

Phantom Circuit Apparatus.

Balancing resistance or other compensating apparatus should be inserted in the through side of a phantom group at the point where the other side circuit is terminated.

If one circuit of a phantom group is equipped with composite sets or composite ringers, the other side should be similarly equipped and the sets or ringers used on the two sides of the phantom group at any given point should have closely the same impedance characteristics.

Series Apparatus.

Where series apparatus, such as series condensers of a composite set is applied to toll circuits, those parts inserted in each side of a circuit should have closely the same electrical characteristics.

Coils.

Loading coils should be so designed, constructed and installed as to insert closely equal impedance in each wire of a circuit. Loading coils should be located as nearly as practicable at neutral or balanced points of the transposition system. In the design, construction, installation and maintenance of loading coils, efforts should be made to secure permanency of characteristics.

The coils employed for phantoming, compositing, simplexing or sectionalizing communication circuits should be as closely balanced as practicable. If in any case unbalanced coils are necessary, they should be isolated by properly balanced repeating coils.

The windings of retardation coils connected to the two sides of the same metallic circuit should have closely equal self-impedances. The coils of the different circuits should be equipped with suitable cases or so installed as to have negligible mutual impedances.

Condensers.

The condensers employed in composite sets, signaling devices, etc., should have adequate balance of admittance to ground.

Ringling and Signaling Equipment.

The unbalance introduced by ringling or signaling equipment should be limited, in so far as is necessary and practicable.

Central Office Circuits.

Central office circuits are to be so designed, installed and maintained that any connection between toll circuits and subscribers' circuits may be made through repeating coils.

Attention should be given to the control of unbalance in cords and central office wiring.

Effort should be made to prevent the introduction of unbalance by contact resistance.

Ground Connections.

Ground connections, if employed on equipment connected to toll circuits, should be in the balanced or neutral position of the circuit.

SPECIFIC COORDINATED METHODS

The specific practices outlined here are to be used in addition to the general practices to supplement the latter in so far as may be necessary and practicable in cases where communication and supply lines are involved, or are about to be involved, in inductive exposures.

All of these practices are not required to be applied in any one specific case, but in each instance that practice or those practices in combination should be selected which will under the conditions afford the best engineering solution.

Power Level and Sensitivity.

Consideration should be given to maintaining in the communication circuits as high a power level and such a degree of sensitivity as is consistent with good economics.

Selective and Other Special Devices.

Consideration should be given to the use of such devices as neutralizing transformers, sectionalizing transformers, filters, resonant shunts or drainage coils in any case where they may offer benefit and the service requirements of the circuit will permit.

Rerouting Service.

If abnormal conditions should temporarily prevent the use of a certain line and the effect of the abnormal conditions can be

avoided only by temporarily rerouting the supply or communication service over a route not involved in the inductive exposure, consideration should be given to the adoption of this expedient. Where the rerouting of either service is impracticable, the choice as to which service is to be temporarily suspended should be governed by the relative importance to the public of the respective services affected.

Records.

Routine measurements of insulation, conductor resistance, balance and induction should be made on toll circuits involved in inductive exposures and records kept of the readings.

A record should be kept of abnormal conditions in toll circuits involved in inductive exposures where a study of such conditions is advisable. Such records should as fully as practicable include time, duration, circuit designation, location, probable cause and effect of the abnormal condition and how the circuits were cleared.

All the above records or a convenient summary thereof should be available for the purpose of analyzing causes and effects of disturbances.

LINES.

Configuration.

Where service requirements permit a choice of configuration of a communication circuit or a group of communication circuits consideration should be given to the selection of a configuration such as to limit susceptibility.

Cable.

Consideration should be given to the use of cable within an inductive exposure.

Where communication circuits are carried in aerial cable, consideration should be given to the use of properly arranged and installed grounds on cable sheaths or other methods of shielding.

Coordinated Transpositions.

Consideration should be given to the use of transpositions in supply or communication circuits, or both, within inductive exposures, for the purpose of limiting the coupling. Such transpositions should be installed at suitable intervals, the location to be

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such as the local conditions demand. Where transpositions are installed in both supply and communication circuits within inductive exposures, they should be properly coordinated.

Note: Care should be taken in the installation of transpositions that, so far as practicable, the transpositions are located nearest the theoretically correct point. In determining the most economical scheme of transpositions effort should be made to utilize as many as practicable of any existing transpositions. Where the transpositions required within an inductive exposure impair the general transposition scheme of communication or supply circuits outside the limits of inductive exposure, the necessary readjustment of transpositions should be made in the section or sections of line adjacent to inductive exposure. Uniformity of separation generally assists in the attainment of coordination. If discontinuities are of sufficient magnitude to substantially affect the coupling, sections between such points should be treated independently.

APPARATUS.

Party Line Ringers.

Consideration should be given to the use of high impedance substation party line ringers or their equivalent.

Central Office Equipment.

Consideration should be given to equipping toll circuits which may be switched to other toll circuits with repeating coils. In those cases where the design of a central office is such that there is a possibility that toll circuits may be switched directly to local circuits, consideration should be given to the use of repeating coils if their omission would contribute to interference.

Where series apparatus is applied to local communication circuits, consideration should be given to so arranging it that equal impedances are inserted in each side of the circuit where necessary and practicable.

Ground Connections.

Ground connections if employed on equipment connected to local communication circuits should so far as is practicable be at neutral or balanced points.

PRACTICES APPLICABLE TO SUPPLY SYSTEMS

GENERAL COORDINATED METHODS

The following practices should be applied to all supply systems except as deviations may be made under the principle of deferred coordination.

Residual Voltages and Currents.

Residual voltages and currents should be limited as far as is necessary and practicable.

Unsymmetrical loads between phases should be avoided in so far as is practicable where they would give rise to residual currents or voltages.

Note: Circuit conditions may cause a residual voltage to appear on a three-phase system. If the neutral of the system is grounded at one point, residual current may flow and the residual voltage may be increased or decreased. In this case, the residual current may consist in part of current through the total direct admittance of the system to ground due to voltages impressed between the three conductors and ground. It may also consist in part of unbalanced charging current to ground due to voltages impressed upon unbalanced direct admittances of the three conductors to ground. The former will not be affected by transpositions while the latter may be reduced or eliminated by equalization of the conductor admittances to ground.

If the system is operated without a neutral ground, the residual voltage would be reduced by equalizing the admittances of the conductors to earth.

If the phases are not symmetrically loaded and two or more neutrals of the same electrically connected system are grounded, residual currents will flow. However, substantial residual currents due to unsymmetrical loads will not flow if the system has a single or no neutral ground.

Single phase taps from 3-phase circuits have inherently a residual voltage; such taps, if long, tend to appreciably unbalance the 3-phase circuit to which they are connected.

If the neutral of a system is grounded at two or more points, the residual voltage or the residual current may be increased or decreased. Whether the total influence of the system is increased or decreased will depend upon local conditions.

Discontinuities.

Discontinuities should be limited to the number required by the conditions.

Switching.

In all switching operations care should be taken to limit, so far as is practicable, the production of transient disturbance leading to excessive momentary influence.

Care should be taken to avoid repeatedly energizing at normal voltage a transmission supply circuit in order to locate a fault. It is sometimes practicable to locate such faults by means of lower voltage testing methods.

Maintenance.

In the maintenance of supply circuits, attention should be given to the prevention of mechanical or electrical failures which would lead to residual voltages or residual currents of substantial magnitude. When supply circuits become unbalanced, due to any

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cause, every reasonable effort should be made to remedy the unbalanced condition promptly.

Contact Resistance.

Care should be taken to avoid contact resistance which would affect influence.

LINES.

In order to reasonably limit the residual current and voltages arising from line unbalances, the resistance, inductance, capacitance and leakage conductance of the several conductors in each section of a circuit should, so far as is necessary and practicable, be equal respectively to the corresponding quantities in any other conductor of the same section of the circuit.

Some of the methods and means for limiting unbalance in lines are described below.

Configuration.

Where there is a choice between two or more types of configuration, consideration should be given to use where practicable of such configuration of a supply circuit or a group of supply circuits as provides the superior balance.

Excessive Spacing.

Excessive spacing of conductors should be avoided. This does not mean that the spacing should be less than required by considerations of safety, service, and the future requirement of the circuits.

Transpositions.

Capacitances to earth of the conductors of transmission supply circuits should be suitably balanced by transpositions so far as is necessary and practicable.

Branch Circuits.

Where branches employing less than the total number of phase wires are to be used, they should be so planned as not to give rise to excessive residual voltages or currents on the three-phase system.

Series Lighting Circuits.

In the construction or rearrangement of series street lighting circuits, unbalances which materially contribute to inductive influence should be avoided.

Three-Phase, Four-Wire Systems.

If three-phase, four-wire grounded neutral supply circuits are used, the neutral wire should be continuous except in case of a three-phase branch which is either operated non-grounded or is grounded only at symmetrical load points.

Ground Return Circuits.

Ground return circuits or ground return branches of multi-wire supply circuits should not be employed. This does not apply to track return circuits.

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NOTE: It is recognized as commercially impossible to build rotating machinery entirely free from harmonics. It is further recognized that some distortion of wave form—and consequent introduction of harmonics—is inherent with power transformers which must employ iron in their magnetic circuits. However, in both these cases the introduction of harmonics can, to a considerable extent, be controlled within the limits of commercial design and practice. So, the above provisions are intended to secure the attention which this matter deserves because of its basic importance and its reaction on the necessity for other methods.

Rotating Machinery.

Synchronous machines should be specified and selected so as to have a wave form in which the harmonic components are limited so far as necessary and practicable.

Induction motors and generators should be selected which cause the least practicable amount of harmonic voltages and currents on the system to which they are connected.

Transformers.

In order that the wave form of voltage and current may be affected as little as practicable by transformers, such apparatus should not be designed so as to operate at excessive magnetic densities. In the installation, connection, and operation of transformers, care should be taken to avoid excessive over-voltages or excessive magnetizing currents.

When star connected transformers or autotransformers are employed with a grounded neutral on the side connected to a line circuit, low impedance closely coupled tertiary windings or delta-connected secondary windings, or other suitable means for adequately limiting the triple harmonic components of residual current or voltages should be employed.

Where open delta transformer banks are used, they should be distributed symmetrically among the phases in so far as necessary and practicable.

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Care should be taken that the individual units in each grounded neutral bank of transformers connected to a transmission supply circuit are substantially alike as to electrical characteristics and that they are similarly connected.

Switches.

Each switch controlling the supply of energy to transmission supply circuits should have all poles arranged for gang operation. So far as is practicable, these switches should be automatic for short circuits between phases and from phase to ground.

Protective Apparatus.

Protective apparatus should be such that it will not unnecessarily add to transient disturbance, and should so far as practicable forestall or limit such transient disturbances.

Routine inspection of lightning arresters should be provided, and the periodic charging, where such is required, should conform to good practice.

Arresters should be maintained in good condition. Arresters which have been temporarily withdrawn from service should not be replaced in service until they are in proper operating condition.

Where lightning arresters requiring periodic charging are employed on a supply system involved in an inductive exposure, they should be equipped with auxiliary resistances and contacts.

Routine inspection or tests should be made to determine whether or not adjustments in all protective apparatus are properly maintained.

Abnormal Conditions.

Reasonable means should be provided to prevent the continuation in operation of faulty apparatus or lines for such periods or under such conditions as lead to excessive influence.

Reliable indicating or recording devices should be installed at the source of transmission supply circuits to show abnormal operating conditions.

Series Lighting Circuits.

Consideration should be given to the use of types of equipment in series street lighting circuits which, so far as practicable, have a minimum distorting effect on the voltage and current wave

shape of the lighting circuit, both during times of normal operation and times of lamp outages.

Ground Connections.

Ground connections, if employed on apparatus connected to transmission supply circuits, should be made in the balanced or neutral position in the circuit. This precludes the use of grounded open star transformer connections.

SPECIFIC COORDINATED METHODS

The specific practices outlined herein are to be used in addition to the general practices to supplement the latter so far as may be necessary and practicable in cases where communication and supply lines are involved, or are about to be involved, in inductive exposures.

All of these practices are not required to be applied in any one specific case, but in each instance that practice or those practices in combination should be selected which will under the conditions afford the best engineering solution.

LINES.

Configuration.

Where physical and economic conditions permit a choice of configuration of supply circuits within inductive exposures the configuration should be selected so as to limit the influence.

Branch Circuits.

Consideration should be given to the isolation of branch circuits consisting of less than the total number of wires of the main circuit, resulting in substantial balance, by means of transformers when such main or branch circuits are involved in inductive exposures.

Consideration should be given to the isolation of loops of series lighting circuits.

Coordinated Transpositions.

Consideration should be given to the use of transpositions in supply or communication circuits, or both, within inductive exposures, for the purpose of limiting the coupling. Such transpositions should be installed at suitable intervals, the location to

be such as the local conditions demand. Where transpositions are installed in both supply and communication circuits within inductive exposures, they should be properly coordinated.

Note: Care should be taken in the installation of transpositions that where practicable the transpositions are located nearest the theoretically correct point. In general, transpositions may be omitted at the junction points of successive sections which are suitably balanced. In determining the most economical scheme of transpositions effort should be made to utilize as many as practicable of any existing transpositions. Where the transpositions required within an inductive exposure impair the general transposition scheme of communication or supply circuits outside the limits of inductive exposure, the necessary readjustment of transpositions should be made in the section or sections of line adjacent to inductive exposure. Uniformity of separation generally assists in the attainment of coordination. If discontinuities are of sufficient magnitude to substantially affect the coupling, sections between such points should be treated independently.

Rerouting Service.

If abnormal conditions should temporarily prevent the use of a certain line and the effect of the abnormal conditions can be avoided only by temporarily rerouting the supply or communication service over circuits not involved in the inductive exposure, consideration should be given to the adoption of this expedient. Where the rerouting of either service is impracticable the choice as to which service is to be temporarily suspended should be governed by the relative importance to the public of the respective services affected.

APPARATUS.

Wave Shape.

Where a ground connection used on the armature winding of an alternating current generator or motor electrically connected to supply circuits results in triple harmonics on circuits involved in inductive exposures, means should be employed to reduce the triple harmonics as far as may be necessary and practicable.

Rectifiers, arc furnaces and other apparatus which distort the voltage or current wave form of a supply circuit involved in an inductive exposure, should be equipped when and as necessary and practicable with suitable auxiliary apparatus to prevent such distortion.

Where the service conditions permit, consideration should be given to special means and devices for reducing the amplitude of harmonics on systems involved in inductive exposures.

Reasonable efforts should be made to promptly replace out-lamps on circuits equipped with individual transformers or bridged reactance coils.

Transformers.

Consideration should be given to the use of closed delta connection on main transformer supply banks or large distribution banks where necessary and practicable in preference to open delta.

Lightning Arresters.

Where, notwithstanding compliance with the paragraph regarding equipment of the arresters, interference arises at time of charging lightning arresters, charging should be done at such times as will result in minimum interference to both services.

Switches.

Consideration should be given to the installation of at least one oil-break switch, or its approved equivalent, to control the supply circuit involved in an inductive exposure.

Current Limiting Devices.

Consideration should be given to the use, so far as necessary and practicable, of current limiting devices in either the line wires or the neutral of transmission supply circuits.

Ground Connections.

Ground connections if employed on apparatus connected to local supply circuits should, so far as practicable, be made at the neutral or balanced point of the circuit.

Records.

