in substance.

*See Section 873-800-061.

H. B. Bryans

W. H. Sammis

E. C. Stone

Edison Electric Institute Representatives

M. R. Sullivan

K. S. McHugh

Bell System Representatives

JOINT GENERAL COMMITTEE

FOREWORD

The principles and practices which are now being reissued under a single cover have, during the past two decades, contributed greatly to the successful operations of the power and telephone industries and, because they have promoted cooperation between these industries, they have benefited the general public. It seems appropriate in connection with this reissue to review the development of these principles and practices; however, for brevity, omitting mention of all but the original organization.

Previous to 1921, structural and inductive interference problems were giving rise to increasing numbers of controversies between Bell Telephone Companies and Power Companies throughout the country. Early in 1921, therefore, a group of power and telephone personnel met to discuss the possibilities of a basis for an engineering solution of the problems concerned. Mr. Owen D. Young presided at that meeting and the Joint General Committee of the National Electric Light Association and Bell Telephone System was formed with the following membership:

Messrs.

O. D. Young, Chairman,
General Electric Company

R. H. Ballard,
Southern California Edison Company

M. R. Bump,
H. L. Doherty & Company

H. M. Byllesby, Represented by R. F. Pack,
H. M. Byllesby & Company

J. J. Carty,
American Telephone and Telegraph Company

Bancroft Gherardi,
American Telephone and Telegraph Company

E. K. Hall,
American Telephone and Telegraph Company

L. H. Kinnard,
The Bell Telephone Company of Pennsylvania

Martin J. Insull,
Middle West Utilities Company

Robert Lindsay,
Cleveland Electric Illuminating Company

Ben. S. Read,
The Mountain States Telephone and Telegraph Company

Paul Spencer,
United Gas Improvement Company

Guy E. Tripp,
Westinghouse Electric & Manufacturing Company

M. H. Alyesworth, Secretary,
National Electric Light Association.

Messrs. Bump, Pack, and Gherardi were designated as an Engineering Subcommittee representing both interests, with instructions to classify the two types of situations in which engineering or technical conflicts were arising. They selected a committee of engineers whose instructions were to proceed with a classification of the types of problems concerned under two divisions: (a) those for which a standard had been accepted by both parties, and (b) those for which there were no existing standards. Their further instructions were to approach the various problems in the broadest possible spirit of co-operation, with double objectives of the removal of causes of friction and the early development of mutually satisfactory practices. This committee of engineers consisted of Messrs. H. P. Charlesworth, S. P. Grace, H. S. Osborne, and H. S. Warren, representing the Bell Telephone System, and Messrs. W. J. Canada, A. E. Silver, and F. H. Lane, representing the NELA. Mr. H. L. Wills later succeeded Mr. Canada.

The Engineering Subcommittee, in its first report, found that the National Electrical Safety Code provided an acceptable guide to practice for problems involving crossings, conflicting construction, and jointly occupied poles, and recommended, as to parallel construction, general principles pointing the way to the satisfactory solution of specific cases. After further work, the subcommittee prepared the more comprehensive reports which are generally known as the Principles and Practices and which, with minor editorial changes, are reproduced in this report.

Note: See below and Section 873-800-061.

Early in its work, the Engineering Subcommittee found there was need for mutually acceptable technical data to aid in the solution of both electrical and structural coordination problems. Accordingly, the Joint Subcommittee on Development and Research was organized in 1923. Its factual reports have greatly facilitated the solution of coordination problems by the power and telephone companies and have enabled them to arrive at sound engineering answers to the new problems which have accompanied advances in the power and communication arts.

PRINCIPLES AND PRACTICES

FOR THE

JOINT USE OF WOOD POLES BY SUPPLY

AND COMMUNICATIONS COMPANIES

INTRODUCTORY

These principles and practices cover the general engineering and operating features involved in the joint use of wood poles and are intended to be in conformity with the broad principles heretofore mutually agreed upon by the Joint General Committee.

The principles set forth in a broad and general manner the basic fundamentals involved in the intercompany relationships on joint use of poles. The two groups of utilities recognize their responsibility

to serve the public safely, adequately, and economically. It is, therefore, essential that any arrangement entered into be such as to best facilitate the present and future rendering of both classes of service.

