

CHAPTER 5

ELECTRIC

Authority

N.J.S.A. 48:2-13.

Source and Effective Date

R. 1991 d.583, effective December 2, 1991
See: 23 N.J.R. 1519(a), 23 N.J.R. 3652(a).

Executive Order No. 66(1978) Expiration Date

Chapter 5, Electric, expires on December 2, 1996.

Chapter Historical Note

Chapter 5, Electric, was filed and became effective prior to September 1, 1969. Subchapter 4, Regulation for Residential Electric Underground Extensions, was filed and became effective December 31, 1971 as R.1971 d.183. See: 1 N.J.R. 9(a), 3 N.J.R. 277(c). Subchapter 7, was filed and became effective April 19, 1973 as R.1973 d.106. See: 4 N.J.R. 134(c), 5 N.J.R. 167(a). Subsequent revisions to Subchapter 7 were filed and became effective January 21, 1975, as R.1975 d.12. See: 5 N.J.R. 353(a), 7 N.J.R. 62(b). Subchapter 7 was deleted and the deletion was filed and became effective February 17, 1977 d.37. See: 9 N.J.R. 139(a). Subchapter 3, expired April 23, 1984 and was adopted as a new rule pursuant to Executive Order No. 66(1978) as R.1985 d.625 effective December 16, 1985. See: 17 N.J.R. 2237(a), 17 N.J.R. 2998(a). Chapter 5 expired on December 16, 1990 pursuant to Executive Order No. 66(1978), Chapter 5 was proposed and adopted as new rules, R.1991 d.583, effective December 2, 1991. See: Source and Effective Date.

Public Notice: Restructuring of Electric power industry. See: 27 N.J.R. 2634(a).

See section level annotations for specific rulemakings.

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SUBCHAPTER 1. PLANT

14:5-1.1 Plant construction

The construction and installation of plant and facilities of electric utilities must be in accordance with N.J.A.C. 14:3-2.1 and, except with respect to the protection and separation of conductors buried in earth, must be in accordance with the applicable requirements of the National Electrical Code and the National Electrical Safety Code in effect at the time of construction. When and if any controversy arises as to the necessity for adopting specifications calling for construction of a higher standard, the matter may be referred to the Board for determination.

14:5-1.2 Separation and protection of conductors buried in earth

(a) The separation between buried communication and buried supply conductors or cables shall consist of not less than 12 inches of well-tamped earth, four inches of brick or three inches of concrete.

(b) Exceptions to (a) above are as follows:

1. This separation and protection is not required where supply circuits having a potential of 550 volts or less between conductors and having a total transmitted power of not in excess of 3,200 watts are laid adjacent to

communication cables, if all cables are used exclusively for the operation of a railway signal or supply system and are maintained by the same company.

2. This separation and protection is not required where supply circuits have a potential of 550 volts or less between conductors.

3. This separation and protection is not required where communication and power supply conductors or cables which have a potential of over 550 volts between conductors are buried in a common trench at the same depth with random separation under the following conditions:

i. The electric system shall be wye connected with grounded neutral and a voltage not exceeding 22,000 volts to ground;

ii. The power cables shall have a concentric solidly grounded neutral. When there is no covering over the concentric neutral, grounding may be by direct burial in earth; otherwise ground rods shall be driven at all cable terminations or a separate bare copper grounding conductor not smaller than # 4A.W.G. shall be buried in the earth not more than three inches from the power cable. All neutral and grounding conductors shall be interconnected at all power cable terminations. The power cables shall meet or exceed the test requirements of the Insulated Power Cable Engineers Association—National Electrical Manufacturers Association standards for cables for transmission and distribution of electrical energy;

iii. The communication cable shall contain a metallic sheath bonded to the electric system grounded neutral at intervals of not more than 1,000 feet.

4. No separation is required between communication and supply conductors or cables located beneath transformer switch and terminal cabinets or their supporting pads or structures.

As amended, R.1975 d.215, effective July 28, 1975.

See: 7 N.J.R. 277(a), 7 N.J.R. 437(a).

Amended by R.1991 d.583, effective December 2, 1991.

See: 23 N.J.R. 1519(a), 23 N.J.R. 3652(a).

Editorial or stylistic change only.

Cross References

Fault protection of buried cables, see N.J.A.C. 14:5-1.5.

14:5-1.3 Protection at crossings of cables

(a) At all crossings where buried supply conductors or cables are above communication conductors or cables, the supply conductors or cables shall be protected from digging operations by concrete or creosoted wood plank or equivalent mechanical protective covering extending at least two feet in each direction from the point of crossing.

(b) Exceptions to (a) above are as follows:

1. This separation and protection is not required where supply circuits having a potential of 550 volts or less between conductors and having a total transmitted power of not in excess of 3,200 watts are laid adjacent to communication cables, if all cables are used exclusively for the operation of a railway signal or supply system and are maintained by the same company.

2. This protection is not required where supply conductors over 550 volts between conductors are installed in accordance with N.J.A.C. 14:5-1.2(b)3.

Amended by R.1991 d.583, effective December 2, 1991.

See: 23 N.J.R. 1519(a), 23 N.J.R. 3652(a).

Editorial or stylistic change only.

14:5-1.4 Protection of cables installed parallel

(a) Where buried communication and buried supply conductors or cables are installed in the same trench generally parallel to each other, the buried supply conductors or cables shall be covered with concrete or creosoted wood planking or equivalent mechanical protection, except that this covering may be omitted in the following cases:

1. Where the voltage of the supply conductors does not exceed 550 volts between conductors;

2. Where the supply conductors or cables are encased in a continuous metallic sheath effectively grounded;

3. Where the supply conductors or cables are installed more than two feet horizontally from communication conductors;

4. Where supply conductors over 550 volts between conductors are installed in accordance with N.J.A.C. 14:5-1.2(b)3.

(b) This separation and protection is not required where supply circuits having a potential of 550 volts or less between conductors and having a total transmitted power of not in excess of 3,200 watts are laid adjacent to communication cables, if all cables are used exclusively for the operation of a railway signal or supply system and are maintained by the same company.

Amended by R.1991 d.583, effective December 2, 1991.

See: 23 N.J.R. 1519(a), 23 N.J.R. 3652(a).

Editorial or stylistic change only.

14:5-1.5 Fault protection

Where buried communication and power supply conductors of 550 volts or more between conductors are installed in the same trench without separation and in accordance with the requirements of N.J.A.C. 14:5-1.2, the cable shall be protected by devices capable of clearing phase to ground faults.

Amended by R.1991 d.583, effective December 2, 1991.

See: 23 N.J.R. 1519(a), 23 N.J.R. 3652(a).