A record should be kept of all abnormal conditions on transmission supply circuits involved in inductive exposures, where a study of such conditions is advisable. Such records should, as fully as practicable, include time and duration, circuit designation, location, probable causes and effect of abnormal conditions and how cleared.

All of the above records, or a convenient summary thereof, should be available for the purpose of analyzing cause and effect of disturbances.

DEFINITIONS

For the purpose of these principles and practices, the following terms are used with meanings as given in these definitions:

Inductive Coordination.

The location, design, construction, operation and maintenance of supply and communication systems in conformity with harmoniously adjusted methods which will prevent inductive interference.

General Coordinated Methods.

Those methods reasonably available for general application to supply or communication systems, which contribute to inductive coordination without specific consideration to the requirements for individual inductive exposures.

Specific Coordinated Methods.

Those additional methods applicable to specific situations where general coordinated methods are inadequate.

Inductive Interference.

An effect arising from the characteristics and inductive relations of supply and communication systems of such character and magnitude as would prevent the communication circuits from rendering service satisfactorily and economically if methods of inductive coordination were not applied.

Inductive Exposure.

A situation of proximity between supply and communication circuits under such conditions that inductive interference must be considered.

Inductive Susceptiveness.

Those characteristics of a communication circuit with its associated apparatus which determine, so far as such characteristics can determine, the extent to which it is capable of being adversely affected in giving service, by a given inductive field.

Inductive Influence.

Those characteristics of a supply circuit with its associated apparatus that determine the character and intensity of the inductive field which it produces.

Inductive Coupling.

The interrelation of neighboring supply and communication circuits by electric or magnetic induction or both.

Configuration.

The geometrical arrangement of the conductors of a circuit including the size of the wires and their relative positions with respect to other conductors and the earth.

Electrically Connected.

Connected by means of a conducting path or through a condenser as distinguished from connection merely through electromagnetic induction.

Transposition.

An interchange of position of conductors of a circuit between successive lengths.

Coordinated Transpositions.

Transpositions which are installed in either supply or communication circuits or in both for the purpose of reducing inductive coupling and which are located effectively with respect to the discontinuities in both the supply and communication circuits.

Discontinuity.

A point at which there is an abrupt change in the physical relations of supply and communication circuits or in electrical constants of either circuit which would materially affect the coupling.

Transpositions are not rated as discontinuities, although technically included in the definition, because of their application to coordination.

Residual Voltage.

The residual voltage of a supply circuit is the vector sum of the voltages to ground of the several wires. In a three-phase system it is in effect a single phase voltage equal to one-third of the residual voltage, impressed between the wires in multiple and the ground.

Residual Current.

The residual current of a supply circuit is the vector sum of the currents in the several wires and is equivalent to a single phase current having the wires in multiple as one side and the ground as the other.

Power Level.

The level of the electrical power flowing in a communication circuit. At any point the power level depends on the conditions of input and of losses between the point of input and the designated point.

In telephone practice the power level of a circuit is usually referred to the power level in a given circuit assuming that the acoustic input into the circuit under consideration is of a given amount and the same as the input into the reference circuit.

Sensitivity.

The sensitivity of a telephone circuit or a part thereof is the ratio of the electrical or the acoustic output to the electrical input.

Selectivity.

That property of apparatus or a circuit which permits the transmission or conversion of currents of different frequencies in differing degrees.

INDUCTIVE COORDINATION
ALLOCATION OF COSTS
BETWEEN
SUPPLY AND COMMUNICATION COMPANIES

The Reports of the Joint General Committee on Principles and Practices for Inductive Coordination have established the broad basis for the solution of inductive coordination problems from a physical standpoint based on the present state of the art. From the start, however, it has been recognized that the question of allocation of costs enters into the problem in an important way and in this connection the letter transmitting the first report contained the following statement:

"Your Committee, as soon as standards of construction and operation are adopted, will consider whether principles can be established to aid in the fair allocation of costs of coordinative measures. In the meantime, your Committee believes that with the cooperative spirit which now is evident a mutually equitable adjustment can and should be made in each specific case. It is understood that any adjustments made will not be considered as precedents by either party to the prejudice of future understandings."

It is understood that, generally speaking, the respective utilities have been handling the allocation of costs in specific cases along the above recommended lines. However, in some cases difficulty has been encountered in endeavoring to reach an equitable adjustment; in fact, negotiations regarding the allocation of costs have in some cases unduly influenced the technical work on the specific situations involved and have tended to retard or prevent agreement on the best engineering solution.

This question has received careful consideration for some time and as a result certain suggestions have been made which will be helpful to the supply utilities and communication utilities as a guide in arriving at an equitable apportionment of the costs of

methods of inductive coordination in situations where the two utilities have not already arrived at a mutually satisfactory plan for handling the allocation of costs.

In arriving at conclusions on this matter of allocation of costs, the following were carefully considered. The solution to the problem of inductive coordination should, of course, be based on the service needs of both parties and on the overall cost rather than on any consideration of in what plant the changes shall be made or how the costs are to be allocated. This is in accordance with the section on "Choice Between Specific Methods" contained in the Principles and Practices for the Inductive Coordination of Supply and Communication Systems and it is obvious that the approach to the problem should be such as to offer every incentive to obtaining the best engineering solution. It was the consideration of these facts that suggested the method herein outlined for the allocation of costs.

As has been stated in previous reports, each party should be the judge of its own service requirements but as covered in the Principles and Practices above referred to, each party also has a duty of coordination as shown by the following quotation:

"In order to meet the reasonable service needs of the public, all supply and communication circuits with their associated apparatus should be located, constructed, operated and maintained in conformity with general coordinated methods which maintain due regard to the prevention of interference with the rendering of either service. These methods should include limiting the inductive influence of the supply circuits or the inductive susceptiveness of the communication circuits or the inductive coupling between circuits or a combination of these, in the most convenient and economical manner."

In other words, there are certain things indicated in connection with the classes of circuits covered in the Principles and Practices above referred to which each utility should do in its system in a general way which will promote inductive coordination.

These measures, however, cannot take account of the problems which arise in specific cases, and this was also recognized in the principles on Duty of Coordination already referred to as follows:

"Where general coordinated methods will be insufficient, such specific coordinated methods suited to the situation should be applied to the systems of either or both kinds as will most conveniently and economically prevent interference, the methods to be based on the knowledge of the art."

These specific methods cannot be embodied in the general design of either plant because their nature and the necessity of their application are contingent upon the conditions of the specific situations which may arise and which generally cannot be foreseen. It is the equitable apportionment of the cost of these latter items which has apparently given rise to such differences of opinion as have existed between representatives of the two industries on this subject.

Taking into account all the foregoing factors, the plan suggested for use in connection with new construction is as follows:

1. Each utility should at its own expense design, construct, operate and maintain its plant in accordance with general coordinated methods.
2. Specific methods of coordination should be paid for by such equitable apportionment of the costs as may be agreed to by the utilities affected. It may be found reasonable in some cases for each party to bear the costs of such specific methods of coordination as result in net capital additions in its own plant; care must be exercised, however, that this be not carried to a point where the best engineering solution is prejudiced. In cases where it is not clear as to what constitutes an equitable apportionment a fifty-fifty division of the costs may be found the most practicable solution.
3. All carrying charges, repair, operating or other current expenses incident to specific coordinated methods and all subsequent replacement costs arising after and due to the installation of specific coordinated methods should be borne by the utility on whose system the costs are incurred.

The above outlined plan has the advantage that it can in no way prejudice the application of the best engineering solution because it makes each party have a direct interest in reducing the

total cost of specific coordinated methods rather than in whether or not the expense is incurred in one plant or the other or both.

In applying this suggested general plan for the allocation of costs of specific methods of coordination, it is assumed the four following conditions will be met:

1. That each system has complied with the requirements for general coordination.
2. That the best engineering solution of the specific problem has been determined.
3. That the costs to be allocated are net costs and, therefore, exclude all items of betterment.
4. That the costs are computed on a uniform and mutually acceptable basis for both direct and indirect charges.

In situations involving extensions to existing systems or the cleaning up of existing exposures it is recognized that such existing systems may not comply entirely with general coordinated methods, and that the method suggested above for new construction may require some modification to adapt it to existing situations. Such problems involve consideration of whether or not both systems should be brought into compliance with general coordinated methods or whether some other plan is the best engineering solution. This point, together with the history of the case and any contemplated plans either party may have for changes in its system, will have a bearing on what constitutes an equitable apportionment of the costs.

PRINCIPLES AND PRACTICES
FOR THE
JOINT USE OF WOOD POLES BY SUPPLY AND
COMMUNICATION 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 co-operation and each notify the others 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, for operating in joint use, for terminating joint use and for a practical procedure for modifying facilities in joint use from time to time.

In either general or specific contracts, any provisions treating of 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 effected 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 taken that such terms are not disadvantageous to either party.

7. Periodical Readjustment of Contracts.

Provision should be made for review and revision from time to time of those stipulations of a contract treating of conditions of a varying nature and 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 wood 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 agreement 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 depends 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 work 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 attachments on the poles in the new location.

7. Ownership of Poles Under a Space Rental 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 Plan.

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.

**EXHIBIT G, 1987 JOINT LETTER FROM AT&T
AND FPL DISCUSSING JUA OPERATIONAL
POLICY**

PUBLIC VERSION



Southern Bell

Room 15JJ1, Southern Bell Tower
301 W. Bay Street
Jacksonville, Florida 32202

P.O. BOX 829100 MIAMI, FL 33102

FPL
FLORIDA POWER & LIGHT COMPANY

July 15, 1987

General Managers - Network
District Engineers
Southern Bell Tel. and Tel Co.

Division Engineering Managers
Engr/Service Planner Svcs.
Florida Power and Light Co.

Subject: Joint Use Agreement - SBT&T CO./FP&L Co.
Operating Policy Update

Representatives of Southern Bell Telephone Co. (SBT&T) and Florida Power and Light Co. (FP&L) have investigated ways to improve the overall effectiveness of our Joint Use Agreement and to eliminate certain long standing joint use problems.

The following guidelines should clarify the responsibility of each Company under a variety of circumstances. These guidelines are not intended to change the terms of the existing joint use agreement but do change some previous interpretations, particularly in respect to the replacement of poles.

These guidelines apply to FP&L/SBT&T operations Statewide and should be phased in as new jobs are initiated. As every circumstance cannot be covered, it is anticipated that there will be some exceptions negotiated in the Districts.

POLE OWNERSHIP

1. New pole lines and extensions of existing pole lines will continue to be placed by SBT&T if required for joint use. This typically involves requirements to serve new growth areas.
2. Intermediate poles required in existing pole lines and minor extensions of existing pole lines to "finish out the block" will normally be placed by the Company owning the majority of the poles in that line.

FPL00102

PUBLIC VERSION

3. Individual poles requiring replacement due to deterioration or to obtain additional height/strength will normally be replaced by the Company owning the existing pole. However, if both parties agree, the pole may be replaced by the company owning the majority of the poles in the line if that will lead toward a reduction of mixed ownership.

4. When extensive segments of existing pole lines require replacement, such as in conjunction with a highway relocation job, SBT&T will place the new poles if required for joint use at the time of replacement or in the future.

CONCRETE POLES

All concrete poles placements will be made by FP&L. All concrete poles will be pre-drilled to accommodate one cable attachment. A grounding pigtail should also be provided on all of those poles having a vertical ground wire. The standard height for pre-drilled holes in 40 foot concrete poles will be 22' above the ground line unless a different height is negotiated between the Companies during the design stage. SBT&T forces may also drill holes in concrete poles when approved by FP&L.

Questions regarding this letter and the joint use agreement may be directed to your Company's Joint Use Contract Coordinator(s).

Approved:

SOUTHERN BELL TEL. & TEL. CO.

FLORIDA POWER & LIGHT CO.





W. R. Perry
General Manager, Network

R. K. Cielo, Director
Distribution Engineering Dept.

SBT&T File 740.0606

**EXHIBIT H, 1992 LETTER FROM AT&T
DIRECTOR TO AT&T GENERAL MANAGERS
ADVISING NON-COMPLIANCE WITH THE JUA**

PUBLIC VERSION



T. C. Kellermann, Jr.
Director - Administration
Network Operations/South

20th Floor - Southern Bell Tower
301 West Bay Street
Jacksonville, Florida 32202
904 350-2021

Date: July 22, 1992

File Code: 740.606

Mr. W. R. Perry
General Manager - Network
Jacksonville, Florida

Mr. S. A. Mulcahy
General Manager - Network
Ft. Lauderdale, Florida

Ms. L. C. Isenhour
General Manager - Network
Miami, Florida

Dear Sirs and Madam:

During a recent meeting with representatives of Florida Power & Light Company, it was alleged that Southern Bell was not in compliance with the operating policy document dated July 15, 1987 (attached) which was signed by both companies.

The purpose of the policy document was to set the direction to achieve the "objective percentage" of 47.4 percent of the joint-use poles owned by Southern Bell and 52.6 percent of the joint-use poles owned by Florida Power and Light. Neither the policy nor the objective has changed. Please review the attachment and comply.

Should there be any questions, please contact Mr. J. J. Farkas at 305-263-3806.

Sincerely yours,


attachment

FPL00105

PUBLIC VERSION



Southern Bell

Room 151J1, Southern Bell Tower
301 W. Bay Street
Jacksonville, Florida 32202

P.O. BOX 029100 MIAMI, FL 33102

FPL
FLORIDA POWER & LIGHT COMPANY

July 15, 1987

General Managers - Network
District Engineers
Southern Bell Tel. and Tel Co.

Division Engineering Managers
Engr/Service Planner Svcs.
Florida Power and Light Co.

Subject: Joint Use Agreement - SBT&T CO./FP&L Co.
Operating Policy Update

Representatives of Southern Bell Telephone Co. (SBT&T) and Florida Power and Light Co. (FP&L) have investigated ways to improve the overall effectiveness of our Joint Use Agreement and to eliminate certain long standing joint use problems.

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These guidelines apply to FP&L/SBT&T operations Statewide and should be phased in as new jobs are initiated. As every circumstance cannot be covered, it is anticipated that there will be some exceptions negotiated in the Districts.

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1. New pole lines and extensions of existing pole lines will continue to be placed by SBT&T if required for joint use. This typically involves requirements to serve new growth areas.
2. Intermediate poles required in existing pole lines and minor extensions of existing pole lines to "finish out the block" will normally be placed by the Company owning the majority of the poles in that line.

FPL00106

PUBLIC VERSION

3. Individual poles requiring replacement due to deterioration or to obtain additional height/strength will normally be replaced by the Company owning the existing pole. However, if both parties agree, the pole may be replaced by the company owning the majority of the poles in the line if that will lead toward a reduction of mixed ownership.

4. When extensive segments of existing pole lines require replacement, such as in conjunction with a highway relocation job, SBT&T will place the new poles if required for joint use at the time of replacement or in the future.

CONCRETE POLES


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Questions regarding this letter and the joint use agreement may be directed to your Company's Joint Use Contract Coordinator(s).


Approved:

SOUTHERN BELL TEL. & TEL. CO.

FLORIDA POWER & LIGHT CO.



W. R. Perry
General Manager, Network



R. K. Cielo, Director
Distribution Engineering Dept.

SBT&T File 740.0606

**EXHIBIT I, 1992 LETTER FORM FPL STAFF
MANAGER TO FPL FIELD MANAGERS
ADVISING THE FPL FIELD EMPLOYEES AT&T
INTENT TO COMPLY WITH THEIR
REQUIREMENTS TO SET NEW POLES**

PUBLIC VERSION



Inter-Office Correspondence

To: See Distribution Date: August 13, 1992
From: David Appler Department: DEO/GO
Subject: **SOUTHERN BELL SETTING POLES
TO MEET FPL SRD'S**

Enclosed please find a letter to all Bell South General Managers, from their Director of Administration, reaffirming the joint use pole ownership goals between FPL and SBT.