Practices are recommendations which cover in a more specific way the general ground included in the principles, and are based on an analysis of practical operating experience with joint use of poles. It is recommended that they be used as a guide in the preparation of new agreements for the joint use of poles and in the modification of existing agreements where it is desired by either party to bring such existing agreements into conformity with these principles and practices.

PRINCIPLES

1. Duties

Each party should:

(a) Be the judge of the quality and requirements of its own service, including the character and design of its own facilities.

(b) Provide and maintain facilities adequate to meet the service requirements, including such future modifications in these facilities as changing conditions indicate to be necessary and proper.

(c) Determine the character of its own circuits and structures to be placed or continued in joint use, and determine the character of the circuits and structures of others with which it will enter into or continue in joint use.

(d) Cooperate with the other party so that in carrying out the foregoing duties, proper consideration will be given to the mutual problems which may arise, and so that the parties can jointly determine the best engineering solution in situations where the facilities of both are involved.

2. Establishing, Maintaining, and Terminating Joint Use

Joint consideration by both parties of safety, service, economy, convenience, and the trend toward higher distribution voltages should determine:

(a) When joint use should be employed, taking into account present conditions and those which can be reasonably foreseen, including the possibility of reverting to separate lines.

(b) The best engineering solution for the coordinated arrangement and design of facilities in joint use.

(c) The administrative methods for entering into, carrying on, and terminating joint use.

3. Local Contact

All parties at interest in a locality should maintain close cooperation and each notify the other of any intent to build new lines or to reconstruct existing lines as an aid to orderly planning and the utilization of joint use, where advantageous.

4. Contracts

General contracts for joint use, if entered into, should define conditions for entering into joint use, operating in joint use, terminating joint use, and a practical procedure for modifying facilities in joint use from time to time.

In either general or specific contracts, any provisions treating the character of circuits on poles for joint use should be so drawn as not to restrict changes in the character of the circuits of either party, except that it should be recognized that such changes may involve the modification or abandonment of joint use in specific cases.

Each specific instance of contemplated initial or modified joint use, whether embracing a single pole, a group of poles, or an entire line should be considered, as to acceptance, as a separate and distinct case, with the right of refusal by either party and, if accepted, should be in writing.

Joint use now exists and gives satisfaction in many localities under one of two general plans, one a "Space Rental Plan" and the other a "Joint Ownership Plan." In addition, joint use is sometimes

erected on an "Attachment" or "Contact Rental" basis and sometimes under a "Permanent Rights" agreement, which is a modification of the "Joint Ownership Plan." The Joint Ownership Plan and the Space Rental Plan have, in general, proved the more simple and convenient working arrangements.

5. Costs

The allocation of costs between the parties at interest should be prima facie, reasonable, and equitable, taking into account all factors involved.

6. Legal Considerations

Legal questions, including the sufficiency of right-of-way grants held by the parties and the protection of title or property of both parties in the case of mortgages, sales, mergers, or consolidations entered into by either party, should be given due consideration in the preparation of contracts.

In any terms of the contract dealing with liability for personal or property damage, care should be t[illegible]n that such terms are not disadvantageous to e[illegible]r party.

7. Periodical Readjustment of Contracts

Provision should be made for review and revision, from time to time, of those stipulations of a contract, particularly of items of expense to be apportioned between the parties, such as the cost of poles and rentals which are dependent on material and labor prices.

8. Construction and Inductive Coordination

The construction and inductive coordination employed in joint use should be in accordance with mutually acceptable practices and in conformity with such recommendations of the Joint General Committee as are issued from time to time.

PRACTICES

1. Territory Covered by Agreement

Agreements should preferably cover all existing wood poles of each of the parties and any other w[illegible] poles hereafter erected or acquired by either of them within a certain described territory, except those which carry circuits of a character that the parties wish to keep out of joint use.

Note: It is recognized that there are exceptional situations where it may not be desirable to make general agreements covering a given territory as, for example, where the major portion of the poles of one of the parties carry circuits for which joint use is not generally advantageous. Such cases may be more satisfactorily handled by agreements covering a specific line or certain specific poles.