Editorial or stylistic change only.

14:5-1.6 Identification of conductors

Each company using a random burial method of the underground system shall properly identify their cable, and employees of a company shall know the identification of the cable belonging to their company.

14:5-1.7 Ground protection

(a) Where communication and power supply conductors are buried in the same trench without separation, the following ground protection shall be provided:

1. At each transformer and/or pedestal installation all grounds, sheaths and neutrals shall be interconnected. The common neutral conductor shall normally be continuous. Where straight splices are required in the common neutral, only two ends of the conductors shall be joined with one conductor. All interconnections, including equipment neutral connections, to the common neutral required by N.J.A.C. 14:5-1.2 through 1.8 shall be made by taps to the common neutral.

2. Telephone protectors, communication service cable shields and secondary neutrals shall be connected to a common ground at each customer's service entrance when communication circuits are underground without separation from power conductors.

Amended by R.1991 d.583, effective December 2, 1991.
See: 23 N.J.R. 1519(a), 23 N.J.R. 3652(a).
Editorial or stylistic change only.

14:5-1.8 Depth of buried cables

Where communication and power supply cables of over 550 volts between conductors are buried without separation in the same trench or without mechanical protection, the power cable shall be buried to a minimum of 30 inches of cover except under railroad tracks where they shall be buried with a minimum cover of 42 inches. In rock, 24 inch minimum cover will be acceptable or a lesser cover will be accepted where an adequate means of mechanical protection is provided.

14:5-1.9 Inspection of property

Each electric utility shall inspect lamps and street lighting accessories and maintain such service in accordance with established practice. Whenever any transformers, high tension insulators, and equipment are removed from the system for any reason they shall be inspected as to safety and serviceability before being reinstalled in the same or other location.

SUBCHAPTER 2. SERVICE**14:5-2.1 Service connections; electric**

(a) In areas not specifically designated as "underground zones" each electric utility shall supply without cost to the

customer at least 150 feet or more if no pole or structure is involved of overhead service connection as measured from the curb line nearest to the customer's facilities. Where the customer desires an underground service connection such facilities shall be provided, installed and maintained at the customer's sole cost and expense.

(b) In areas specifically designed as "underground zones" each electric utility shall supply without cost to the customer not more than 30 feet of underground service connection as measured at right angles to the curb nearest the point of service connection to the customer's facilities provided that an electric utility shall not be required to supply a service connection in whole or in part under or within a building.

(c) If the length of service connection exceeds the amount mentioned in (b) above, the customer may be required to pay for the cost of such excess.

(d) No utility shall be required to install service for a single phase motor having a rating greater than five horsepower.

Amended by R.1991 d.583, effective December 2, 1991.
See: 23 N.J.R. 1519(a), 23 N.J.R. 3652(a).
Editorial or stylistic change only.

14:5-2.2 Polyphase service

Where polyphase service is available, or can be made available in accordance with the rules and regulations in the utility's tariff, an applicant for polyphase service for a motor installation shall be supplied polyphase service where any one motor is over ten horsepower, or where any one motor is between five horsepower and ten horsepower and the supply of such motor with single phase service is likely to have an objectionable effect on the service to the applicant or upon other customers.

14:5-2.3 Adequacy of service

(a) Electric utilities supplying electrical energy on a constant potential system shall adopt and maintain a standard average value of voltage as measured at the point of attachment to the customer's wiring; and the normal variations, as measured by a standardized voltmeter, shall not vary for periods exceeding five minutes for service supplied at 150 volts or less to ground more than four per cent above, nor more than four per cent below said standard average voltage for said location which is in force at the time; provided, however, the variations in voltage caused by the operation of apparatus in customer's premises in violation of the utility's rules, the action of the elements, or other causes beyond the utility's control shall not be considered a violation of this provision.

(b) Each electric utility supplying alternating current shall adopt a standard frequency, the suitability of which may be determined by the Board, and shall maintain this frequency; provided, however, that changes or variations of frequency which are clearly due to no lack of proper equipment or

reasonable care on the part of the utility shall not be considered a violation of this rule.

Amended by R.1991 d.583, effective December 2, 1991.
See: 23 N.J.R. 1519(a), 23 N.J.R. 3652(a).
Editorial or stylistic change only.

14:5-2.4 Sealing of main fuse cabinets or circuit breakers

In the interest of safety to the electric utility customer and as a measure of protection to the utility, main service cabinets or cabinets enclosing main fuses and circuits may be sealed; provided, however, that the main switches or circuit breakers in such cabinets are externally operable; that service entrance wires are installed in accordance with the National Electrical Code; and that fuses or circuit breakers other than above mentioned are made accessible to the customer. The utility's service department should be so organized and directed that its customers may be assured prompt restoration of service when interrupted through failure of main fuses or opening of the circuit breakers which are sealed.

14:5-2.5 Grounding of secondaries

Secondaries shall be grounded by electric utilities in a manner which accords with the applicable provisions of the National Electrical Safety Code.

14:5-2.6 Refusal to connect

An electric utility may refuse to connect with any customer's installation when it is not in accordance with the National Electrical Code and with standard terms and conditions of the utility furnishing the service, and where a certificate approving the customer's electrical installation has not been issued by a county or a municipality or by some person, agency or organization duly appointed by the county or municipality to make such inspections. When a county or municipality has not provided, in accordance with applicable statutes, for the regulation and inspection of wires and appliances for the utilization of electrical energy, or has not appointed any person, agency or organization to make such inspections, then an inspection certificate, issued by an inspection agency designated by the electric utility in its filed tariff, shall be accepted in lieu thereof.

SUBCHAPTER 3. METERS

14:5-3.1 Testing of electric meters

(a) Each utility furnishing electric service shall provide and have available a meter testing laboratory, standard meters and instruments, and such other equipment and facilities as may be necessary to make the tests required by these regulations, or by other orders of the Board.

(b) Each utility furnishing electric service shall provide and have available such portable indicating electrical testing instruments and portable watt-hour meters of suitable range and type for testing service watt-hour meters, switchboard instruments, recording voltmeters and other electrical instruments in use as may be deemed necessary by the Board.

(c) For testing the accuracy of the portable watt-hour meters, commonly known as "rotating standards," and the portable instruments used for testing customer's service meters, each utility shall provide and have available suitable indicating electrical instruments, watt-meters, watt-hour meters, or any or all of them hereinafter called "reference standards". Such standards may be of the service type of watt-hour meters, but, if so, such watt-hour meters shall be permanently mounted in the meter laboratory of the utility and shall be used for no other purpose than for checking standards. All reference standards may be tested, adjusted and sealed by the Board at its discretion.