Achieving the goals for pole ownership will require awareness by Bell South personnel of the attached letter from Mr. Kellermann. Therefore, our field designers should communicate the contents of the letter, when requesting SBT to set joint use poles. Initially I recommend this be done both verbally and in writing until a confirmation of Bell South awareness of this letter and its goals has been achieved.

Assurances have been given by Bell South that setting poles of any height should not pose a problem as long as proper lead time is given. Thus written confirmation of FPL's requirement is critical in evaluating the success of both companies efforts to meet the spirit of the agreement.

If you should have any questions or problems executing the above stated agreement, please contact Dennis La Belle at (347-7206) or the undersigned at (347-7896) for assistance.


David Appler

DAA/kdf

Distribution: Distribution Unit Managers
Construction Superintendents
Operations Superintendents

PUBLIC VERSION



T. C. Kellermann, Jr.
Director - Administration
Network Operations/South

20th Floor - Southern Bell Tower
301 West Bay Street
Jacksonville, Florida 32202
904 350-2021

Date: July 22, 1992

File Code: 740.606

Mr. W. R. Perry
General Manager - Network
Jacksonville, Florida

Mr. S. A. Mulcahy
General Manager - Network
Ft. Lauderdale, Florida

Ms. L. C. Isenhour
General Manager - Network
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Dear Sirs and Madam:

During a recent meeting with representatives of Florida Power & Light Company, it was alleged that Southern Bell was not in compliance with the operating policy document dated July 15, 1987 (attached) which was signed by both companies.

The purpose of the policy document was to set the direction to achieve the "objective percentage" of 47.4 percent of the joint-use poles owned by Southern Bell and 52.6 percent of the joint-use poles owned by Florida Power and Light. Neither the policy nor the objective has changed. Please review the attachment and comply.

Should there be any questions, please contact Mr. J. J. Farkas at 305-263-3806.

Sincerely yours,


attachment

FPL00110

PUBLIC VERSION



Southern Bell

Room 151J1, Southern Bell Tower
301 W. Bay Street
Jacksonville, Florida 32202

P.O. BOX 829100 MIAMI, FL 33102

FPL
FLORIDA POWER & LIGHT COMPANY

July 15, 1987

General Managers - Network
District Engineers
Southern Bell Tel. and Tel Co.

Division Engineering Managers
Engr/Service Planner Svcs.
Florida Power and Light Co.

Subject: Joint Use Agreement - SBT&T CO./FP&L Co.
Operating Policy Update

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These guidelines apply to FP&L/SBT&T operations Statewide and should be phased in as new jobs are initiated. As every circumstance cannot be covered, it is anticipated that there will be some exceptions negotiated in the Districts.

POLE OWNERSHIP

1. New pole lines and extensions of existing pole lines will continue to be placed by SBT&T if required for joint use. This typically involves requirements to serve new growth areas.
2. Intermediate poles required in existing pole lines and minor extensions of existing pole lines to "finish out the block" will normally be placed by the Company owning the majority of the poles in that line.

FPL00111

PUBLIC VERSION

3. Individual poles requiring replacement due to deterioration or to obtain additional height/strength will normally be replaced by the Company owning the existing pole. However, if both parties agree, the pole may be replaced by the company owning the majority of the poles in the line if that will lead toward a reduction of mixed ownership.

4. When extensive segments of existing pole lines require replacement, such as in conjunction with a highway relocation job, SBT&T will place the new poles if required for joint use at the time of replacement or in the future.

CONCRETE POLES

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Questions regarding this letter and the joint use agreement may be directed to your Company's Joint Use Contract Coordinator(s).

Approved:

SOUTHERN BELL TEL. & TEL. CO.

FLORIDA POWER & LIGHT CO.



W. R. Perry
General Manager, Network



R. K. Cielo, Director
Distribution Engineering Dept.

SBT&T File 740.0606

PUBLIC VERSION

P.O. BOX 829100 MIAMI, FL 33102



Southern Bell

Room 15J1, Southern Bell Tower
301 W. Bay Street
Jacksonville, Florida 32202

FPL
FLORIDA POWER & LIGHT COMPANY

July 15, 1987

General Managers - Network
District Engineers
Southern Bell Tel. and Tel Co.

Division Engineering Managers
Engr/Service Planner Svcs.
Florida Power and Light Co.

Subject: Joint Use Agreement - SBT&T CO./FP&L Co.
Operating Policy Update

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FPL00113

PUBLIC VERSION

3. Individual poles requiring replacement due to deterioration or to obtain additional height/strength will normally be replaced by the Company owning the existing pole. However, if both parties agree, the pole may be replaced by the company owning the majority of the poles in the line if that will lead toward a reduction of mixed ownership.

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Questions regarding this letter and the joint use agreement may be directed to your Company's Joint Use Contract Coordinator(s).

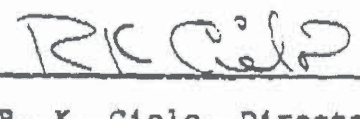
Approved:

SOUTHERN BELL TEL. & TEL. CO.

FLORIDA POWER & LIGHT CO.



W. R. Perry
General Manager, Network



R. K. Cielo, Director
Distribution Engineering Dept.

SBT&T File 740.0606

**EXHIBIT J, SUMMARY OF ADVANTAGES AND
DISADVANTAGES AT&T ENJOYS OVER THEIR
ALLEGED COMPETITORS**

PUBLIC VERSION

Exhibit J Summary of Benefits and Advantages

Reference Paragraph #	Benefits and Advantages AT&T enjoys from the JUA	Value
7	Avoidance of Market Rates	
8	Bargaining Power	
9	Guaranteed Access – poles built to suit and avoided initial construction make-ready cost.	
10	Capacity Expansion and Make-Ready Avoidance for First Time Attachments. a. Advantage to AT&T. b. Disadvantage to AT&T's alleged Competitors.	
11	Guaranteed Free Make-Ready for Mature Joint Use Poles already having AT&T Attachments.	
12	Time-Value of money	
13	Space Used – Cost to relocate AT&T – Disadvantage to AT&T's alleged competitors	
14	Lifetime of Free Make-ready for replaced poles	
15	Permitting Requirement to attach to FPL poles	
16	Ease of Access to FPL's poles a. Advantage to AT&T b. Disadvantage to AT&T's alleged competitors	
17	Access to Rights-of-way and Easements Obtained by FPL a. Easements - Current advantage over CATV carriers or all telecommunication industry without a JUA in place b. Right-of-way permits	
18	No Unauthorized Attachments	

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Reference Paragraph #	Benefits and Advantages AT&T enjoys from the JUA	Value
19	Direct vs. Indirect Make-Ready Fees	This saves about 20% of the make-ready cost an alleged competitor pays
20	Flexibility	Faster, safer work environment. Less expensive fleet investment.
21	Expansion of Capacity – Disadvantage to AT&T's alleged competitors	Alleged competitors face denial of access.
22	Transfer of Ownership – AT&T advantage	Guaranteed right to take ownership of a pole without disruption of normal operations.
23	Common Pole Bond – alleged competitor disadvantage.	Other telecom provider required to pay for special need pole bonds when required.
24	Insurance	Telecom providers required to meet more stringent insurance requirement, which costs them more.
25	Increase in Stronger/Concrete Poles	FPL investment to accommodate AT&T on joint use poles. Not required for AT&T's alleged competitor.
26	Bond and Removal Fees	Alleged competitors exposed to additional expense
27	Contribution from FPL to Build a New Relocated Pole Line	This term was put into the JUA so AT&T could move their facilities if it felt the transmission facilities would interfere with their service. AT&T's alleged competitors must choose to stay on the pole or relocate at their cost.

**EXHIBIT K, CALCULATION OF NET PAYMENTS
OWED UNDER OLD TELECOM RATE AND NEW
TELECOM RATE**

PUBLIC VERSION

Exhibit K - Net Payment Calculation



Exhibit B

PUBLIC VERSION

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

BELLSOUTH
TELECOMMUNICATIONS, LLC,
d/b/a AT&T Florida,

Complainant,

v.

FLORIDA POWER & LIGHT COMPANY,

Respondent.

)
)
)
) Proceeding No. 19-187
)
) Bureau ID No. EB-19-MD-006
)
)
)
)
)
)
)

**DECLARATION OF WILLIAM ZARAKAS
IN OPPOSITION TO POLE ATTACHMENT COMPLAINT**

1. My name is William P. Zarakas. I am a Principal with The Brattle Group, an economics consulting firm, where I work primarily on economic and regulatory matters concerning the communications and energy industries. I have been involved in the economic analysis of issues facing these industries for roughly 30 years. I have provided reports and/or testimony before the Federal Communications Commission (FCC), the Federal Energy Regulatory Commission (FERC), the Securities and Exchange Commission (SEC), the Copyright Royalty Judges (Library of Congress), the U.S. Congress, state regulatory agencies, arbitration panels, foreign governments, and courts of law. I have previously provided testimony and/or expert reports to the FCC on a range of issues and proceedings, including: the economic issues associated with mergers and acquisitions (e.g., Sprint/T-Mobile, AT&T/Time Warner, Tribune/Nexstar); the economics and feasibility of deploying broadband networks; competitive analysis with respect to the market for business service data (BDS); market share and churn analyses; cost models; foreclosure and bargaining models; and, pole attachments matters. My curriculum vitae is attached to this declaration.
2. Counsel for Florida Power & Light Company ("FPL") requested that I review the Pole Attachment Complaint submitted to the Federal Communications Commission ("FCC" or "Commission") by BellSouth Telecommunications LLC d/b/a AT&T Florida ("AT&T"),

and respond to the declaration of Dr. Christian Dippon, who asserted that the pole attachment rates that FPL charged AT&T are not just and reasonable. Dr. Dippon based this assertion on his finding that: 1) FPL exercised undue bargaining power over AT&T in negotiating the terms and rates charged for pole attachments, and 2) the joint use agreement between FPL and AT&T provided no material benefit to AT&T above that provided to competitive local exchange carriers (CLECs) under their leasing arrangements with FPL.

3. Dr. Dippon did not prove that FPL's conduct is indicative of unequal bargaining power, nor did he demonstrate that AT&T does not enjoy material benefits under the joint use agreement compared to what CLECs receive under leased pole attachment arrangements.

I. Background

4. FPL is an electric utility serving 35 counties in Florida. AT&T is an incumbent local exchange carrier ("ILEC"). FPL and AT&T entered into a joint use pole attachment agreement in 1975,¹ at which time AT&T attached to 253,209 FPL poles and FPL attached to 173,256 AT&T poles, for a total of 426,465 poles and a roughly 60% / 40% ownership split. FPL's percentage of joint use pole ownership declined slightly through 1998, at which time AT&T attached to 322,943 FPL poles and FPL attached to 252,888 AT&T poles, for a total of 575,831 poles and a roughly 56% / 44% ownership split. The ratio of FPL / AT&T pole ownership changed again between 1998 and 2017. AT&T's pole ownership is higher in 2017 than it was when the joint use agreement was entered into (AT&T owned 173,256 poles in 1975 and owned 216,850 poles in 2017), but the FPL / AT&T ownership split shifted to roughly 66% / 34% in 2017. Overall, between the initiation of the joint use agreement in 1975 through the current period, AT&T's percentage of pole ownership has declined by about 6%.
5. The percentages of pole ownership are mainly the result of which party (FPL or AT&T) opted to construct new poles. From 1975 through 2017, the FPL-AT&T pole network increased by 208,943 poles, or by 49% over the 426,465 poles in place in 1975. This

¹ The 1975 joint use agreement was between FPL and an AT&T predecessor company, Southern Bell Telephone and Telegraph Company. The FPL-AT&T joint use agreement was amended in 2007.

PUBLIC VERSION

increase in poles was largely due to the infrastructure required to serve new customers. Both FPL and AT&T added poles on an annual basis through roughly 1998, when each company's pole count increased by more than 30,000 poles. After that time, AT&T engaged in relatively little pole construction. The change in the percentage of AT&T's pole ownership was thus due to AT&T's own initiatives; it could have maintained or increased the pole ownership ratio that was in place in 1975 by building out more poles².

6. It is my understanding that pole owners are required, by federal legislation, to allow non-ILEC telecommunications providers and cable television operators to attach to their respective poles at rates following formulas set by the FCC or state regulators. On the other hand, ILECs "have no statutory right to nondiscriminatory pole access under section 224(f)(1)."³ Electric utilities and incumbent local exchange carriers had entered into joint use agreements and shared joint pole networks before federal legislation (requiring that pole access be given to non-ILECs) was passed. Joint use agreements "reflect a decades-old contractual responsibility of incumbent LECs to share in infrastructure costs and also account for the fact that incumbent LECs still own many poles today."⁴ The arrangements under which FPL and AT&T attach to each other's poles, as well as any payments due one another, are specified in such a joint use agreement.
7. The rates that are charged by FPL to AT&T are different than the rates that FPL charges to non-ILECs (i.e., CLECs and cable companies). These latter rates are set under formulas specified by the FCC, referred to as the Telecom Rate and Cable Rate, respectively. Also, joint use agreements between ILECs and electric utilities "implicate rights and responsibilities that differ from those in typical pole lease agreements between utilities and telecommunications carriers and cable operators."⁵ That is, joint use agreements typically provide ILECs with benefits that are not similarly conveyed to non-ILECs. FPL indicates

² Declaration of Thomas J. Kennedy on Behalf of Defendant Florida Power and Light Company, ¶ 8.

³ In the Matter of Implementation of Section 224 of the Act, a National Broadband Plan for Our Future, WC Docket No. 07-245, GN Docket No.09-51, Report and Order and Order on Reconsideration, April 7, 2011 (2011 Pole Attachment Order), ¶ 207.

⁴ *Id.*, ¶ 216 n.654.

⁵ 2011 Pole Attachment Order, ¶ 217.

that this is the case with respect to the FPL-AT&T joint use agreement; it provides for benefits that are not provided to non-ILECs under lease arrangements.

II. AT&T's Complaint

8. In the current Complaint, AT&T claims that FPL is overcharging it for pole attachments because, it alleges, the arrangements under which AT&T is able to attach to FPL poles are similarly situated to the arrangements provided by FPL to non-ILECs, while the rates for pole attachments that FPL charges AT&T exceed those that FPL charges non-ILECs under lease arrangements. AT&T asserts that this combination of allegedly similarly situated services and a higher rate is evidence that rates that FPL is charging AT&T are not just and reasonable. AT&T also claims that FPL was able to charge these higher rates because it owns more poles in the FPL-AT&T joint pole network than does AT&T, and was thus able to exert bargaining power over AT&T.
9. The FCC provided guidance as to its standard for “just and reasonable” rates in its 2011 and 2018 Pole Attachment Orders. In its 2011 Pole Attachment Order, the FCC drew a distinction between existing versus new agreements between electric utilities and incumbent local exchange carriers such as AT&T. The Commission found that many joint use agreements between utilities and ILECs were entered into at a time when the parties had more balanced negotiating positions, and concluded that it was “unlikely to find that the rates, terms and conditions in existing joint use agreements unjust or unreasonable.”⁶ However, with respect to new agreements – i.e., those entered more recently, when pole ownership may be more skewed to utilities – the FCC found that, when an ILEC can demonstrate that “it is obtaining pole attachments on terms and conditions that leave them comparably situated to telecommunications carriers or cable operators,” then “competitive neutrality counsels in favor of affording incumbent LECs the same rate as the comparable provider.”⁷ On the other hand, in circumstances when the pole attachment agreement provides the ILEC with a material advantage over telecommunications carriers or cable

⁶ 2011 Pole Attachment Order, ¶ 207.