2. Types of Joint Use Agreements

Joint use agreements should preferably be of a type under which each of the parties shares equitably in the cost of joint poles. This may be accomplished in either of the following ways:

(a) Space rental, under which form of agreement the licensee rents space on the pole of the owner and pays a rental per pole, which is based on the amount of space reserved. A much-used form of this is the so-called "flat rental per pole," where the division is practically equal and the rental is approximately equal to one-half the average annual charges on a pole which is stipulated as the standard of reference.

(b) Joint ownership, under which form of agreement each of the parties owns a half interest in each joint pole and pays one-half the cost in place of the pole which is stipulated as the standard of reference.

Note: A permanent rights agreement is a modification of the joint ownership agreement which has been used occasionally, under which each of the parties retains sole ownership of certain of the poles and the other party purchases a permanent right of occupancy. The other arrangements are the same as in a joint ownership agreement.

Rentals based on individual contacts or attachments are not generally recommended for joint pole agreements, as such a basis involves the expense and obligations arising from periodical inventories of the attachments. It is also difficult to establish rental rates for the many kinds of individual attachments which will continue to be equitable and mutually satisfactory. Furthermore, this basis does not have the advantage of providing a suitable space for the present and future requirements of each party. However, such a basis may sometimes

be found satisfactory for an individual agreement where only a small number of poles is involved.

3. Conditions Relating to Joint Use of Poles

It is recognized that there are very substantial advantages to both utilities in the employment of jointly occupied poles where the conditions and character of circuits permit. The conditions determining the necessity or desirability of joint use depend upon the service requirements to be met by both parties, including considerations of safety and economy. Each party is the judge of what the character of its circuits should be to meet its service requirements and as to whether or not these service requirements can be properly met by the joint use of poles.

(a) It is recommended that joint use should be entered into in preference to separate pole lines on the same street or highway where the combination of circuits is such as to make further cooperative study of the problem unnecessary and, in other cases, where a cooperative study shows that joint use is economical and is the best engineering solution.

(b) Each party should retain the right to remain out of joint use with such of its pole lines as are necessary for its own sole use or, in other cases, where in its judgment the proper rendering of its service now or in the future requires separate lines.

(c) It is recognized that joint use is advisable but that it is necessary that, when employed, it should meet the service requirements of both parties and that any statement made as to conditions under which joint use is desirable is likely to change as time goes on and as service conditions and the state of the art change.

(d) Based upon the present state of the art, the Supply Utilities and the Communication Utilities have stated as to their respective circuits (see Appendices 1 and 2) the present limitations within which each group recommends that joint use be entered into.

(e) In any case, where it is necessary that the two kinds of lines occupy the same side of the highway, joint use is generally preferable to overbuilding.

(f) It is recognized that situations will sometimes arise in rural districts where greater economy can be obtained with separate lines than with a joint line and without sacrificing safety or service. It is also recognized that a utility will find, in some cases, that it is necessary to construct a line which is to carry such number and weight of attachments that joint use would not be economical or desirable. In such cases, it is not intended to recommend joint use of poles in preference to other arrangements which would be more advantageous.

4. Cooperation to Establish Joint Use

(a) When any party to a joint use agreement is about to erect a new pole line or to extend or reconstruct an existing pole line within the territory covered by the agreement, notice in advance should be given to the other party to the agreement, such notice showing the proposed location and character of the new poles. The parties should then cooperate to determine whether or not joint use of the poles should be established.

(b) When any party to a joint use agreement desires to occupy space on any existing poles of the other party within the territory covered by the agreement, notice should be given the owner of said poles and the parties should then cooperate to determine whether or not joint use of poles should be established.

5. Avoidance of Conflicting Lines

Where joint use of poles is not to be established or where in accordance with Section 6 of these practices joint use is to be terminated, the parties should make every reasonable effort to avoid the establishment of conflicting lines.

6. Procedure When Character of Circuits Is Changed

When either party desires to change the character of its circuits on jointly used poles, it shall so notify the other party and the parties shall cooperate to determine whether or not joint use of the poles involved shall be continued. If it is not agreed to continue joint use of the said poles, the parties shall then cooperate to determine the most practical and economical method of effectively providing for separate lines. The party whose circuits are to be moved shall promptly carry out the necessary

w . and the parties shall cooperate to determine the equitable apportionment of the net expense involved in such relocation. In the event of a disagreement as to what constitutes an equitable apportionment of such expense, the following arrangements are recommended:

(a) In the case of a space rental agreement, the licensee shall bear the said net expense.