(d) All portable watt-hour meters (rotating standards) of the comutator type shall be compared with reference standards at least once each week. Every portable watt-hour meter (rotating standard) shall at all times be accompanied by a certificate giving the date when it was certified, the corrections to be applied at various loads, and signed by the proper authority. These certificates, when superseded, shall be kept on file in the office of the utility at least one year.

(e) All portable, indicating electrical testing instruments, such as, voltmeters, ammeters and watt-meters, when in regular use for testing purposes, shall be checked against reference standards at least once a week when continuing in use.

(f) Instruments and standards may be tested and certified by any standardizing laboratory whose instruments and methods are approved by the Board.

14:5-3.2 Periodic testing of electric meters

(a) All direct current meters installed upon customers' premises shall be periodically tested in accordance with the following schedule:

1. Up to and including six kilowatts—at least once in 3½ years;
2. Over six kilowatts, up to and including 100 kilowatts—at least once in 1½ years;
3. Over 100 kilowatts—at least once in one year.

(b) The kilowatt rating of a direct current meter is the product of the rated voltage and the rated current.

(c) All types of alternating current watt-hour meters installed upon customers' premises shall be tested as follows:

1. Self-contained polyphase meters and transformer rated meters:

- i. Meters without demand register—at least once in 16 years;
 - ii. Meters with block-interval demand registers—at least once in 12 years;
 - iii. Meters with lagged demand registers—at least once in eight years.
2. Self-contained single-phase meters and three-wire network meters—at least once in eight years or by a variable interval or statistical sampling technique approved by the Board.

As amended R.1979 d.374, effective September 5, 1979.
 See: 11 N.J.R. 402(c), 11 N.J.R. 585(c).
 Amended by R.1991 d.583, effective December 2, 1991.
 See: 23 N.J.R. 1519(a), 23 N.J.R. 3652(a).
 Editorial or stylistic change only.

14:5-3.3 Determination of electric meter accuracy

(a) No meter that has an error in registration of more than plus or minus two percent shall be placed in service or allowed to remain in service without adjustment.

(b) No meter which registers upon “no load” shall be placed in service or allowed to remain in service. To determine that a meter is registering upon “no load”, all load wires shall be removed, and if the meter disk then rotates at the rate of one revolution in five minutes or less it shall be considered as registering on “no load”.

(c) For periodic testing, the accuracy shall be determined by taking the average of the percentage registration at light load and heavy load. In periodic testing where the average accuracy shows the meter to be in error by more than two percent, the complaint testing method as stated below shall be used to determine the final accuracy of the meter.

(d) As used in this section, light load shall be approximately five to ten percent of rated current and heavy load shall be not less than 60 percent nor more than 150 percent of rated current.

(e) For complaint testing, the accuracy shall be determined by taking the average of the percentage registration at light load and at heavy load, giving the heavy load registration a weight of four.

14:5-3.4 Outdoor meters

All new electric meters installed outdoors shall be compensated for temperature variations.

14:5-3.5 Readjustment of electric meters

Each meter after being tested shall be adjusted to record within a tolerance of plus 0.3 percent and minus one percent at both light and heavy loads. These tolerances are specified to allow for necessary variations and meters must be adjusted to within the allowable tolerances as nearly as practicable to zero error. Meters removed from service are

to be tested and adjusted in the meter room before being put in service again. Each electric meter shall be tested for accuracy before installation or within 30 days after being set.

SUBCHAPTER 4. REGULATION FOR RESIDENTIAL ELECTRIC UNDERGROUND EXTENSIONS

14:5-4.1 Applicability

(a) Extension of electric distribution lines necessary to furnish an electric system to new residential subdivisions having three or more building lots, or to new multiple-occupancy buildings, shall be made underground.

(b) Such extensions of service shall be made by the utility in accordance with the provisions in this regulation. This Subchapter shall apply to those lines on which actual construction has commenced on or after January 1, 1974.

As amended, R.1973 d.335, effective December 3, 1973.
 See: 6 N.J.R. 22(b).
 As amended, R.1975 d.243, effective August 14, 1975.
 See: 7 N.J.R. 29(a), 7 N.J.R. 437(b).

Case Notes

General powers given to municipalities to regulate and inspect erection, alteration or repair of structures preempted by State with respect to installation and inspection of private home electrical wiring; ordinance mandating copper wiring use invalid as contravening legislative plan for regulation of electrical industry by Public Utilities Commission (citing former N.J.A.C. 14:5-7.5 and 7.9). Warren Park Estates, Inc. v. Twp. Committee, East Windsor Twp., 136 N.J.Super. 180, 345 A.2d 346 (App.Div.1975).

14:5-4.2 Definitions

The following words and terms when used in this subchapter, shall have the following meanings unless the context clearly indicates otherwise.

“Applicant” means the subdivider, developer, builder or owner applying for the construction of an electric distribution system in a subdivision.

“Board” means Board of Regulatory Commissioners.

“Building” means a permanent structure enclosed within exterior walls or fire walls, built, erected and framed of component structural parts and designed for single-family or duplex-family occupancy.

1. A duplex family building may consist of either a duplex apartment with rooms on two floors and a private interstairway, or a duplex house with two separate family units side by side.

“Cost” means actual expense incurred for materials and labor employed in the installation of an underground residential distribution system, including overheads directly at-

tributable to the field work, but excluding overrides or loading factors, such as for back-up personnel, mapping, records, clerical, superintendence or general office.

“Existing street” means a public street, road or highway, traversing or abutting the applicant’s subdivision, that was in existence and utilized prior to the approval and establishment of the subdivision.

“Extension” means an extension of facilities located on streets, highways, and/or rights of way acquired by the utility for common distribution.

“Mobile home” means a dwelling unit constructed for permanent occupancy which is designed for moving along roads and highways by towing with a truck or tractor and which is installed on a permanent foundation.

“Multiple-occupancy building” means a permanent structure enclosed or with exterior walls or fire walls, built, erected and framed of component structural parts and designed to contain three or more individual dwelling units and consisting of not more than four stories.

“New street” means a public street, road or highway, traversing or abutting the applicant’s subdivision, that was or will be constructed subsequent to the approval and establishment of the subdivision.

“Subdivision” means the tract of land which is divided into lots as approved by the appropriate authorities for the construction of new residential buildings or the placement of mobile homes, or the land on which new multiple-occupancy buildings are to be erected.

“Utility” means an “electric company” as defined in N.J.S.A. 48:2-13.

As amended, R.1973 d.335, effective December 3, 1973.

See: 6 N.J.R. 22(b).

As amended, R.1975 d.243, effective August 14, 1975.

See: 7 N.J.R. 29(a), 7 N.J.R. 437(b).

Amended by R.1991 d.583, effective December 2, 1991.