⁷ *Id.*, ¶ 217.

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operators, the FCC found that a higher rate can be charged, and that the “high-end telecom rate” could serve as a reference point in making such a determination.⁸ I understand that, under the 2011 Pole Attachment Order, incumbent LECs carry the burden of proving that their pole attachment arrangements are similarly situated to the arrangements provided to non-ILECs.⁹

10. In addition, the FCC indicated in its 2011 Pole Attachment Order that evidence of bargaining power in setting pole attachment rates is an important consideration in the FCC’s evaluation of ILEC pole attachment complaints.¹⁰
11. It is my understanding that, in its 2018 Pole Attachment Order, the Commission switched the burden of establishing whether there are similarly situated circumstances, from the ILECs to the utilities. Specifically, it adopted a presumption that, “for newly-negotiated and newly-renewed pole attachment agreements between incumbent LECs and utilities, an incumbent LEC will receive comparable pole attachment rates, terms and conditions as a similarly-situated telecommunications carriers or a cable television system.”¹¹ In cases in which the utility is able to rebut the similarly situated presumption, the FCC ruled that the pre-2011 Pole Attachment telecommunications carrier rate (i.e., the “old telecom rate”) is the maximum rate that a utility and ILEC may negotiate.¹²
12. Counsel for FPL has indicated to me that the FPL contends that its joint use agreement with AT&T should not be affected by either the 2011 or 2018 Pole Attachment Orders because it was an existing joint use agreement at the time that the FCC issued its 2011 Pole

⁸ The FCC modified the pole attachment rate formula under which pole owners (i.e., electric utilities and ILECs) charge non-ILEC telecommunications companies for access to poles in 2011. The modified rate is generally referred to as the “new telecom rate.” The formula under which pole attachment rates were calculated for non-ILEC telecommunications companies prior to the 2011 Pole Attachment Order is referred to as the “old telecom rate,” the “pre-existing telecom rate” or the “high-end telecom rate.”

⁹ 2011 Pole Attachment Order, ¶ 217.

¹⁰ *Id.*, ¶ 215.

¹¹ In the Matter of Accelerating Wireless Broadband Deployment by Removing Barriers to Infrastructure Investment; Accelerating Wireline Broadband Deployment by Removing Barriers to Infrastructure Investment, WT Docket No. 17-79, WC Docket No. 17-84, Third Report and Order and Declaratory Ruling, August 2, 2018 (2018 Pole Attachment Order), ¶ 123.

¹² 2018 Pole Attachment Order, ¶ 129.

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Attachment Order. However, for purposes of my review, Counsel directed me to consider the guidelines from the FCC in its 2011 Pole Attachment Order in any analysis that I conduct.

13. AT&T retained Dr. Christian Dippon as its economic expert to opine on whether or not the pole attachment rates charged by FPL to AT&T were just and reasonable. Dr. Dippon concluded that the rates that FPL charged AT&T for pole attachment are not just and reasonable because the rate charged is higher than the rate charged to non-ILECs for comparable pole attachment arrangements.
14. Dr. Dippon specified two requirements for determining whether the rate that FPL charges AT&T for poles attachment is just and reasonable: “First, a just and reasonable rate must be competitively neutral. That is, the rate must be consistent with the rates charged to similarly situated telecommunications attachers. Second, the just and reasonable rate charged to an ILEC is one that falls within a specified range between the FCC’s new telecom and preexisting telecom rate formulas.”¹³ Dr. Dippon also concluded that FPL was able to charge higher rates because it has a superior bargaining position over AT&T (i.e., it owns more poles that are in the FPL-AT&T joint use network than does AT&T).
15. I have reviewed the evidence underlying Dr. Dippon’s claim that FPL exerted bargaining power over AT&T with respect to pole attachments, and his conclusion that the pole attachment arrangements provided to AT&T under the joint use agreement is similarly situated to the attachment arrangement afforded non-ILECs under lease arrangements with FPL. I find that the evidence available does not support either of these assertions.
16. Dr. Dippon’s conclusion regarding FPL’s bargaining power was based on his review of the percentage of FPL ownership in the FPL-AT&T joint pole network and upon representations made by AT&T personnel concerning FPL’s behavior during negotiations and other communications with AT&T.¹⁴ As I explain below, well established bargaining theory recognizes that, in this case, a majority percentage of pole ownership is not the sole

¹³ Affidavit of Christian M. Dippon In Support of Pole Attachment Complaint, ¶ 20.

¹⁴ Dippon Declaration, ¶ 18.

indicator of bargaining power, and that consideration of outside options (for both AT&T and FPL) serves to offset any potential bargaining power differentials. FPL asserts that it offered to buy AT&T's poles and negotiate (with AT&T) contractual arrangements and pole attachment rates similar to those conveyed to non-ILECs.¹⁵ This offer indicates that AT&T faced a lower cost alternative (compared to the alternatives available to FPL), and therefore mitigates any bargaining power differential which might arise from pole ownership percentages. In addition, FPL's behavior in negotiations – offering its counterparty a lower cost alternative – runs counter to the type of behavior expected from a firm exerting superior bargaining power.

17. Dr. Dippon, as well as Ms. Dianne Miller and Mr. Mark Peters, also found that “AT&T does not enjoy material net benefits” under its joint use agreement with FPL,¹⁶ compared to pole attachment arrangements provided by FPL to non-ILECs under lease arrangements (by way of the FCC's regulated Telecom rate). This is in contrast to the benefits summarized by Mr. Kennedy in his declaration and noted by the FCC in its review in prior pole attachment complaints.¹⁷ It also diverges from the preference revealed by AT&T in opting to continue with a joint use agreement rather than pursue FPL's offer to buy AT&T's poles and negotiate contractual arrangements and pole attachment rates similar to those conveyed to non-ILECs. Such a preference indicates that AT&T perceives that the pole attachment arrangements under the joint use agreement is superior to that provided under the lease arrangements.

III. FP&L's Conduct is Not Indicative of undue bargaining power

18. The 1975 Joint Use Agreement targeted the percentage shares of pole ownership at 47.4% for AT&T and 52.6% for FPL, referred to in the agreement as the “objective

¹⁵ Kennedy Declaration, ¶ 36.

¹⁶ Dippon Declaration, ¶¶ 33-40

¹⁷ In the Matter of Verizon Florida LLC, Complainant v. Florida Power and Light Company, Respondent. Docket No. 14-216 File No. EB-14-MD-003, February 11, 2015, ¶ 24.

percentage(s).”¹⁸ The objective percentage of pole ownership is an important measure in the joint use agreement because payments (i.e., equity settlements) are due only when one party’s actual pole ownership is less than the agreed upon objective percentage.¹⁹ These objective percentages were negotiated between FPL and ATT, as evidenced by a May 1975 letter from Southern Bell to FPL, in which AT&T summarized its proposal and FPL’s acceptance of space usage and adjustment rate provisions.²⁰

19. When the FPL-AT&T joint use agreement was initiated in 1975, AT&T owned roughly 40% of the poles in the joint pole network while FPL owned the remaining 60%. Southern Florida was, and continues to be, a growth area, so any shortfall between the objective percentage for AT&T specified in the joint use agreement (47.4%) and AT&T’s then actual percentage of pole ownership (roughly 40%) was envisioned to be made up through AT&T’s construction of new poles.²¹
20. Review of pole ownership statistics indicates that AT&T increased its percentage ownership of poles to roughly 44% in 1988 and maintained this ownership percentage through 1998.²² Subsequently, the percentage of AT&T pole ownership declined, eventually reaching its current level of 34%. This reduction in AT&T’s percentage of pole ownership is due to AT&T not engaging in new pole construction. Furthermore, AT&T has not sought to purchase any joint use poles from FPL as a means of attaining the objective percentage of pole ownership.²³ Thus, any reduction in the percentages of pole

¹⁸ Joint Use Agreement Between Florida Power & Light Company and Southern Bell Telephone and Telegraph Company, § 1.1.19.

¹⁹ Joint Use Agreement, § 10.9. “The party having less than its objective percentage ownership of jointly used poles shall pay an equity settlement to the other party for the calendar year a sum equal to the appropriate adjustment rate times the number of poles it is deficient from its objective percentage of ownership.”

²⁰ May 19, 1975, C.S. Ferris, Chief Engineer, Southern Bell, to J.M. Tinsley, Chief Engineer, attached to the Kennedy Declaration as Exhibit B.

²¹ Joint Use Agreement, § 4.3. “...the party owning less than its objective percentage of joint use poles under this Agreement shall erect or replace within a reasonable time any joint use pole, or any other pole to be so used, that is required by either of the parties and be the owner thereof.”

²² Kennedy Declaration, ¶ 35.

²³ *Id.*, ¶ 34.

ownership largely reflects AT&T's own preferences. Going forward, AT&T can increase its percentage of pole ownership if it is willing to construct new poles. It can also request transfers of pole ownership from FPL.

21. The decline in AT&T's pole ownership percentage also coincides with the change in regulation away from a rate of return framework in which earnings are based on a rate base. The shift away from rate-of-return regulation for ILECs has reduced their incentives to invest in assets²⁴
22. There is no evidence that FPL has taken any proactive action to exploit its alleged increase in bargaining power. Specifically, it has not changed the terms or formulas in the original joint use agreement in order to realize higher rates. As indicated earlier, payments from AT&T to FPL are due only when AT&T's percentage of pole ownership falls below the agreed upon objective percentage and, then, payment is only due for the "number of poles it is deficient from its objective percentage of ownership"²⁵ multiplied by the adjustment rate, which is based on a formula which calculates the "average annual cost of joint use poles for the next preceding year," and where the annual cost is defined as the "average historic in-place cost of joint use poles ... multiplied by an annual charge rate comprised of amortization factors, taxes and other elements of cost as determined in accordance with acceptable accounting practices."²⁶ This formula, based on actual costs, has not changed since the Joint Use Agreement was signed in 1975.
23. Telling evidence of the absence of bargaining power on the part of FPL can be found in the discussions and negotiations between FPL and AT&T themselves. AT&T and Dr. Dippon assert that AT&T was held hostage by FPL, with FPL refusing to consider alternatives to

²⁴ This is not to suggest that AT&T or other ILECs have neglected to invest in the infrastructure that is needed to effectively deliver services. Also, with respect to the regulation of electric utilities, some analysts have criticized rate of return regulation as producing the unintended consequence of incentivizing utilities to over-invest in assets in order to build up their rate base and, hence, earnings. To counteract such an incentive, state regulatory commissions, including the Florida Public Service Commission reviews the prudence of investments and rate base as part of the rate case process.

²⁵ Joint Use Agreement, § 10.9.

²⁶ *Id.*, § 10.6.

the rates set forth in the joint use agreement.²⁷ However, as indicated above, FPL presents an entirely different account. FPL agrees with AT&T that it does not see a reason to change the joint use agreement, but also indicates that it has presented AT&T with alternative arrangements. Specifically, FPL indicates that, over the last five years, it has offered to purchase AT&T's poles and negotiate attachment rates and arrangements that would be comparable to what FPL provides to non-ILECs.²⁸ However, FPL indicates that AT&T was largely unresponsive to its offer.

24. FPL's offer and AT&T's decision to not pursue it is informative on two counts. First, AT&T's preference reveals that it finds value in the arrangements for pole attachments provided under the joint use agreement over that afforded under lease arrangements. Second, FPL's behavior does not indicate that it was exerting bargaining power to force AT&T into continuing with the joint use agreement. Instead, any impasse in negotiation stems from AT&T's preference for retaining the joint use agreement pole attachment while also demanding that it pay the rate associated with a differently situated pole attachment arrangement (i.e., under the non-ILEC telecom rate).
25. In addition, relying on the percentage of pole ownership as a primary indicator of bargaining power is misleading for the case at hand. Joint pole ownership involves mutual dependence on pole access, which differs significantly from the buyer / seller relationships underlying traditional market power analysis (i.e., where buyers of a service are also not sellers of the same service). FPL would be significantly harmed by foreclosure of access to the 40% of joint use network poles that were owned by AT&T in 1975, and will likewise be harmed by foreclosure of access to the 34% of that are currently owned by AT&T. It would be irrational for FPL to engage in a game of brinksmanship with AT&T, irrespective of any potential differences between FPL and AT&T in harm associated with loss of the joint use agreement.

²⁷ Dippon Declaration, ¶ 14.

²⁸ Kennedy Declaration, ¶ 36.

26. The Commission itself has acknowledged that the percentage of pole ownership is not the sole indicator of bargaining power. In its 2011 Pole Attachment Order, the Commission explained that well established bargaining theories “predict that each party will consider its best alternative to a negotiated agreement when negotiating.” Specifically, the Commission noted that, although pole ownership percentage may be an initial indicator of bargaining power, “if there were less-costly alternatives for the incumbent LEC to pole deployment, or additional costs that the electric utility would need to consider under the best outside alternative, this would reduce the disparity in the relative bargaining power of the parties.”²⁹
27. In the absence of mandatory ILEC pole access, the least cost alternatives for AT&T and FPL would be the avoided cost associated with building out an independent pole network – a very costly alternative. However, AT&T was also given the option to withdraw from pole ownership altogether, as explained in Mr. Kennedy’s declaration. This option is almost certain to be considerably less costly than would be the case should AT&T have to deploy its own pole network. This next best option serves to offset any potential bargaining power differences that might accompany a differential in present-day pole ownership.

IV. The Joint Use Agreement and Non-ILEC Attachment Arrangements Are Not Comparably Situated

28. An important part of the FCC’s 2011 and 2018 Pole Attachment Orders concerns the terms and benefits associated with incumbent LEC joint use agreements compared to those available to non-ILECs and cable companies; that is, determining whether or not the arrangements under which ILECs are able to attach to utility poles are similarly (or comparably) situated with the arrangements under which non-ILECs are permitted to attach. I understand, based on a representation from Counsel and my reading of the FCC’s 2011 Pole Attachment Order, that AT&T has the burden of demonstrating that the

²⁹ 2011 Pole Attachment Order, ¶ 206 n. 618.

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arrangements for pole attachments afforded it under the Joint Use Agreement are similarly situated with those provided to non-ILECs under their lease arrangements with FPL.³⁰

29. The Declarations of Ms. Dianne Miller and Mr. Mark Peters assert that AT&T receives no material benefits under the joint use agreement compared to what is received by non-ILECs under lease arrangements with FPL. Dr. Dippon also addresses this issue, and concludes that, when the cost of AT&T's reciprocal rights and responsibilities under the joint use agreement are taken into account, AT&T does not receive any net material benefit. Dr. Dippon also points out that the benefits that AT&T realizes under the joint use agreement (above those realized by non-ILECs under lease arrangements) are also realized by FPL when it uses AT&T poles, so any benefits that AT&T receives under the joint use agreement are, effectively, cancelled out. Thus, according to Ms. Miller, Mr. Peters and Dr. Dippon, AT&T would be at least equally well off – and possibly better off – if it were able attach to FPL's poles under the non-ILEC lease arrangement and have no reciprocal obligation to provide joint use type services to FPL.
30. However, their assertions are contradicted by AT&T's own actions and revealed preference. A reasonable and very practical test of comparability is whether or not AT&T is willing to substitute its joint use agreement for an arrangement that is the same or comparable to that provided by FPL to non-ILECs. As indicated above, FPL has sought several times to purchase AT&T's poles and negotiate attachment arrangements and rates that would be comparable to the arrangements and rates that FPL provides to non-ILECs.³¹ Such a conversion would remove any doubt about whether or not ILEC and non-ILEC attachment arrangements are comparably situated. However, FPL indicates that AT&T did not respond to its offers, strongly suggesting that AT&T does not consider that the two pole attachment arrangements – one under the Joint Use Agreement and the other under FPL's lease arrangements to non-ILECs – are similarly situated.