(b) In the case of a joint ownership agreement, the said net expense shall be divided equally between the parties.

Unless otherwise agreed by the parties, ownership of any new line constructed under the foregoing provision in a new location shall rest in the party for whose use it is constructed. The net cost of establishing service in the new location should be exclusive of any increased cost due to the substitution for the existing facilities of other facilities of a substantially new or improved type or of increased capacity, but should include the new pole line, the cost of removing attachments from the old poles to the new location, and the cost of placing the a' 'ıments on the poles in the new location.

7. Ownership of Poles Under a Space Rental Agreement

Agreement

In any case where the parties to a space rental agreement shall conclude arrangements for the joint use of any new poles to be erected, the ownership of such new poles should be determined by mutual agreement. In case of failure to agree, the party then owning the smaller number of joint poles under the agreement should erect the poles and be the owner thereof.

> *Note:* It has been found to be of advantage under this form of agreement to have each party own approximately one-half the total number of jointly used poles, as this tends to equalize the investment of the two parties. Furthermore, this has the advantage of reducing the intercompany billing and the exchange of money between the parties. This division of ownership should preferably be accomplished by each party owning certain continuous lines, rather than having the ownership of the poles in a given line divided.

8. Joint Fundamental

An effective way of handling the proper development of joint pole lines in a given territory is through the full application of the principles on cooperation, including advance notice, advance planning, and the interchange of information. Experience has shown that this can be accomplished through a joint fundamental plan of the present and future developments of the overhead systems of the respective parties. Through such joint planning, it will be generally found possible to avoid any difficult situations in locating the lines, and the application of these principles and practices to both the present and future developments can be carried out in the most effective and economical manner.

9. Specifications for Joint Pole Construction

It is intended that complete specifications covering recommended practices for joint use of poles under various conditions will be prepared as soon as practicable. Until such time as these specifications are issued, it is recommended that the National Electrical Safety Code be used as a guide to practice.

Existing joint pole construction should be brought into conformity with the recommended practices in an orderly and systematic manner. This may be accomplished by a provision in the agreement that a certain percentage of the existing construction be brought into conformity with the recommended practices each year.

10. Inductive Coordination for Circuits on Jointly Used Poles

The "Principles and Practices for the Inductive Coordination of Supply and Communication Systems," as issued from time to time by the Joint General Committee, should be followed.

APPENDIX 1

Supply Utilities Statement

In the present state of the art and subject to the limitations of the principles and practices of which this is an appendix, the Supply Utilities are willing to enter into joint use of poles generally, irrespective of the character of the Communication Utilities circuits, with the clear understanding that these principles and practices do not limit such changes

to higher voltages as may be desirable in the future as the most advantageous means of serving their customers, but provide for such changes in location or construction as may be necessary to meet the changed conditions.

APPENDIX 2

Communication Utilities Statement

It is the desire of the Communication Utilities to share, as far as practicable, in the advantages of joint use insofar as their service conditions will permit and, to this end, research is now being undertaken to determine whether they can modify the values herein given so as to extend the possibilities of joint use. In the present state of the art and subject to the limitations of the principles and practices of which this is an appendix, joint use is generally recommended with local telephone exchange circuits in combination with supply circuits of the following kinds:

(1) Nominal constant potential alternating current circuits not exceeding 5000 volts between conductors or 2900 volts to neutral or ground.

(2) Constant current circuits not exceeding 7-1/2 amperes.

(3) Nominal constant potential direct current street railway circuits not exceeding 750 volts to ground.

The Communication Utilities recognize that there will be situations in which, if these limitations are adhered to, it will be difficult or unduly expensive to find the necessary nonconflicting routes to provide for the circuit requirements of both parties. In such cases, the communication companies are willing to enter into joint use, irrespective of the character of the circuits involved, provided that cooperative study by the utilities concerned leads to a determination that joint use is the best engineering solution and that a satisfactory arrangement can be made to meet the Communication Utilities service requirements.