See: 23 N.J.R. 1519(a), 23 N.J.R. 3652(a).

Board designated as Board of Regulatory Commissioners pursuant to Reorganization Plan No. 002-1991.

14:5-4.3 Rights-of-way and easements

(a) Within the applicant’s subdivision the utility shall construct, own, operate and maintain underground distribution lines only along public streets, roads and highways which the utility has the legal right to occupy, and on public lands and private property across which rights-of-way and easements satisfactory to the utility both as to location and legal sufficiency are provided without cost to or condemnation by the utility.

(b) Rights-of-way and easements suitable to the utility must be furnished by the applicant in sufficient time to meet service requirements and at no cost to the utility. The rights-of-way or easements so granted must be cleared of trees, tree stumps and other obstructions above or below grade at no charge to the utility to a width sufficient to permit the use of machinery and equipment, and must be graded to within six inches of final grade by the applicant before the utility will commence construction. Such clearance and grading must be maintained by the applicant during construction by the utility.

14:5-4.4 Installation of underground distribution system within subdivision

(a) Upon receipt of a proper application the utility shall, after conditions in N.J.A.C. 14:5-4.3 have been met and after coordination with other utilities, install along new streets and along existing streets not already served by overhead facilities, using suitable materials, an underground electric distribution system reasonably equivalent to a comparable overhead system which will assure that the applicant will receive safe, adequate and proper electric service.

1. “Suitable materials” shall be construed to mean those components of a direct buried residential-type underground distribution system, including but not limited to transformers, which shall be pad mounted unless otherwise directed by the Board, cables, conduits, street lighting poles and fixtures, switch gear and enclosures, which the industry has adopted as standard consistent with the “state of the art” as it applies to the development of such components and also consistent with the service requirements of this rule. Such standards shall be understood to be reasonable standards designed to implement this rule with a minimum increase in the difference in cost between overhead and underground distribution systems.

2. At the request of the applicant, the utility may provide components which exceed such standards, provided that applicant shall bear the full cost of the excess facilities requested.

3. No utility will be obligated to furnish electric service to any building in a subdivision unless and until an application has been made for the distribution system in the subdivision in accordance with this subsection and a deposit has been made in accordance with N.J.A.C. 14:5-4.6, unless otherwise ordered by the Board.

(b) The applicant shall supply to the utility the preliminary or tentative subdivision map which has been submitted to and approved by the appropriate authorities, showing the subdivision of all of the applicant’s property, together with the anticipated electric load requirements for each living unit, to facilitate planning for the ultimate supply in the form of branch circuit, main feeder and/or substation facilities required.

(c) The applicant shall also supply the final subdivision map of the section of the subdivision which has received the final approval of the appropriate authorities and which the applicant proposes to develop in the immediate future. This submission shall also detail the planned electric load requirements as described in (b) above.

(d) The applicant, in addition, shall supply an estimate of the date electric service will initially be required and the time schedule for the full development of the subject section.

(e) Semiannually, each electric utility may submit a proposed tariff, modifying existing undergrounding charges. These proposed tariffs shall be supported by unit costs of construction in a form as required for approval by the Board.

(f) For the installation of an underground electric distribution system, the applicant shall pay the utility the differential cost between the construction of an underground and an equivalent overhead distribution system as determined from the utility's approved tariff as provided by (e) above.

(g) Such amounts as the public utility receives pursuant to its tariff, in accordance with this Subchapter and not subject to further refund, shall be credited to the appropriate utility plant account or accounts.

(h) The total front footage shall be determined by measuring the total street footage of all property within the subdivision, excepting those portions of existing streets along which overhead facilities are already installed. Buildings in the subdivision facing an existing street on which overhead facilities are presently installed may be served overhead.

(i) The service connection to each building will be at the nearest corner of the building to the point at which the service enters the property to be served. If such service length on property served is more than 50 feet, then the applicant shall pay the utility the amount per foot listed in the utility's approved tariff for the length in excess of 50 feet.

(j) For multiple-occupancy buildings, duplex family buildings and mobile homes, the underground distribution system within the subdivision shall be constructed by the utility in the most economical manner, as determined by the utility, and the applicant shall pay the utility the differential cost according to the component unit charges as listed in the utility's approved tariff. Any such buildings or mobile homes in the subdivision which abut an existing street on which overhead facilities are presently installed may be served overhead from the existing street. Should such buildings or mobile homes be served overhead, neither the number nor the frontage of such lots shall be included in the calculation to determine the applicant's contribution.

(k) The charges determined in accordance with this subchapter may not be waived or refunded unless such waiver or refund is specifically approved by the Board.

(l) Extensions of high-capacity main line distributing facilities, not exceeding 4MVA, solely within and for the applicant's subdivision, shall be made underground. The applicant shall pay the utility the differential cost for such extensions as determined from the component unit charge as listed in the utility's approved tariff:

1. Extensions of high-capacity main line distribution facilities, exceeding 4MVA, solely within the applicant's subdivision may be made overhead, unless otherwise ordered by the Board.

(m) Extensions of high-capacity main line distribution facilities, not exceeding 4MVA, solely within the applicant's subdivision and also necessary to serve adjacent residential, commercial, or industrial loads shall be made underground. The differential cost for such extensions shall be prorated in such a manner that the applicant shall pay the utility only for the capacity necessary to serve his subdivision. The utility may require a deposit and charge the balance differential cost to the other residential, commercial or industrial applicants, when service is requested for such loads, on a prorated basis.

1. Extensions of high-capacity main line distribution facilities exceeding 4MVA, solely within the applicant's subdivision and also necessary to serve adjacent residential, commercial or industrial loads, may be made overhead, unless otherwise ordered by the Board.

(n) Extensions of high-capacity main line distribution facilities, not exceeding 4MVA, to reach the applicant's subdivision, through another residential subdivision where the provisions of this subchapter are applicable, shall be made underground. The applicant shall pay the utility a prorated differential cost for such extensions only for that capacity necessary to serve his subdivision, in addition to the charges required pursuant to (f) above. The utility may require a deposit and charge the balance of the differential cost to the property owner or owners of the residential subdivision through which the extension is made, when such owner or owners make an application for electric service, on a prorated basis.

1. Extensions of high-capacity main line distribution facilities exceeding 4MVA to reach the applicant's subdivision, through another residential subdivision where the provisions of this Subchapter are applicable, may be made overhead, unless otherwise ordered by the Board.

As amended, R.1973 d.335, effective December 3, 1973.

See: 6 N.J.R. 22(b).

As amended, R.1975 d.243, effective August 14, 1975.

See: 7 N.J.R. 29(a), 7 N.J.R. 437(b).