³⁰ 2011 Pole Attachment Order, ¶ 217.

³¹ Kennedy Declaration, ¶ 36.

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31. AT&T's revealed preference is also aligned with representations made by FPL concerning the benefits that AT&T receives under the joint use agreement compared to those received by non-ILECs under leasing arrangements. As summarized in the Declaration of Thomas Kennedy, these material net benefits include: guaranteed access and capacity (including FPL modify replacing existing poles to meet height and/or strength required to accommodate AT&T's needs); make-ready avoidance; and, savings in terms of time value of money (AT&T pays any fees due annually in arrears under the joint use agreement, whereas non-ILECs pay for leasing semi-annually in advance).³²
32. These material advantages are also in line with the net benefits noted by the FCC in prior reviews. These include the value associated with the ILEC occupying the lowest usable space on a pole, utility accommodation of ILEC space needs by installing taller poles, and waived make-ready costs and post-inspection fees.³³ The Commission also recognized that ILECs receive value from access (to utility poles) itself,³⁴ which would likely be significant in monetary terms.
33. In addition to these ongoing benefits, AT&T also realized considerable benefits over time, in terms of cost and deployment efficiencies associated with its joint pole use arrangement with FPL. The joint use agreement formed a sharing arrangement through which each party was able to reduce its costs of service without compromising quality. This gave AT&T ready and unfettered access to the joint pole network as if it were its own. Seamless access to a pole network in the era before implementation of the Telecommunications Act of 1996 also allowed AT&T to establish itself as a reliable service provider in the eyes of its customers, which was a key factor in enabling the company to maintain a strong market share in the evolving market.

³² Kennedy Declaration, ¶¶ 9-27.

³³ In the Matter of Verizon Florida LLC, Complainant v. Florida Power and Light Company, Respondent. Docket No. 14-216 File No. EB-14-MD-003, February 11, 2015, ¶ 24.

³⁴ *Id.* As indicated earlier, the Commission recognized that ILECs "have no statutory right to nondiscriminatory pole access under section 224(f)(1)." 2011 Pole Attachment Order, ¶ 216 n.654.

V. Conclusion

34. Two of the foundational elements underlying AT&T's assertion that the pole attachment rates charged by FPL are unjust and unreasonable are without basis and contradicted by the available evidence. Specifically: 1) bargaining theory and FPL's behavior do not support allegations that FPL exerted bargaining power over AT&T and 2) AT&T's revealed preference (in opting to not accept FPL's offer to buy AT&T's poles and negotiate a pole attachment arrangement that would be comparable to that provided to non-ILECs) indicates that AT&T receives positive net benefits under the joint use agreement.

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Pursuant to 28 U.S.C. § 1746, I declare under penalty of perjury that the foregoing is true and correct.

Executed on September 12, 2019


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William Zarakas is a Principal with The Brattle Group, an economics consulting firm, and an expert on economic and regulatory matters in the electricity, telecommunications and media industries. He heads Brattle's retail energy practice, and leads much of Brattle's work concerning regulatory and business models, cost and rate analysis, infrastructure deployments and grid modernization, and smart grid and utility platform issues. Mr. Zarakas has authored reports and articles on performance based regulation (PBR), "utility of the future" visions and implementation, and inter-modal competition in the retail electricity sector.

Mr. Zarakas also has a leadership role in Brattle's practice in telecommunications and media. He has provided expert reports and testimonies in a range of regulatory proceedings concerning competition issues in the telecommunications industry, access and infrastructure sharing, forbearance from price regulation, and foreclosure and price effects associated with mergers among telecom carriers and media companies. He has also developed models concerning the economics and financial feasibility of building-out broadband infrastructure, conducted valuations of a wide range of wireless spectrum bands and holdings, and examined the distribution of royalties and retransmission fees in the cable and satellite television industries.

He has also led special investigations on behalf of corporate boards of directors and audits of management practices and operational and financial performance on behalf of regulatory commissions.

Mr. Zarakas has provided testimony and expert reports before the Federal Communications Commission, the Federal Energy Regulatory Commission, the Securities and Exchange Commission, the Copyright Royalty Judges (Library of Congress), the U.S. Congress, state regulatory agencies, arbitration panels, foreign governments and courts of law.

He holds an M.A. in economics from New York University and a B.A., also in economics, from the State University of New York.

Utility Regulatory and Business Models. Analyzed, advised and/or testified on matters concerning regulatory frameworks, performance-based regulation (PBR) and utility business models, notably with respect to emerging competitive alternatives and network integration. Recent work includes:

- Analyzed implementation of New York's Reforming the Energy Vision by modeling the economics of the utility platform model, access pricing and financial impacts of retail competition on utility.
- Analyzed, advised and/or testified on matters concerning performance incentive mechanism (PIMs); e.g., analyses of: New York's "earnings adjustment mechanisms" on behalf of New York's six investor owned utilities) and performance measures and incentive structures on behalf of the Hawaiian Electric Companies.
- Surveyed and analyzed PBR frameworks and applications, including multi-year rate plans (MRPs), PIMs and other alternative regulatory mechanisms, including the U.K.'s "RIIO" model.

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- Surveyed and analyzed regulatory approaches to setting electric distribution reliability standards around the world on behalf of the Australian Energy Market Commission (AEMC).
- Modeled multi-variate “utility of future” scenarios using system dynamic approach on behalf of utilities and industry groups.
- Advised Board of Directors of a major generation and transmission (G&T) cooperative and its member electric distribution cooperatives on matters concerning: asset valuations, risk management strategy, merger and acquisition options, and outlook for retail electric markets.

Infrastructure and Investment Analysis. Analyzed and testified on matters concerning infrastructure economics and financial feasibility. Work includes:

- Led benefit-cost and economic “break-even” analysis of utility system reliability and resilience investment using a value of lost load (VOLL) methodology on behalf of Public Service Electric & Gas Company (PSE&G).
- Developed cost and revenue models to estimate costs, feasibility and customer rates associated with deploying wireless broadband to rural areas on behalf of GCI Communications.
- Conducted financial feasibility analysis concerning deployment of a broadband communications network for an Asian electric utility.
- Analyzed economics and financial feasibility of providing (wholesale) transport and (retail) broadband services for multiple U.S. electric utilities.
- Led comprehensive modeling concerning costs and rates for unbundled network elements (UNEs), undertaken in fulfillment of requirements associated with the Telecommunications Act of 1996, using the Total Element Long Run Incremental Cost (TELRIC) methodology.

Due Diligence, Valuation and Management Audits. Work includes:

- Due diligence of northwestern U.S. electric and gas utility on behalf of buyer; analysis included comprehensive sales, revenue, and operating and capital cost modeling and scenarios.
- Led numerous analyses of the values of wireless spectrum in the U.S., Canada, the Middle East and North Africa (MENA), and other geographic markets. Scope of analyses included: PCS, AWS, 2.3-2.5 GHz, SMR, PLMR, IVDS, MSS and Big Leo spectrum bands, among others, for purposes of planning, transactional analysis, regulatory proceedings, domestic and international arbitration, and commercial litigation.
- Led strategic organizational options analysis for the Board of Trustees of the Long Island Power Authority (LIPA).
- Led special investigations; e.g., economic analysis of “swap” transaction for the Special Committee of the Board of Directors of Global Crossing.
- Led management and/or regulatory audits of utilities and telecommunications carriers on behalf of state regulatory commissions Alabama, Kentucky, Maryland, New York and Pennsylvania.

Competition and Antitrust. Recent work includes:

- Analyzed prospective merger savings and divestiture losses for electric and gas utilities in merger applications before the U.S. Securities and Exchange Commission (SEC).
- Analyzed effectiveness of retail competition in U.S. electricity markets.

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- Examined market structure and degree of competition in U.S. retail telecom markets, with regard to Petitions for FCC to forbear from price regulating resale services and UNEs.
- Conducted merger simulation and horizontal and vertical foreclosure analyses for telecom and media mergers; e.g., Comcast-Time Warner Cable; AT&T-Time Warner; Sinclair-Tribune; and, Disney-Fox.
- Led comprehensive analysis of competition in U.S. markets for business data services (BDS, previously referred to as special access).
- Analyzed acquisition price premium in merger of cross-state gas and electric utilities.

Other Regulatory Analyses. Recent work includes:

- Led benchmarking studies of utility costs and regulatory practices.
- Analyzed markets for and costs of providing utility pole attachments.
- Calculated total factor productivity (TFP) and X factors in price regulation proceedings involving utilities before state regulatory commissions and incumbent telecommunications carriers before the FCC.
- Analyzed costs and value of retransmitted television programming in cable and satellite video markets on behalf of Music Claimants in proceedings involving distribution of royalty funds.
- Examined impact of regulatory fees and constraints on economic output in 22 countries in the Middle East and Africa for international mobile carrier.

Expert Testimony

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WILLIAM P. ZARAKAS

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WILLIAM P. ZARAKAS

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WILLIAM P. ZARAKAS

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Exhibit C

PUBLIC VERSION

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

BELLSOUTH)	
TELECOMMUNICATIONS, LLC,)	
d/b/a AT&T Florida,)	
)	Proceeding No. 19-187
<i>Complainant,</i>)	
)	Bureau ID No. EB-19-MD-006
v.)	
)	
FLORIDA POWER & LIGHT COMPANY,)	
)	
<i>Respondent.</i>)	

DECLARATION OF DAVID BROMLEY
IN OPPOSITION TO POLE ATTACHMENT COMPLAINT

1. My name is David T. Bromley, and my business address is Florida Power & Light Company ("FPL" or the "Company"), 700 Universe Boulevard, Juno Beach, Florida 33408.
2. I am over the age of eighteen and am otherwise competent to testify.
3. I have been employed by Florida Power & Light Company ("FPL") since 1983. I am the Manager, Regulatory Services for FPL's Power Delivery business unit, where my job responsibilities include, among other things, overseeing FPL's joint use and pole attachment agreements, processes and policies and ensuring Power Delivery's compliance with various regulatory agencies' (e.g., Florida Public Service Commission, Federal Communication Commission, Florida Department of Transportation, local government) rules, regulations and requirements.
4. I hold a Bachelor of Arts Degree in Business Administration from Otterbein College, graduating in 1976, and have over 40 years of education and work experience in accounting and electric utility regulatory compliance.

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5. The purpose of my declaration is to provide certain factual detail regarding the dealings between FPL and BellSouth Telecommunications, d/b/a AT&T Florida (“AT&T”) related to the January 1, 1975 Joint Use Agreement (“1975 JUA”) in the time before the filing of AT&T’s Complaint.

6. From 1975 to early 2017, AT&T regularly and promptly paid FPL the joint use invoice tendered by FPL for net rental charges calculated pursuant to the adjustment rate under the 1975 JUA.

7. On March 5, 2018, FPL sent an invoice to AT&T in the principal sum of [REDACTED] which represented the net amount due for AT&T’s attachments on FPL poles during the 2017 calendar year. AT&T did not timely pay this invoice.

8. On April 3, 2018 and April 20, 2018, phone discussions occurred between FPL and AT&T regarding the processing of the March 5, 2018 invoice. During both calls, AT&T raised “concerns” regarding the calculations and financial data underlying the JUA rate calculation.

9. Over the next several months, AT&T responded to FPL’s repeated requests for payment by claiming it was going through a “vetting process” which required approval by several management levels. AT&T submitted several questions regarding the calculation of the rates under the terms of the JUA and FPL promptly responded each time.

10. Months and months passed without AT&T paying FPL’s joint use invoice. During that time, AT&T never provided FPL written notification of the specific allegations it had regarding alleged issues with the 1975 JUA or any specifics regarding the 1975 JUA rental rates.

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11. Indeed, AT&T never requested that FPL renegotiate the 1975 JUA rates, provided any specifics as to what AT&T believed was a lawful rate or even stated how much AT&T believed it owed FPL for use of its joint use poles. AT&T did not even provide such information in the parties' direct negotiations or at their mediation. AT&T simply persisted in claiming the 1975 JUA rate was unlawful and demanding that FPL explain the justification for the 1975 JUA rate.

12. In the intervening months, FPL requested a face-to-face meeting with AT&T for the purpose of resolving the dispute over non-payment of the March 5, 2018 joint use invoice. During discussions, FPL expressly inquired whether AT&T was asking to renegotiate the rate. AT&T stated that it was not asking to renegotiate.

13. On February 1, 2019, after a year had passed with no payment on the previous invoice for the 2017 calendar year, FPL submitted another invoice, in the principle sum of [REDACTED] seeking payment for the net rent due for AT&T's occupancy on FPL poles for the 2018 calendar year. In response, FPL received no payment or written objection from AT&T.

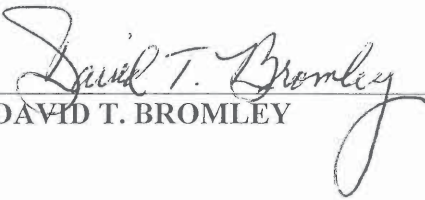
14. In addition, AT&T still did not make any attempt to identify what it thought was due for its occupancy on the FPL poles during the 2018 calendar year. AT&T remained silent and continued to withhold all payments to FPL.

15. On July 1, 2019, AT&T delivered payment to FPL in the form of two checks totaling [REDACTED] which represented the outstanding principal balance, absent interest, due for rental charges on the FPL invoices for the 2017 and 2018 calendar years.

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Pursuant to 28 U.S.C. § 1746, I declare under penalty of perjury that the foregoing is true and correct.

Executed on September 11, 2019



DAVID T. BROMLEY

Exhibit D

PUBLIC VERSION

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

BELLSOUTH)	
TELECOMMUNICATIONS, LLC,)	
d/b/a AT&T Florida,)	
<i>Complainant,</i>)	Proceeding No. 19-187
)	Bureau ID No. EB-19-MD-006
v.)	
)	
FLORIDA POWER & LIGHT COMPANY,)	
)	
<i>Respondent.</i>)	

**DECLARATION OF RENAE B. DEATON ON BEHALF
OF DEFENDANT FLORIDA POWER AND LIGHT COMPANY**

I, RENAE B. DEATON, having personal knowledge of the facts contained herein, state as follows:

1. My name is Renae B. Deaton, and my business address is Florida Power & Light Company ("FPL" or the "Company"), 700 Universe Boulevard, Juno Beach, Florida 33408.
2. I am over the age of eighteen and am otherwise competent to testify.
3. I am employed by FPL as Director, Clause Recovery & Wholesale Rates, in the Regulatory & State Governmental Affairs Department and have worked for FPL for the past 21 years.
4. I hold a Bachelor of Science in Business Administration and a Master of Business Administration from Charleston Southern University.
5. For the past 30 years, I have held various positions dealing with rates and cost of service. Prior to my current position, I held the positions of Regulatory Affairs Manager, Senior Manager of Rate Design, Senior Manager of Cost of Service and Load Research, and Director, Cost Recovery Clauses. I assumed my current position in October 2017. I have testified on numerous occasions on rates and cost of service issues before the Florida Public Service Commission and the Federal Energy Regulatory Commission. My current and prior positions' responsibilities included developing FPL's pole attachment rates.
6. The purpose of my declaration is to explain and support the calculation of the pre-existing and new telecom rates pursuant to the formulas adopted by the Federal Communications Commission ("FCC"). I have calculated the rates for BellSouth Telecommunications',

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d/b/a AT&T Florida (“AT&T”) use of FPL’s distribution poles and FPL’s use of AT&T’s poles.

I. Formula Rate Methodology

7. **Telecom Attachment Rates for AT&T Use of FPL’s Poles.** I have calculated pole attachment rates for AT&T’s attachments to FPL’s distribution poles under the pre-existing and the new formula rate methodologies for the rate years 2014 through 2019. The pre-existing formula rate methodology was specified in the FCC’s Consolidated Partial Order on Reconsideration No. 01-170 (May 25, 2001) (“Pre-existing Telecom Rate”). The new formula rate methodology is specified in the FCC’s Report and Order on Reconsideration No. 11-50 (April 7, 2011) (the “New Telecom Rate”). My calculations are attached as Exhibit RBD-1.

8. **New Telecom Attachment Rates for AT&T Use of FPL’s Poles**

The New Telecom Rate is comprised of two basic components: (i) the space factor that reflects the percentage of useable space, and (ii) the annual pole costs.

That rate is: Rate = Space Factor x Cost

The Space Factor formula is:

$$\text{Where Space Factor} = \frac{\left(\frac{\text{Space Occupied}}{\text{Pole Height}} + \left(\frac{2}{3} \times \frac{\text{Unusable Space}}{\text{No. of Attaching Entities}} \right) \right)}{\text{Pole Height}}$$

I calculated a Space Factor of 24.67% for FPL’s distribution poles based on the following inputs provided by FPL witness Thomas J. Kennedy:

FPL Distribution Poles	
AT&T Space Used	4.5
Number of Attaching Entities	2.99
Average Pole Height	40.4
Usable Space	15.9
Unusable Space	24.5

The Cost formula is: N x (Net Cost of a Bare Pole x Carrying Charge Rate)

Where N =

in Service Areas where the number of Attaching Entities is 5 = 0.66

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in Service Areas where the number of Attaching Entities is 4 = 0.56
in Service Areas where the number of Attaching Entities is 3 = 0.44
in Service Areas where the number of Attaching Entities is 2 = 0.31
in Service Areas where the number of Attaching Entities is not a whole number N
is interpolated from the cost allocator associated with the nearest whole numbers
above and below the number of Attaching Entities.

The net cost per bare pole formula is: Net Pole Investment / Number of Poles.

The formula for Net Pole Investment in distribution poles is:

[Gross Investment in FERC Account 364 - Accumulated Depreciation for FERC
Account 364 - Accumulated Deferred Income Taxes ("ADIT") allocated to poles] *
Bare Pole Factor]

The data for the gross pole investment is taken from the FERC Form No. 1 for FERC
Account 364 (Poles, Towers & Fixtures). The accumulated depreciation associated
with FERC Account 364 is taken from the FPSC Status Report Schedule II. Specific
page, line, and column references to the schedules for the data inputs can be found on
my exhibit. ADIT is allocated to poles based on the ratio of gross pole investment to
total gross electric plant investment. The ADIT includable for FCC telecom rates is
the net of the deferred tax assets and liabilities in accounts 190, 281, 282, 283. The
Bare Pole Factor is 85%.

The carrying charge rate is the sum of the carrying charge rates for the following
elements: (1) administrative, (2) maintenance, (3) depreciation, (4) taxes, and (5)
return.

The administrative element carrying charge rate is calculated by dividing the
administrative and general expenses from FERC Accounts 920-935 by net electric plant
investment. The net electric plant investment is calculated by taking the gross electric
plant in FERC Accounts 101-107 and 114, less accumulated depreciation in FERC
Accounts 108, 110, 111, and 115, less ADIT in FERC Accounts 190, 281, 282, and
283. The data is taken from the FERC Form No. 1.

The maintenance element carrying charge rate is calculated by dividing the
maintenance expenses in FERC Account 593 (Maintenance of Overhead Lines) by the
net investment associated with overhead lines (FERC accounts 364, 365 and 369). The
net investment associated with overhead lines is the gross investment in FERC accounts
364, 365 and 369 less the associated accumulated depreciation and less the ADIT
allocated to overhead lines. ADIT is allocated to overhead lines based on the ratio of
gross investment accounts 364, 365 and 369 to total gross electric plant investment.
The data is taken from the FERC Form No. 1 and the FPSC Status Report Schedule II.

The depreciation element carrying charge rate is calculated by dividing the depreciation
expense for poles (FERC Account 364) by the net investment in FERC Account 364.
The depreciation expense is determined by multiplying the depreciation rate for poles

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in FERC Account 364 by the gross investment in FERC Account 364. The gross and net investment for poles is the same as that used in the net cost per bare pole calculation.

The taxes element carrying charge rate is calculated by dividing net tax expenses in FERC Accounts 408.1, 409.1, 410.1, 411.4, and 411.1 (credit) by net electric plant investment. Net electric plant investment is the same value used in the administrative element carrying charge rate calculation. The data is taken from the FERC Form No. 1.

The return element is set to the FCC default rate. The FCC default rate is 11.25% for rate years 2014 and 2015. Beginning July 1, 2016, the FCC default rate is reduced 25 basis points per year until reaching 9.75% on July 1, 2021. The return element is calculated as the average of the rate in effect on January through June and July through December of each year. For rate years 2016-2019, the return element is shown in the following table.

Rate Year	Jan – Jun	Jul – Dec	Average Return
2016	11.25	11.00	11.125
2017	11.00	10.75	10.845
2018	10.75	10.50	10.625
2019	10.50	10.25	10.375

The resulting New Telecom Rates for AT&T's attachments to FPL's distribution poles are as follows:

Rate Year	Distribution
2014	
2015	
2016	
2017	
2018	
2019	

9. **Pre-Existing Telecom Attachment Rates for AT&T Use of FPL's Poles**

The formula for the Pre-Existing Rate is nearly the same as the New Telecom Rate and uses the same inputs, except that the cost formula does not use a cost allocator "N". The Pre-Existing Rate formula is Space Factor x Cost, where the Space Factor is calculated in the same manner as the New Telecom Rate and Cost is = Net Cost of a Bare Pole x Carrying Charge Rate. The Net Cost of a Bare Pole and the Carrying Charge Rate are calculated in the same manner as in the New Telecom Rate formula.

The resulting Pre-Existing Telecom Rates for AT&T's attachments to FPL's distribution poles are as follows:

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Pre-Existing Telecom Rates For AT&T's Use of FPL's Distribution Poles

Rate Year	Distribution
2014	
2015	
2016	
2017	
2018	
2019	

10. Difference in the rate calculations of AT&T witness Daniel P. Rhinehart

I have compared the rates calculated by AT&T witness Rhinehart to my calculations in the following table:

Pre-Existing Telecom Rates

Rate Year	FPL calculation	AT&T calculation
2014		
2015		
2016		
2017		
2018		

The major drivers of the differences are in the calculation of the space factor, the net investment, and the carrying charge rates. I calculated a space factor of 24.67% based on FPL's statistical analysis as discussed by FPL witnesses Rob Murphy and Tom Kennedy. AT&T's space factor of 11.20% was based on rebuttable default values.

The differences in the net cost per bare pole and the carrying charge rates are driven in part by AT&T's use of total distribution plant accumulated depreciation to calculate accumulated depreciation for FERC accounts 364, 365 and 369, rather than the actual accumulated depreciation associated with these accounts. FPL provides a status report annually to the Florida Public Service Commission that provides detailed plant in service and accumulated depreciation by FERC plant account. It is not appropriate to allocate total distribution plant accumulated depreciation when the accumulated depreciation for the specific FERC account is available.

The final contributing factor impacting AT&T's calculation of the carrying charge rate is the difference in the return element. FPL has been operating under a settlement agreement which is silent on the approved cost of capital, therefore FPL is using the same default FCC return used by AT&T to calculate charges to FPL for use of AT&T's poles.

11. Telecom Attachment Rates for FPL Use of AT&T's Poles. I used the same FCC formulas for the calculation of the new and pre-existing rates for FPL attachments to

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AT&T's poles as used for AT&T's attachments to FPL's distribution poles described above. The inputs were taken from the AT&T cost data in its ARMIS Report.

I calculated a space factor of 36.53 % based on the data provided by AT&T:

AT&T Poles	
FPL Space Used	10.5
Number of Attaching Entities	5
Average Pole Height	37.5
Usable Space	13.5
Unusable Space	24

The net cost per bare pole formula is: Net Pole Investment / Number of Poles.

The formula for Net Pole Investment is:

[Gross Investment in poles in account 2411 - Accumulated Depreciation in account 3100 - ADIT for poles in accounts 4100 and 4340] * Bare Pole Factor (0.95)].

AT&T's Net Pole investment is negative in 2016 and 2017, therefore the rates in those years are calculated on a gross plant basis rather than net plant. The formula to calculate the rates on a gross plant basis is specified in the FCC's Consolidated Partial Order on Reconsideration No. 01-170 (May 25, 2001). The carrying charge rates for the administrative and taxes elements are calculated as the percentage of total gross investment, rather than net investment. The carrying charge rates for the maintenance element is calculated as the percentage of gross pole investment, rather than net investment in poles. The depreciation element is set to the depreciation rate. The return element is calculated as the FCC default return as described above times the ratio of net pole investment to gross pole investment.

The resulting New and Pre-Existing Telecom Rates for FPL's use of AT&T's poles are as follows:

New and Pre-Existing Telecom Rates for FPL use of AT&T's Poles

Rate Year	New Telecom Rate	Pre-Existing Rate
2014		
2015		
2016		
2017		
2018		
2019		

My calculations agree with AT&T witness Rhinehart's calculations in each year except 2016 due to the difference in the return element. Witness Rhinehart used an 11.25% return

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for the year rather than averaging the lowered return of 11.0% starting July 1, 2016 as discussed above.

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Pursuant to 28 U.S.C. § 1746, I declare under penalty of perjury that the foregoing is true and correct.

Executed on September 14, 2019

A handwritten signature in black ink, appearing to read "RBDent", written over a horizontal line.

Signature

DECLARATION OF RENAE B. DEATON
List of Exhibits

Exhibit RBD-1 - Rate Calculations

Exhibit RBD-1

Rate Calculations

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Rate Calculation for AT&T on PPL Pole									
Line #	Rate Year	2019	2018	2017	2016	2015	2014	2013	Source
1	Space Factor	24.67%	24.67%	24.67%	24.67%	24.67%	24.67%	24.67%	ln 13
2	Net Cost per Bare Pole	\$ 1,109.58	\$ 904.55	\$ 621.58	\$ 507.09	\$ 425.79	\$ 351.89	ln 20	
3	Carrying Charge Rate	24.33%	28.87%	34.36%	36.50%	38.51%	41.66%	ln 21	
4	Cost Allocator	0.44	0.44	0.44	0.44	0.44	0.44	FCC Default	
5								ln 1 * ln 2 * ln 3 * ln 4	
6								ln 1 * ln 2 * ln 3	
7	Space Occupied	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
8	Unusable space allocator	0.667	0.667	0.667	0.667	0.667	0.667	FCC Default	
9	Pole Height	40.4	40.4	40.4	40.4	40.4	40.4	40.4	
10	Usable Space	15.9	15.9	15.9	15.9	15.9	15.9	15.9	
11	Unusable Space	24.5	24.5	24.5	24.5	24.5	24.5	24.5	
12	Number of Attaching Entities	2.99	2.99	2.99	2.99	2.99	2.99	2.99	
13	Space Factor	24.67%	24.67%	24.67%	24.67%	24.67%	24.67%	24.67%	ln 7 + (ln 8 * ln 11 / ln 12) / ln 9
14	Gross Pole Investment	\$ 2,273,473,450	\$ 1,973,624,010	\$ 1,697,177,991	\$ 1,479,602,006	\$ 1,319,508,753	\$ 1,166,978,351	FERC Form 1, p. 207, Line/Col 64g	
15	Pole Accumulated Depreciation	\$ 499,568,628	\$ 514,307,943	\$ 532,970,657	\$ 526,493,103	\$ 517,090,636	\$ 499,856,126	PPSC Status Report, Schedule II Col h	
16	Net Pole Accumulated Deferred Taxes	\$ 220,942,170	\$ 194,855,294	\$ 304,243,038	\$ 255,986,718	\$ 219,782,571	\$ 186,538,943	ln 53 / ln 36 * ln 14	
17	Net Pole Investment	\$ 1,552,962,652	\$ 1,264,460,773	\$ 859,964,296	\$ 697,122,185	\$ 582,635,545	\$ 480,583,282	ln 14 - ln 15 - ln 16	
18	Number of Poles	1,189,657	1,188,202	1,175,993	1,168,532	1,163,099	1,160,848	FPL Dist. Reliability Rpt., p. 49	
19	Bare Pole Factor	0.85	0.85	0.85	0.85	0.85	0.85	FCC Default	
20	Net Cost Per Bare Pole	\$ 1,109.58	\$ 904.55	\$ 621.58	\$ 507.09	\$ 425.79	\$ 351.89	ln 17 / ln 18 * ln 19	
21	Total Carrying Charge Rate	24.33%	28.87%	34.36%	36.50%	38.51%	41.66%	ln 24 + ln 27 + ln 31 + ln 34 + ln 35	
22	Administrative & General Expense	\$ 333,675,208	\$ 443,699,308	\$ 335,632,043	\$ 347,310,070	\$ 354,091,172	\$ 407,062,399	FERC Form 1, p. 323, Line/Col 197b	
23	Net Utility Investment	\$ 33,018,296,511	\$ 30,896,468,958	\$ 24,322,210,906	\$ 22,909,483,777	\$ 21,041,873,588	\$ 19,839,364,100	ln 39	
24	Administrative & General Element	1.01%	1.44%	1.38%	1.52%	1.68%	2.05%	ln 22 / ln 23	
25	Maintenance Expense	\$ 110,459,008	\$ 116,092,027	\$ 110,563,510	\$ 111,695,879	\$ 105,193,491	\$ 123,514,911	FERC Form 1, p. 322, Line/Col 149b	
26	Net Investment Act 364, 365, 369	\$ 4,081,339,481	\$ 3,391,882,006	\$ 2,353,729,021	\$ 1,970,213,471	\$ 1,645,188,762	\$ 1,431,938,773	ln 48	
27	Maintenance Element	2.71%	3.42%	4.70%	5.67%	6.39%	8.63%	ln 25 / ln 26	
28	Distribution Plant Depreciation Rate	3.23%	3.26%	4.10%	4.10%	4.10%	4.10%	FERC Form 1, p. 377.1, Line/Col 43e+44e	
29	Gross Pole Investment	\$ 2,273,473,450	\$ 1,973,624,010	\$ 1,697,177,991	\$ 1,479,602,006	\$ 1,319,508,753	\$ 1,166,978,351	ln 14	
30	Net Pole Investment	\$ 1,552,962,652	\$ 1,264,460,773	\$ 859,964,296	\$ 697,122,185	\$ 582,635,545	\$ 480,583,282	ln 17	
31	Depreciation Element	4.73%	5.08%	8.09%	8.70%	9.29%	9.96%	ln 28 * ln 29 / ln 30	
32	Operating Taxes	\$ 1,818,596,877	\$ 2,567,032,935	\$ 2,264,897,571	\$ 2,172,638,891	\$ 2,083,030,322	\$ 1,939,410,571	FERC Form 1, p. 114, Line/Col 14 thru 19c	
33	Net Utility Investment	\$ 33,018,296,511	\$ 30,896,468,958	\$ 24,322,210,906	\$ 22,909,483,777	\$ 21,041,873,588	\$ 19,839,364,100	ln 39	
34	Tax Element	5.51%	8.31%	9.31%	9.48%	9.90%	9.78%	ln 32 / ln 33	
35	Return Element	10.375%	10.625%	10.875%	11.125%	11.250%	11.250%	AT&T Return Element	