Amended by R.1991 d.583, effective December 2, 1991.

See: 23 N.J.R. 1519(a), 23 N.J.R. 3652(a).

Editorial or stylistic change; new language in (n).

14:5-4.5 Connection to supply systems

The utility shall provide a connection, using the normal method of construction, from the boundary line of the applicant's subdivision to the utility's existing supply facilities.

As amended, R.1975 d.243, effective August 14, 1975.
See: 7 N.J.R. 29(a), 7 N.J.R. 437(b).

14:5-4.6 Advances by applicant

(a) Prior to the start of construction on a section of the subdivision, the utility shall require from the applicant a deposit equivalent to the estimated amount of charges payable to the utility in accordance with N.J.A.C. 14:5-4.4(f) for the total number of building lots shown on the subdivision map supplied to the utility by the applicant under the provisions of N.J.A.C. 14:5-4.4(c).

(b) Deposits will not carry interest.

(c) If the amount of the deposit is in excess of the charges payable to the utility in accordance with N.J.A.C. 14:5-4.4(f), then the excess amount shall be returned upon completion of the installation of the distribution construction facilities.

(d) Any portion of a deposit remaining unrefunded ten years from the date the utility is first ready to render service from the extension will be retained by the utility and credited to an appropriate account.

(e) When an applicant requests the installation of underground facilities in an area for which there is no planned immediate construction of dwelling units, the utility may require a deposit from the applicant in addition to a deposit required pursuant to (a) above. Such a deposit shall not be more than the estimated cost of providing equivalent overhead extension and shall be collected and refunded in accordance with N.J.A.C. 14:3-8.1.

As amended, R.1973 d.335, effective December 3, 1973.
See: 6 N.J.R. 22(b).
As amended, R.1975 d.243, effective August 14, 1975.
See: 7 N.J.R. 29(a), 7 N.J.R. 437(b).
Amended by R.1991 d.583, effective December 2, 1991.
See: 23 N.J.R. 1519(a), 23 N.J.R. 3652(a).
Editorial or stylistic change only.

14:5-4.7 Cooperation by applicant

(a) The charges specified in this subchapter are based on the premise that each applicant shall agree to cooperate with the utility in accordance with N.J.A.C. 14:5-4.3 in an effort to keep the cost of construction and installation of the underground electric distribution system as low as possible. This includes the scheduling of construction to preclude the necessity for trenching in frozen soils or in land fill operations before soils have become stabilized.

(b) Should unusual circumstances arise which unreasonably would delay underground service, temporary facilities may be installed in whatever manner is most practical under the circumstances, provided, however, that such temporary facilities shall be replaced as soon as practical with a permanent installation in accordance with the provisions of this Subchapter.

(c) Requests for adjustment of charges, specified in the tariff of any utility filed pursuant to N.J.A.C. 14:5-4.4(e), to cover excess cost, if any, due to temporary installations, may be referred to the Board in accordance with N.J.A.C. 14:5-4.11.

As amended, R.1973 d.335, effective December 3, 1973.
See: 6 N.J.R. 22(b).
As amended, R.1975 d.243, effective August 14, 1975.
See: 7 N.J.R. 29(a), 7 N.J.R. 437(b).
Amended by R.1991 d.583, effective December 2, 1991.
See: 23 N.J.R. 1519(a), 23 N.J.R. 3652(a).
Editorial or stylistic change only.

14:5-4.8 Construction

(a) Where practical, as determined by the affected utilities, electric cables, communication cables and cable television cables shall be installed in the same trench, care being taken to conform to any applicable codes and regulations.

(b) Where joint use of a trench is practical, a utility will not be obliged to commence work on an underground system unless and until the applicant has made all necessary arrangements with the communication utility and cable television company to commence work on their underground system.

(c) Pavement cutting and restoration, rock removal, blasting and difficult digging conditions requiring equipment and methods not generally used by the utility's forces shall be at actual low bid differential cost on a job-by-job basis, with the applicant having the option to have the work done by himself or his agent, if qualified to do this type of work. This provision shall not apply where the utilities have entered into contractual agreements with agents to perform the above work. However, such agreements shall not be effective unless and until filed with and accepted by the Board.

(d) In subdivisions where lot sizes, configurations or requirements are such that, in the utility's judgment, primary conductors must be extended into the lots in the subdivision to adequately serve the same, the applicant shall pay the utility the cost of such extensions determined in accordance with the utility's approved tariff.

(e) In each subdivision if the average transformer capacity per dwelling unit is in excess of 8.5 KVA, the utility may make an additional charge to the applicant per dwelling unit equal to the average differential cost of installing such transformer capacity of 8.5 KVA per dwelling unit.

As amended, R.1973 d.335, effective December 3, 1973.
 See: 6 N.J.R. 22(b).
 As amended, R.1975 d.243, effective August 14, 1975.
 See: 7 N.J.R. 29(a), 7 N.J.R. 437(b).
 Amended by R.1991 d.583, effective December 2, 1991.
 See: 23 N.J.R. 1519(a), 23 N.J.R. 3652(a).
 Editorial or stylistic change only.

14:5-4.9 Street lighting

(a) All subdivisions to be supplied from underground electric facilities shall have incorporated in their design the requirements for street lighting in accordance with the standards in general use in the municipality.

(b) Such street lighting shall also be served underground.

(c) Poles and fixtures shall be selected from the types and sizes adopted by the utility as standard.

14:5-4.10 Records

(a) Each electric utility shall maintain on a calendar year basis for periodic review by, or upon request, submission to the Board the following records:

1. The amount of trench which it has shared with communication cables and cable television cables. The record shall also show the contribution per foot by it and by the collaborating telephone companies and cable television companies for joint use of trench.

2. The number of subdivisions, the number of lots and the number of buildings of all types, including mobile home, for which service was made available under this subchapter.

As amended, R.1973 d.335, effective December 3, 1973.
 See: 6 N.J.R. 22(b).
 As amended, R.1975 d.243, effective August 14, 1975.
 See: 7 N.J.R. 29(a), 7 N.J.R. 437(b).
 Amended by R.1991 d.583, effective December 2, 1991.
 See: 23 N.J.R. 1519(a), 23 N.J.R. 3652(a).
 Added reference to cable television companies.

14:5-4.11 Special conditions or exemptions

(a) When the application of this subchapter will result in extreme hardship or inequity, or be discriminatory to other customers, the utility or applicant may refer the matter to the Board for special exemptions or for approval of special conditions.

(b) The applicant invoking the jurisdiction of this Board, pursuant to (a) above, may be required to deposit in an escrow account as determined by the Board, prior to hearing, a deposit up to the estimated cost differential between

underground and overhead service to be advanced to the utility in the event the Board determines an exemption is not warranted.

As amended, R.1973 d.335, effective December 3, 1973.
 See: 6 N.J.R. 22(b).
 As amended, R.1975 d.243, effective August 14, 1975.
 See: 7 N.J.R. 29(a), 7 N.J.R. 437(b).
 Amended by R.1991 d.583, effective December 2, 1991.
 See: 23 N.J.R. 1519(a), 23 N.J.R. 3652(a).
 Editorial or stylistic change only.

14:5-4.12 Prior regulations

Except for N.J.A.C. 14:3-8.1, 14:3-8.2 and 14:3-8.3 and except as otherwise provided herein, rules, regulations and standards heretofore promulgated with respect to the subject matter encompassed by this subchapter are hereby superseded and revoked.

14:5-4.13 Compliance

(a) This subchapter, having been enacted in the public interest, calls for cooperation by utilities, developers, builders and municipal bodies to achieve the desired underground electric service in new residential subdivisions at the lowest reasonable cost consistent with system reliability and safety.

(b) Therefore, in accordance with N.J.S.A. 48:2-13 which grants general supervision and regulation of, and jurisdiction and control over, all public utilities to the Board, requirements in conflict with this subchapter which would prevent or interfere with electric utilities' compliance with this subchapter shall not be imposed through municipal ordinances or regulations.

As amended, R.1973 d.335, effective December 3, 1973.
 See: 6 N.J.R. 22(b).
 As amended, R.1975 d.243, effective August 14, 1975.
 See: 7 N.J.R. 29(a), 7 N.J.R. 437(b).

APPENDIX A—REGULATION FOR RESIDENTIAL ELECTRIC UNDERGROUND EXTENSIONS

Illustrative examples of how costs for underground extensions are to be determined in different situations.

Note: Dollar amounts shown are for illustrative purposes only and do not represent current utility charges. Such current charges are shown in the tariff of each individual electric utility and is on file with the Board and available for inspection at either the offices of the Board or the local offices of the utility.

A. For each building lot being served, the applicant shall pay the utility the amount determined from the following table:

	Base Charge* Per Building Lot	Charge per Front Foot of Building Lot in Excess of 50 Feet
1. Single-family (base charge plus avg. lot width X charge/ft.)	\$120.00	\$.50

2. Duplex-family (single service)	\$110.00	\$.50
3. Duplex-family (separate service)	\$200.00	\$.70
4. Mobile home) Charge to be based on differential cost according to unit costs specified in Exhibit 1.	
5. Multiple occupancy		

**B. Additional Charges
Item**

1. Excess service length	Per Ft. Trench 100 & 150 Amp	\$.45
	Over 150 Amp	\$.51
2. Special street light poles		
a. 30 ft. laminated	Each	\$ 98.00
b. 17 ft. post top	"	\$ 20.00
3. Additional street lights where spacing is less than 200 ft. **		
a. standard pole	"	\$ 85.00
b. 30 ft. laminated pole	"	\$183.00
c. 17 ft. post top pole	"	\$105.00
4. Multi-phase constructions	Per Foot Per Phase	\$.22
5. Rock removal—) At actual low bid cost with option of applicant to contract for.	
6. Rock blasting & removal)		
7. Pavement cutting & restoration		

* Based on use of pad mounted transformers, standard street light poles, foundations and cable, and including the cost of all trenching and backfilling for 50 ft. wide building lot.
 ** Cost of pole = cost of pole and luminaire – cost of luminaire.

**EXHIBIT 1
Unit Costs of Construction
Undergrounding**

Item	Unit	Unit Material Cost	Unit Labor Cost	Total
Trenching	per foot	—	.24	0.24*
Primary cable, # 2 copper	" "	.43	.17	.60
Secondary & service cable				
1/0, 3 wire	" "	.27	.31	.58
4/0, 3 wire	" "	.51	.31	.82
350 kcmil, 3 wire	" "	2.54	.31	2.85
Primary termination	each	81.00	106.00	187.00
Primary junction enclosure	"	255.00	63.00	318.00
Secondary enclosure	"	67.00	42.00	109.00
Conduit, 4 inches PVC	per foot	.39	.38	.77
Street light cable	" "	.12	.18	.30
Transformers, Incl. Pad				
25 kva	each	427.00	97.00	524.00
50 kva	"	486.00	97.00	583.00
75 kva	"	625.00	97.00	722.00
100 kva	"	756.00	97.00	853.00
167 kva	"	1010.00	97.00	1107.00
Street light poles & luminaires (100W or 175W)				
30 ft. Grey round pole	"	100.00	46.00	146.00
30 ft. Laminated pole	"	192.00	52.00	244.00
17 ft. Post top pole	"	128.00	38.00	166.00
Street light luminaire	"	42.00	19.00	61.00

**EXHIBIT 1
Unit Costs of Construction
Overhead**

Item	Unit	Unit Material Cost	Unit Labor Cost	Total
Pole line (incl. 7-25 ft. & 2-40 ft. poles, 3 anchors & guys per 1000 ft.)	per foot	.45	.38	.83**
Primary wire, insulated	per foot	.17	.21	.38
Primary wire, bare	per foot	.04	.15	.19
Secondary cable, 2/0	per foot	.24	.22	.46
Service, 100 & 150 amp over 150 amp	each	8.00	12.00	20.00
Transformers				
25 kva	"	179.00	65.00	244.00
50 kva	"	269.00	65.00	334.00
100 kva	"	449.00	65.00	514.00
Street light luminaire	"	42.00	19.00	61.00

Pole line cost to be used = \$.42/ft. based on 100 per cent joint pole line.

**EXHIBIT 2
Single Family**

Charge Per Front Foot of Building Lot

This is based on the differential cost of those components of system design that will vary with the lot width. Because the customer's service size is also a variable factor, two charges are calculated and weighted by the following percentages:

- 100 & 150 amp service—93 percent
- Over 150 amp service—7 percent

SAMPLE I—100 & 150 amp customer service

Trenching cost to be used in calculating differential charge = \$.14/ft. based on 85 percent joint trench, 15 percent sole trench.
 $\frac{1}{2} ($.24 \times .85) + $.24 \times .15 = $.102 + $.036 = $.138$ or \$.14