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		Rate Calculation for AT&T on FPL Pole							
Line #	Rate Year	2019	2018	2017	2016	2015	2014	2013	Source
Data Year		2018	2017	2016	2015	2014	2013		
FPL Cost Data									
Net Utility Investment									
36	Total Utility Plant	\$ 53,458,000,738	\$ 51,348,955,432	\$ 47,430,046,196	\$ 44,501,432,696	\$ 41,288,086,464	\$ 39,199,777,228	FERC Form 1, p. 200, Line/Col 13c	
37	Total Plant Accumulated Depreciation	\$ 15,244,514,164	\$ 15,382,819,830	\$ 14,605,331,233	\$ 13,892,732,753	\$ 13,369,106,690	\$ 13,094,414,276	FERC Form 1, p. 200, Line/Col 14c	
38	Total Plant Accumulated Deferred Income Taxes	\$ 5,195,190,063	\$ 5,069,666,644	\$ 8,502,503,057	\$ 7,699,216,166	\$ 6,877,106,186	\$ 6,265,998,852	Ln 53	
39	Net Utility Investment	\$ 33,018,296,511	\$ 30,896,468,958	\$ 24,322,210,906	\$ 22,909,483,777	\$ 21,041,873,588	\$ 19,839,364,100	Ln 36 - Ln 37 - Ln 38	
Net Investment Act 364, 365, 369									
40	Act 364 Poles, Towers and Fixtures	\$ 2,273,473,450	\$ 1,973,624,010	\$ 1,697,177,991	\$ 1,479,602,006	\$ 1,319,508,753	\$ 1,166,978,351	FERC Form 1, p. 207, Line/Col 64g	
41	Act 365 Overhead Conductors and Devices	\$ 2,769,849,168	\$ 2,417,141,530	\$ 2,074,007,668	\$ 1,785,647,013	\$ 1,497,776,158	\$ 1,372,209,275	FERC Form 1, p. 207, Line/Col 65g	
42	Act 369 Services	\$ 1,291,830,757	\$ 1,207,961,146	\$ 1,140,271,612	\$ 1,074,978,134	\$ 1,004,500,148	\$ 941,887,136	FERC Form 1, p. 207, Line/Col 69g	
43	Total Act 364, 365, 369	\$ 6,335,153,375	\$ 5,598,726,706	\$ 4,911,457,271	\$ 4,340,227,153	\$ 3,821,785,059	\$ 3,481,074,762	Ln 40 + Ln 41 + Ln 42	
43	Accumulated Depreciation Act 364	\$ 499,568,628	\$ 514,307,943	\$ 532,970,657	\$ 526,493,103	\$ 517,090,636	\$ 499,856,126	FERC Status Report, Schedule II	
44	Accumulated Depreciation Act 365	\$ 656,745,399	\$ 680,743,235	\$ 707,703,809	\$ 681,794,398	\$ 658,080,123	\$ 627,983,683	FERC Status Report, Schedule II	
45	Accumulated Depreciation Act 369	\$ 481,832,887	\$ 459,032,950	\$ 436,605,952	\$ 410,821,209	\$ 364,853,976	\$ 364,853,976	FERC Status Report, Schedule II	
46	Accumulated Depreciation Act 364, 365, 369	\$ 1,638,146,914	\$ 1,654,084,127	\$ 1,677,280,418	\$ 1,619,108,710	\$ 1,540,024,736	\$ 1,492,693,785	Ln 43 + Ln 44 + Ln 45	
47	Accumulated Deferred Income Taxes Act 364, 365, 369	\$ 615,666,980	\$ 552,760,573	\$ 880,447,832	\$ 750,904,972	\$ 636,571,561	\$ 556,442,205	Ln 53 / Ln 36 + Ln 43	
48	Net Investment Act 364, 365, 369	\$ 4,081,339,481	\$ 3,391,882,006	\$ 2,353,729,021	\$ 1,970,213,471	\$ 1,645,188,762	\$ 1,431,938,773	Ln 43 - Ln 46 - Ln 47	
Deferred Income Taxes									
49	Act 190 (d)	\$ 1,931,273,565	\$ 1,903,126,799	\$ 1,072,949,668	\$ 968,895,257	\$ 991,621,512	\$ 1,056,745,888	FERC Form 1, p. 234, Line/Col 8c	
50	Act 281 (c)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	FERC Form 1, p. 273, Line/Col 8k	
51	Act 282 (c)	\$ 5,758,644,772	\$ 5,434,961,347	\$ 7,920,581,966	\$ 7,106,306,663	\$ 6,572,756,582	\$ 6,052,230,877	FERC Form 1, p. 275, Line/Col 2k	
52	Act 283 (c)	\$ 1,367,818,856	\$ 1,537,832,096	\$ 1,654,870,759	\$ 1,561,804,460	\$ 1,295,971,116	\$ 1,270,513,863	FERC Form 1, p. 277, Line/Col 9k	
53	Total (-190+ (281 to 283))	\$ 5,195,190,063	\$ 5,069,666,644	\$ 8,502,503,057	\$ 7,699,216,166	\$ 6,877,106,186	\$ 6,265,998,852	Ln 48+ Ln 49+ Ln 50+ Ln 51	
Operating Taxes									
54	Act 408, 1 Taxes Other Than Income Taxes	\$ 1,305,609,375	\$ 1,292,536,097	\$ 1,193,759,440	\$ 1,209,838,556	\$ 1,168,551,830	\$ 1,123,446,756	FERC Form 1, p. 114, Line/Col 14c	
55	Act 409, 1 Income Taxes - Federal	\$ 248,842,756	\$ 150,681,258	\$ 79,949,232	\$ 434,203,546	\$ 238,851,126	\$ 159,753,169	FERC Form 1, p. 114, Line/Col 15c	
56	Act 409, 1 Income Taxes - Other	\$ 90,417,574	\$ 26,976,559	\$ 64,113,158	\$ 52,911,599	\$ 67,080,761	\$ 41,971,695	FERC Form 1, p. 114, Line/Col 16c	
57	Act 410, 1 Provision for Deferred Income Taxes	\$ 2,564,684,004	\$ 2,813,967,313	\$ 2,624,768,812	\$ 2,185,753,256	\$ 2,552,482,433	\$ 2,740,473,092	FERC Form 1, p. 114, Line/Col 17c	
58	Act 411, 4 Investment Tax Credit Adj	\$ 206,771,636	\$ (3,502,803)	\$ 119,536,056	\$ 192,033	\$ 1,150,705	\$ 391,608	FERC Form 1, p. 114, Line/Col 19c	
59	Less Act 411, 1 Prov for Def Income Taxes - Cr	\$ 2,597,778,468	\$ 1,713,625,489	\$ 1,817,229,127	\$ 1,710,260,099	\$ 1,945,086,533	\$ 2,126,625,749	FERC Form 1, p. 114, Line/Col 18c	
60	Operating Taxes	\$ 1,818,596,877	\$ 2,567,032,935	\$ 2,264,897,571	\$ 2,172,638,891	\$ 2,083,030,322	\$ 1,939,410,571	Ln 54 + Ln 55 + Ln 56 + Ln 57 + Ln 58 - Ln 59	

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Rate Calculation for FPL on ATT Pole												
Line	Rate Year	2014	2015	2016	2017	2018	2019	2020	Source			
1	Date Year	2012	2013	2014	2015	2016	2017	2018	2019	2020		
2	Space Factor	36.53%	36.53%	36.53%	36.53%	36.53%	36.53%	36.53%	36.53%	36.53%	Ln 13	
3	Basis of Rate Calculation	Net	Net	Net	Net	Net	Gross	Gross	Net	194.44	For net cost basis: Ln 22; for gross cost basis: Ln 23	
4	Cost per Bare Pole	53.99	32.72	29.21	4.61	499.04	516.32	37.93%	Ln 23			
5	Carrying Charge Rate	119.96%	159.47%	165.36%	848.16%	10.47%	6.07%	0.66%	FCC Regs			
6	Cost Allocator	0.66	0.66	0.66	0.66	0.66	0.66	0.66	Ln 1 * Ln 2 * Ln 3 * Ln 4			
7	Space Occupied	10.5	10.5	10.5	10.5	10.5	10.5	10.5	Ln 1 * Ln 2 * Ln 3			
8	Unusable space allocator	0.667	0.667	0.667	0.667	0.667	0.667	0.667	per AT&T			
9	Pole Height	37.5	37.5	37.5	37.5	37.5	37.5	37.5	per AT&T			
10	Usable Space	13.5	13.5	13.5	13.5	13.5	13.5	13.5	per AT&T			
11	Unusable Space	24	24	24	24	24	24	24	per AT&T			
12	Number of Attaching Entities	5	5	5	5	5	5	5	per AT&T			
13	Space Factor	0.365333333	0.365333333	0.365333333	0.365333333	0.365333333	0.365333333	0.365333333	(Ln 7 * Ln 8 * Ln 11 / Ln 12) / Ln 9			
14	Gross Investment - Poles	234,907,000	234,530,000	236,748,000	240,273,000	243,960,000	252,485,000	195,849,000	ARMIS Ln 101			
15	Accumulated Depreciation - Poles	201,414,000	209,183,000	220,913,000	233,416,000	246,750,000	259,373,000	77,433,000	ARMIS Ln 201			
16	Net Current Deferred Operating Income Taxes - Poles	114,000	691,000	-174,000	-320,000	0	0	0	ARMIS Ln 401			
17	Net Non-Current Deferred Operating Income Taxes - Poles	6,382,000	8,594,000	1,711,000	4,921,000	7,057,000	7,986,000	23,093,000	ARMIS Ln 404			
18	Net Investment - Poles	26,997,000	16,062,000	14,298,000	2,256,000	(9,847,000)	(14,880,000)	95,323,000	Ln 14 - (Ln 15 + Ln 16 + Ln 17)			
19	Equivalent Number of Poles	475.064	466.293	464.964	464.494	464.416	464.561	465.739	ARMIS Ln 601			
20	Bare Pole Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	CFR 47 j sec. 11409			
21	Gross Cost Per Bare Pole	469.75	477.82	483.72	491.42	499.04	516.32	399.49	Ln 14 / Ln 19 * Ln 20			
22	Net Cost per Bare Pole	53.99	32.72	29.21	4.61	(20.14)	(30.43)	194.44	Ln 18 / Ln 19 * Ln 20			
23	Total Carrying Charge Rate	1.1995719	1.594651937	1.653611829	8.4481513466	0.104680814	0.060650903	0.379275957	Ln 26 + Ln 29 + Ln 33 + Ln 36 + (Ln 37 for Net cost basis, Ln 38 for gross cost basis)			
24	General & Administrative Expense	474,910,000	-121,081,000	474,486,000	203,283,000	124,183,000	-77,709,000	224,258,000	ARMIS Ln 503			
25	Investment-Total Plant in Service	1,603,032,000	872,535,000	2,121,528,000	1,986,579,000	16,789,434,000	14,695,997,000	2,961,593,000	gross costs basis: ARMIS Ln 100			
26	General & Administrative Rate	29.63%	-13.88%	22.37%	10.23%	0.74%	-0.53%	9.94%	Ln 24 / Ln 25			
27	Maintenance Expense - Poles	2,321,000	1,620,000	1,709,000	2,559,000	3,629,000	2,805,000	5,141,000	ARMIS Ln 501.1			
28	Investment - Poles	26,997,000	16,062,000	14,298,000	2,256,000	243,960,000	252,485,000	95,323,000	For net cost basis: Ln 18; for gross cost basis: Ln 14			
29	Maintenance Rate	8.60%	10.09%	11.95%	11.43%	1.49%	1.11%	5.39%	Ln 27 / Ln 28			
30	Depreciation Rates - Poles	6.50%	6.50%	6.50%	6.50%	6.50%	6.50%	3.18%	ARMIS Ln 301			
31	Gross Investment - Poles	234,907,000	234,530,000	236,748,000	240,273,000	243,960,000	252,485,000	195,849,000	ARMIS Ln 101			
32	Net Investment - Poles	26,997,000	16,062,000	14,298,000	2,256,000	(9,847,000)	(14,880,000)	95,323,000	ARMIS Ln 201			
33	Depreciation Rate for Rate Development	56.56%	94.91%	107.63%	692.28%	6.50%	6.50%	6.53%	For net cost basis = Ln 30 * Ln 31 / Ln 32; for gross cost basis = Ln 30			
34	Operating Taxes	223,242,000	498,184,000	260,744,000	424,070,000	364,289,000	-59,614,000	175,918,000	ARMIS Ln 504			
35	Investment - Total Plant in Service	1,603,032,000	872,535,000	2,121,528,000	1,986,579,000	16,789,434,000	14,695,997,000	2,961,593,000	gross costs basis: ARMIS Ln 100 - ARMIS Ln 200 - ARMIS Ln 403 - ARMIS Ln 406; For			
36	Tax Rate	13.93%	57.10%	12.29%	21.35%	2.17%	-0.41%	5.94%	Ln 34 / Ln 35			
37	Return Element	11.250%	11.250%	11.125%	10.875%	10.625%	10.375%	10.125%	FCC default			
38	Return Element if Net Investment-Poles is negative	NA	NA	NA	NA	-0.43%	-0.61%	NA	Ln 37 * Ln 18 / Ln 14			

Exhibit E

PUBLIC VERSION

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

BELLSOUTH)	
TELECOMMUNICATIONS, LLC,)	
d/b/a AT&T Florida,)	
)	Proceeding No. 19-187
<i>Complainant,</i>)	
)	Bureau ID No. EB-19-MD-006
<i>v.</i>)	
)	
FLORIDA POWER & LIGHT COMPANY,)	
)	
<i>Respondent.</i>)	

**DECLARATION OF ROBERT MURPHY ON BEHALF OF
ALPINE COMMUNICATION CORP.**

1. My name is Robert Murphy. I have been employed by Alpine Communication Corp. (“**Alpine**”) for approximately 21 years. I currently hold the position of Senior Vice President. I have been responsible for managing all aspects of Alpine’s business which has included being responsible for managing the joint use audits of the above referenced parties for the past 18 to 19 years. As an officer of the company, I have authority to provide this declaration on behalf of Alpine.

2. Alpine was founded in 1980 to provide support services to utility and CATV companies throughout the state of Florida. Over the past 39 years, Alpine has provided services to such companies as TECO, Duke Energy, Jacksonville Electric Authority, AT&T, Verizon, Sprint, Comcast, Crown Castle and Century Link. Since 1993, Alpine has been the CATV and NON-LEC Telecom Permit Process administrator for Florida Power & Light Company (“**FPL**”).

3. The purpose of this declaration is to provide data regarding FPL distribution poles located in the state of Florida that are occupied by Bellsouth Telecommunications, LLC d/b/a AT&T Florida (“**AT&T**”). As provided in further detail below, in regard to the shared FPL distribution poles, AT&T occupies an average of 1.18’ of space per joint use pole and there is an average of .028 of governmental attachments per joint use pole.