Underground	
Trenching (.75 × \$.14) One side of street requires trench which accommodates primary and service cables for each foot of building lot. Other side of street requires one foot of trench for each two feet of building lot for service cable.	\$1.050
Primary Cable (.50 × \$.60) One foot of cable required for each two feet of building lot.	.3000
Primary Conduit (50 ft ÷ 500' × .5 × \$.77) Fifty feet of conduit (road crossing estimated for each 500 feet of primary cable. Cost based on one foot of cable for each two feet of building lot.	.0385
1/0 Service Cable, Longitudinal Run (.50 × \$.58) One foot of cable required for each two feet of building lot.	.2900
Street Lights (\$146.00 ÷ 400 ft) 200 ft. spacing between lights. The cost is allocated for 400 ft of building lot.	.3650
Street Light Cable (\$.30 × 100 ft. ÷ 400 ft.) 100 ft. of 2/c cable for each street light allocated for 400 ft of building lot frontage.	.0750
Total Underground Cost per Building Lot Foot	\$1.1735

EXHIBIT 2

Overhead	
Joint Pole Line (.50 × \$.42) One foot of pole line for each two feet of building lot.	\$2.100
Primary Wire, Insulated (.50 × \$.38) One foot of wire for each two feet of building lot.	.1900
Primary Wire, Bare Neutral and Secondary Cable (.25 × \$.65) One foot of bare neutral wire and secondary cable is required for each four feet of building lot.	.1625
Street Lights (\$61.00 ÷ 400 ft.) 200 ft spacing between lights. The cost is allocated for 400 ft of building lot.	.1525
Total Overhead Cost per Building Lot Foot	\$.7150
Additional Charge per Foot (Differential Cost)	
\$1.1735 - \$.7150 = \$.4585	

SAMPLE II—Over 150 amp customer service

Underground	
Trenching (same as Sample I)	\$1.050
Primary Cable (same as Sample I)	.3000
Primary Conduit (same as Sample I)	.0385
4/0 Service Cable (.50 × \$.82) See Sample I	.4100
Street Light (same as Sample I)	.3650
Street Light Cable (same as Sample I)	.0750
Total Underground Cost per Building Lot Foot	\$1.2935
Overhead	
Total Cost per Building Lot Foot (same as Sample I)	\$.7150

Additional Charge per Foot (Differential Cost)
\$1.2935 - \$.7150 = \$.5785
Weighted Charge per Front Foot of Building Lot

Saturations = 93 per cent @ 100 amp/150 amp and 7 per cent @ over 150 amp
 $($.4585 \times .93) + ($.5785 \times .07) = $.4264 + $.0404 = $.4668$
TOTAL FRONT FOOT CHANGE = \$.47

EXHIBIT 2

Base Charge Per Building Lot

This is the differential cost between certain elements of underground and overhead design that are dependent only upon the customer's load and are not affected by the building lot width. Two sample calculations are made for each of two basic load levels and number of lots served by a transformer. These calculations are then weighted by the following percentages:

Number of lots served by a transformer: 7 - 75 per cent 4 - 25 per cent
 Customer loads: 8 kva - 93 per cent - 7 per cent

SAMPLE I—8 kva per building lot—7 lots per transformer

Underground	
1-50 kva transformer (7 × 8 kva = 56 kva)	\$583.00
1-subsurface secondary enclosure	109.00
50 ft. - 4 inches PVC conduit & trench (road crossing) @ (\$.77 + \$.14)	45.50
50 ft. - 350 kamil secondary cable (road crossing) @ \$2.85	142.50
50 ft. - 1/0 service & trench (service length on lot) @ (\$.58 + \$.14) × 7	252.00
Total base underground cost for 7 lots	\$1,132.00

Overhead	
1-50 kva transformer (7 × kva = 56 kva)	\$334.00
7-services @ \$20.00	140.00
Total base overhead cost for 7 lots	\$474.00
Differential cost for 7 lots = \$1,132.00 - \$474.00 = \$658.00	

Cost per lot = $\frac{\$658.00}{7} = \94.00

SAMPLE II—8 kva per building lot—4 lots per transformer

Underground	
1-25 kva transformer (4 × 8 kva = 32 kva)	\$524.00
50 ft.—4 inches PVC conduit & trench (road crossing) @ (\$.77 + \$.14)	45.50
50 ft.—1/0 service (road crossing) @ \$.58 × 2 services	58.00
50 ft.—1/0 service & trench (service length on lot) @ (\$.58 + \$.14) × 4	144.00
Total base underground cost for 4 lots	\$771.50

Overhead	
1-25 kva transformer (4 × 8 kva = 32 kva)	\$244.00
4-services @ \$20.00	80.00
Total base overhead cost for 4 lots	\$324.00

Differential cost for 4 lots = \$771.50 - \$324.00 = \$447.50

Cost per lot = $\frac{\$447.50}{4}$ = \$111.88

Avg. cost (weighted) for Samples I & II
 $(.75 \times \$94.00) + (.25 \times \$111.88) = \$70.50 +$
 $\$27.97 = \98.47

SAMPLE III—14 kva per building lot—7 lots per transformer

Underground	
1—100 kva transformer (7 × 14 kva = 98 kva)	\$853.00
1—subsurface secondary enclosure	109.00
50 ft.—4 inches PVC conduit & trench (road crossing) @ (\$.77 + \$.14)	45.50
50 ft.—350 kamil secondary cable (road crossing) @ \$2.85	142.50
50 ft.—4/0 service & trench (service length on lot) @ (\$.82 + \$.14) × 7	<u>336.00</u>
Total base underground cost for 7 lots	\$1,486.00
Overhead	
2—50 kva transformers (7 × 14 kva = 98 kva)	\$668.00
7—services @ \$34.00	<u>238.00</u>
Total base overhead cost for 7 lots	\$906.00

Differential cost for 7 lots = \$1,486.00 - \$906.00 = \$580.00

Cost per lot = $\frac{\$580.00}{7}$ = \$82.86

SAMPLE IV—14 kva per building lot—4 lots per transformer

Underground	
1—50 kva transformer (4 × 14 kva = 56 kva)	\$583.00
50 ft.—4 inches PVC conduit & trench (road crossing) @ (\$.77 + \$.14)	45.50
50 ft.—4/0 service (road crossing) @ \$.82 × 2 services	82.00
50 ft.—4/0 service & trench (service length on lot) @ (\$.82 + \$.14) × 4	<u>192.00</u>
Total base underground cost for 4 lots	\$902.50

Overhead	
1—50 kva transformer (4 × 14 kva = kva)	\$334.00
4—services @ \$34.00	<u>136.00</u>
Total base overhead cost for 4 lots	\$470.00

Differential cost for 4 lots = \$902.50 - \$470.00 = \$432.50

Cost per lot = $\frac{\$432.50}{4}$ = \$108.13

Avg. cost (weighted) for Samples III & IV
 $(.75 \times \$82.86) + (.25 \times \$108.13) = \$62.15 +$
 $\$27.03 = \89.18 per lot
 Base Charge per 50 ft. Building Lot
 Saturation = 93 per cent @ 8 kva and 7 per cent @ 14 kva.
 $(.93 \times \$98.47) + (.07 \times \$89.18) = \$91.58 +$
 $6.24 =$ \$97.82