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A. Alpine Joint Use Audits of FPL / AT&T Shared Distribution Poles:

4. Alpine is very familiar with the joint use poles shared by FPL and AT&T in the state of Florida. Since the mid to late 1980s, Alpine has been performing joint use audits (“**Joint Use Audits**”) on behalf of FPL and AT&T.¹ In the 1990’s, Alpine began the practice of auditing different geographic areas each year with the end goal of auditing every pole shared by FPL and AT&T within a 5 year cycle. At the end of the 5 year cycle, Alpine starts the cycle over again.

5. Once the Joint Use Audit is complete, all attaching parties, including AT&T have an opportunity to participate with Alpine in a post audit field check. AT&T typically participates in the post audit field check. In reference to each of the prior Joint Use Audits performed by Alpine for the most recent 5 year cycle, AT&T has signed off confirming the accuracy of the Joint Use Audits.

6. Based upon the most current Joint Use Audits performed by Alpine in the last 5 year cycle, AT&T occupies 401,919 FPL distribution poles in Florida. These FPL distribution poles occupied by AT&T are divided up and located in six geographic areas. A breakdown of the most recent Joint Use Audits performed in each of these six geographic areas with AT&T occupancy is as follows:

Geographic Area for Audit	# of FPL Dist. poles occupied by AT&T	Last Audit in Area
Central Florida	44,856	2019
North Florida	40,174	2018
Brevard Florida	39,714	2018
Miami-Dade	111,486	2016
Broward	63,597	2015
East	102,092	2015
Total	401,919	

7. In reference to the Joint Use Audits, information obtained and recorded by Alpine includes: (a) the number of FPL distribution poles to which AT&T is attached; (b) the number of other licensees attached (excluding governmental attachers); (c) the type of pole material (i.e. wood, concrete, steel, etc.); and (d) the pole height.

¹ In 2017, Alpine entered into a 4 year extension to continue to perform the joint use audits for FPL and AT&T.

B. July 2019 Sample Audit of 2,000 Randomly Selected FPL Distribution Poles Occupied by AT&T:

8. In June of 2019, I was contacted by FPL with a request for Alpine to perform a survey of 2000 randomly selected FPL joint use distribution poles to which AT&T is attached (“Survey”). FPL requested Alpine to: (i) measure the amount of space occupied by AT&T; and (ii) identify the number of governmental attachments and governmental attachers per pole. A true and correct copy of FPL’s request to Alpine for the Survey with the scope of work to be performed is attached as Exhibit A.

9. The 2,000 FPL distribution poles with AT&T attachments that were surveyed by Alpine were randomly selected by FPL from an excel spreadsheet created by Alpine. This excel spreadsheet listed each and every one of the 401,919 FPL joint use distribution poles identified in the most recent Joint Use Audits that are shared and agreed with by AT&T.²

10. The list of the 2000 poles that were randomly selected by FPL from the excel spreadsheet and provided to Alpine for performing the Survey is attached as Exhibit B.

C. Performing the Survey:

11. In July 2019, the Survey was managed and performed by myself along with six seasoned employees at Alpine (“Audit Team”) who are very familiar with FPL poles through performing prior Joint Use Audits and, as a result, were well versed in identifying attachments and taking measurements in the field. Before starting the Survey, the FPL instructions were thoroughly discussed and vetted among the Audit Team with several conferences to follow over the course of the Survey to ensure consistency.

12. In performing the Survey of 2000 FPL distribution poles, Alpine found 48 poles that did not meet the criteria of FPL distribution poles with AT&T attached. This discrepancy is the result of some data in the Joint Use Audits being 3 to 4 years old and naturally field conditions can change over that time period. This reduced the Survey total number of FPL distribution poles with AT&T attached to 1,952.

13. Following the completion of the Survey, Alpine conducted a random spot check on 20 of the FPL distribution poles to confirm the accuracy of the recorded data. All 20 FPL distribution poles that were re-checked matched the data recorded in the Survey.

² Since the excel spreadsheet is over 8,000 pages, I am not able to attach a copy of it to the Declaration. An electronic version of the excel spreadsheet was transmitted to FPL via email. It was used by FPL for purposes of randomly selecting the 2000 FPL distribution poles for the Survey.

D. Measurements of Space Occupied by AT&T on FPL Distribution Poles:

14. As part of the Survey, Alpine measured the space occupied by AT&T. In taking these measurements, the Audit Team used either a “Hastings height stick” or the “IKE GPS 4 Device” (“Device”). The manufacturer of the Device reports that its accuracy is within one inch of the actual measurement and Alpine’s use of the Device over the past couple of years has found the manufacturer’s representation of accuracy to be true. Four members of the Audit Team used the Device while the other three used the Hastings height stick for taking measurements which also produces very accurate results.

15. In measuring the space occupied by AT&T, the Audit Team did the following:

- a. If there was only one AT&T attachment, a total of 1 foot of space was recorded;
- b. If AT&T had more than one attachment, the distance between the attachments was measured and a total of 12 inches was added to the measurement (6” added on bottom and top); and
- c. If AT&T cable appeared to have a sag of 16” or greater, the space occupied by the sag was measured. The measured space occupied by the sag was recorded without any adders and these measurements were kept separate and independent from the pole space measurements identified in a and b above.

16. The Survey revealed that the average amount of space occupied by AT&T using the above parameters in 15a and 15b was 14.20 inches or 1.18 feet.³ Again, this average does not take into consideration the amount of sag that was measured as part of the Survey.

17. This Survey also did not take into consideration that AT&T can take up more space on the pole simply as a result of its location of placement on the FPL distribution pole. If AT&T does not place its attachment on the lowest point of the FPL distribution pole which is the reserved space for AT&T, it reduces the space available for other attachers which must place their attachments above AT&T. This is actually becoming more of a common occurrence that AT&T’s cable placement is higher up the pole than it should be, thus reducing the space available for other attachers and effectively taking up more space on the FPL distribution pole.

³ 14.20” ÷ 12” = 1.18’.

E. Counting Governmental Attachers on FPL Distribution Poles:

(i) Survey of Governmental Attachers:

18. Until Alpine's most recent completed Joint Use Audit in Central Florida, all other Joint Use Audits in the most recent completed 5 year cycle did not capture the number of governmental attachments. In the Survey, the Audit Team captured and recorded those instances where an FPL joint use distribution pole occupied by AT&T also included a governmental attachment and identified those instances when there was more than one governmental attacher. Of the 1,952 distribution poles surveyed, there were only a total of 20 governmental attachments found on 20 FPL distribution poles.

19. In other words, the Survey revealed that only 1.02% or .0102 of the FPL distribution poles jointly occupied by AT&T have a governmental attacher. ($20 \div 1,952 = 1.02\%$ or .0102 per pole). The very rare occurrence of a governmental attachment found during the survey is consistent with what Alpine has noticed in the field throughout all territories in performing the Joint Use Audits of FPL distribution poles.

(ii) 2019 Joint Use Audit of Central Florida of Governmental Attachers:

20. In regard to the most recent 2019 Joint Use Audit performed by Alpine in Central Florida, Alpine started collecting data for the first time regarding the number of governmental attachments to FPL distribution poles. The results of the 2019 Joint Use Audit regarding governmental attachers were very similar to the Survey. The occurrence of a governmental attacher to an FPL distribution pole with AT&T attached was rare.

21. In reference to the 44,769⁴ FPL distribution poles audited in Central Florida in 2019, only 1,254 had a governmental attachment. On 17 of these poles, there were 2 governmental attachments bringing the total number of governmental attachments to 1,271. In other words, only 2.8% or .028 of the FPL distribution poles occupied by AT&T in Central Florida had a governmental attacher. ($1,271 \div 44,769 = 2.8\%$ or .028 per pole).

F. Summary of the Results of the Survey Performed by Alpine:

22. A true and correct copy of Alpine's final Survey results are set forth in an excel spreadsheet attached as Exhibit C.

⁴ This number is slightly different than the total population number for Central Florida that is set forth in the chart on page 2. This number accurately represents the total number of distribution poles audited for Central Florida in 2019. 87 of the poles that are technically in Central Florida had previously been audited as part of the North Florida and Brevard Florida Joint Use Audits performed in 2018.

PUBLIC VERSION

23. A summary of the results from the Survey and a side-by-side comparison of the results of the Joint Use Audit of Central Florida in 2019 are as follows:

Data Collected	July 2019 Survey – FPL Distribution Poles	Central FL Joint Use Audit – FPL Distribution Poles
Percentage of Governmental Attachments	Only 1.02 % of poles	Only 2.8 % of poles
Average governmental attachments per pole expressed numerically	.0102 per pole	.028 per pole
Average Amount of Space Occupied on Pole by AT&T	14.20” or 1.18’	N/A

Pursuant to 28 U.S.C. § 1746, I declare under penalty of perjury that the foregoing is true and correct.

This declaration executed on this 13th day of September, 2019.

Alpine Communication Corp.



Robert Murphy, its Senior Vice President

Exhibit A
Murphy's Declaration (Alpine)
Alpine's Scope of Work

PUBLIC VERSION

From: Gilbert, Kenneth J <Kenneth.J.Gilbert@fpl.com>

Sent: Saturday, June 22, 2019 8:54 AM

To: Mitch Veynovich <mveynovich@alpinecc.us>; Robert Murphy <rmurphy@alpinecc.us>; Lori Cochran <lcochran@alpinecc.us>

Cc: Janzen, Patricia L <Patricia.L.Janzen@fpl.com>

Subject: Request for Proposals - FPL 2000 Pole Survey

To: Alpine Communication Corp.

SCOPE OF WORK

FPL Poles to be Surveyed

This is a request to survey 2000 FPL distribution poles with AT&T attached that will be randomly selected by FPL from a listing of poles provided by Alpine. The listing provided by Alpine will be all FPL poles (with GPS addresses) in FPL's system with AT&T attached, from the following surveys:

North FL 2018
Central FL 2019
Brevard 2018
East 2015
Broward 2015
Miami-Dade 2016

The survey shall be completed no later than July 23, 2019.

The information to be provided in the survey of these 2000 poles is as follows:

Photos

- Include a .jpg of each pole surveyed clearly showing pole top and attachments.
- A .jpg is required at those mid-span locations identified in the "AT&T space occupied" section below.

Governmental Attachments

- List the number of governmental attachments on each pole surveyed.
- If more than one governmental attachment exists and the attachments belong to more than one governmental entity, provide the name and number of attachments for each governmental entity.
- If more than one governmental attachment exists and the attachments all belong to the same governmental entity, you need only provide the total number of governmental attachments.

AT&T Space Occupied

- List the number of AT&T attachments.
- List the amount of space occupied by AT&T attachments on each pole surveyed.
- If one cable attachment exists, list (1) foot of space occupied.
- If more than one cable attachment exists, the space occupied will be the distance from the top AT&T attachment to the bottom AT&T attachment plus 6" at the top and 6" at the bottom.
- If the sag in either direction from the pole is greater than the space occupied at the pole, take a photo of the mid-span and list the amount of sag in excess of the space occupied on the pole. (Some examples: a lone AT&T cable with a significant amount of sag below FPL facilities; an AT&T cable below CATV or telecom with one foot of separation at the pole below CATV or telecom and two feet or more separation at mid-span.)

Thanks,

Ken
954.321.2152 ofc
954.224.5703 cell

FPL00173

Exhibit B

Murphy's Declaration (Alpine)

List of Random FPL Distribution Poles to be Surveyed

PUBLIC VERSION

MATERIAL	HEIGHT	COUNTY	X_COORD	Y_COORD	ID	row	raw	random	gen	survey
W	30	Putnam	439936.1	1875971	614050723	388579		0.00000025		yes
W	30	Seminole	572764.9	1601130	681561336	143797		0.00000990		yes
W	45	Volusia	636601.7	1819329	2661794	113409		0.00001305		yes
W	40	Seminole	614489.5	1562805	552268661	129904		0.00001437		yes
W	30	Brevard	748088.7	1384211	3040352	7078		0.00001717		yes
W	40	Broward	911245.2	596766.8	3715683	46332		0.00002025		yes
C	45	Dade	896783.2	550651.9	3860601	160653		0.00002440		yes
W	40	Dade	824160.4	451863.1	4441599	169903		0.00002455		yes
W	35	Broward	944430.1	704307.6	5959785	75836		0.00002632		yes
W	45	Palm Beac	782600.4	845304.3	218510	262134		0.00002736		yes
W	40	St Lucie	875721.8	1092440	286964701	318337		0.00002793		yes
W	40	Dade	921248	531100.9	576950281	238183		0.00002902		yes
W	40	Dade	814449.4	469115.1	5850159	206643		0.00002941		yes
W	45	Dade	917234.2	584384.8	4080357	167819		0.00003256		yes
W	40	Brevard	710643.3	1501228	2885324	2525		0.00003435		yes
W	35	Brevard	764249.1	1463801	393410439	21777		0.00003637		yes
W	40	Dade	878540.2	491033	6110229	217469		0.00003661		yes
W	35	Broward	935567.1	655216.7	3722073	46848		0.00003793		yes
W	35	Dade	926036.1	553139.9	4466361	173209		0.00003880		yes
W	30	Dade	878904.1	521399.3	693132673	256327		0.00003901		yes
W	45	Broward	935432.3	608941.1	575232951	92146		0.00004238		yes
C	45	Dade	901990.2	511335	6133239	220224		0.00004337		yes
W	35	Dade	924281.2	564351.9	4577589	181162		0.00005458		yes
W	35	Columbia	93314.64	2139211	219983434	376412		0.00005465		yes
W	40	Martin	933997.1	999855	572861547	333552		0.00005523		yes
W	35	Brevard	711701.3	1551227	547981711	23797		0.00006595		yes
W	30	St Johns	533600.2	2007040	727980707	398854		0.00006699		yes
W	40	Dade	824041.4	404731.2	4441539	169894		0.00007160		yes
C	45	Palm Beac	958503.1	896543.2	178047061	312055		0.00007338		yes
W	35	Flagler	582639.3	1882570	266409344	128423		0.00007440		yes
W	40	Volusia	653080.4	1777293	2742506	117387		0.00007671		yes
W	40	Brevard	752169.9	1507001	93515864	16859		0.00008245		yes
W	40	Broward	936173.1	629403.7	4302015	60666		0.00008649		yes
W	35	Broward	915733.2	614034.8	5715375	70614		0.00008880		yes
W	30	Broward	897861.2	661787.7	5675661	68373		0.00009527		yes
C	45	Dade	943168.1	549763.9	6361785	229706		0.00009970		yes
W	40	Nassau	493489	2279512	613955498	386663		0.00009982		yes
W	40	Brevard	815216.4	1274028	3381380	16403		0.00010582		yes
W	50	Palm Beac	964022.3	868848.6	654023138	358076		0.00011144		yes
W	40	Brevard	750468.5	1466471	3054320	7516		0.00011165		yes
W	35	Dade	926562.8	560400	JB1979	258885		0.00011738		yes
W	45	Palm Beac	962075.6	782030.1	340995210	322060		0.00011789		yes
W	35	Indian Rive	843637.4	1218415	573118400	336951		0.00012390		yes
W	40	Dade	916840.6	565775.3	5784447	205235		0.00012790		yes
W	40	Dade	914167.2	535560.9	4567377	180024		0.00012812		yes
C	40	Broward	917250.2	663849.7	3560366	40813		0.00012830		yes