Building lot 50' Frontage = 50 × \$.47 = 23.50
TOTAL BASE CHARGE PER 50 ft. BUILDING LOT \$121.32

EXHIBIT 3

**Duplex Family—Single Service
 Charge per Front Foot of Building Lot**

This is based on the differential cost of those components of system design that will vary with the lot width. Because the customer's service size is also a variable factor, two charges are calculated and weighted by the following percentages:

100 & 150 amp service—93 percent
 Over 150 amp service—7 percent

SAMPLE I—100 & 150 amp customer service

Underground	
Trenching (.75 × \$.14)	\$1.050
One side of street requires trench which accommodates primary and services cables for each foot of building lot. Other side of street requires one foot of trench for each two feet of building lot for service cable.	
Primary Cable (.50 × \$.60)	.3000
One foot of cable required for each two feet of building lot.	
Primary Conduit (50 ft ÷ 500 ft × .5 × \$.77)	.0385
Fifty feet of conduit (road crossing) estimated for each 500 feet of primary cable. Cost based on one foot of cable for each two feet of building lot.	
1/0 Service Cable, Longitudinal Run (.50 × \$.58)	.2900
One foot of cable required for each two feet of building lot.	
Street Lights (\$146.00 ÷ 400 ft.)	.3650
200 ft. spacing between lights. The cost is allocated for 400 ft. of building lot.	
Street Light Cable (\$.30 ft. 100 ft. ÷ 400 ft.)	.0750
100 ft. of 2/c cable for each street light allocated for 400 ft. of building lot frontage.	
Total Underground Cost per Building Lot Foot	<u>\$1.1735</u>

EXHIBIT 3

Overhead	
Joint Pole Line (.50 × \$.42)	\$2.100
One foot of pole line for each two feet of building lot.	
Primary Wire, Insulated (.50 × \$.38)	.1900
One foot of wire for each two feet of building lot.	
Primary Wire, Bare Neutral and Secondary Cable	.1625
One foot of bare neutral wire and secondary cable is required for each four feet of building lot. (.25 × \$.65)	
Street Lights (\$61.00 ÷ 400 ft.)	.1525
200 ft. spacing between lights. The cost is allocated for 400 ft. of building lot.	
Total Overhead Cost per Building Lot Foot	<u>\$.7150</u>
Additional Charge per Foot (Differential Cost)	
\$1.1735 - \$.7150 = \$4585	

SAMPLE II—Over 150 amp customer service

Underground	
Trenching (same as Sample I)	\$1.1050
Primary Cable (Same as Sample I)	.3000
Primary Conduit (same as Sample I)	.0385
4/0 Service Cable (.50 × \$.82)	
See Sample I	.4100
Street Light (same as Sample I)	.3650
Street Light Cable (same as Sample I)	<u>.0750</u>
Total Underground Cost per Building Lot Foot	\$1.2935

Overhead	
Total Cost per Building Lot Foot (same as Sample I)	\$.7150
Additional Charge per Foot (Differential Cost)	
\$1.2935 - \$.7150 = \$.5785	
Weighted Charge per Front Foot of Building Lot Saturations = 93 per cent @ 100 amp and 7 per cent @ over 150 amp	
(.93 × \$.4585) + (.07 × \$.5785) = \$.4264 + \$.0404 = \$.4668	

TOTAL FRONT FOOT CHARGE = \$.47

EXHIBIT 3

Base Charge per Building Lot

This is the differential cost between certain elements of underground and overhead design that are dependent only upon the customer's load and are not affected by the building lot width. Two sample calculations are made for each of two basic load levels and number of lots served by a transformer. These calculations are then weighted by the following percentages:

Number of lots served by a transformer: 7—75 percent;
4—25 percent

Customer loads: 12 kva—93 percent; 20 kva—7 percent

SAMPLE I—12 kva per building lot—7 lots per transformer

Underground	
1—75 kva transformer (7 × 12 kva = 84 kva)	\$722.00
1—subsurface secondary enclosure	109.00
50 ft.—4 inches PVC conduit & trench (road crossing) @ (\$.77 + \$.14)	45.50
50 ft.—350 kamil secondary cable (road crossing) @ \$2.85.00	142.50
50 ft.—4/0 service & trench (Service Length on lot) @ (\$.82 + \$.14) × 7	<u>336.00</u>
Total base underground cost for 7 lots	\$1,355.00

Overhead	
1—50 kva transformer	
1—25 kva transformer (7 × 12 kva = 84 kva)	\$578.00
7—2/0 services @ \$34.00	<u>238.00</u>
Total base overhead cost for 7 lots	\$816.00
Differential cost for 7 lots = \$1,355.00 - \$816.00 =	\$539.00

Cost per lot = $\frac{\$539.00}{7}$ = \$77.00

SAMPLE II—12 kva per building lot—4 lots per transformer

Underground	
1—50 kva transformer (4 × 12 kva = 48 kva)	\$583.00
50 ft.—4 inches PVC conduit & trench (road crossing) @ (\$.77 + \$.14)	45.50
50 ft.—4/0 service (road crossing) @ \$.82 × 2 services	82.00
50 ft.—4/0 service & trench (service length on lot) @ (\$.82 + \$.14) × 4	<u>192.00</u>
Total base underground cost for 4 lots	\$902.50

EXHIBIT 3

Overhead	
1—50 kva transformer (4 × 12 kva = 48 kva)	\$334.00
4—2/0 services @ \$34.00	<u>136.00</u>
Total base overhead cost for 4 lots	\$470.00
Differential cost for 4 lots = \$902.50 - \$470.00 =	\$432.50
Cost per lot = $\frac{\$432.50}{4}$	= \$108.13

Avg. cost (weighted) for Samples I & II
(.75 × \$77.00) + (.25 × \$108.13) = \$57.75 + \$27.03 = \$84.78 per lot

SAMPLE III—20 kva per building lot—5 lots per transformer

Underground	
1—100 kva transformer (5 × 20 kva = 100 kva)	\$853.00
1—subsurface secondary enclosure	109.00
50 ft.—4 inches PVC conduit & trench (road crossing) @ (\$.77 + \$.14)	45.50
50 ft.—350 kamil secondary cable (road crossing) @ \$2.85	142.50
50 ft.—4/0 service & trench (service length on lot) (\$.82 + \$.14) × 5	<u>240.00</u>
Total base underground cost for 5 lots	\$1,390.00

Overhead	
2—50 kva transformers (5 × 20 kva = 100 kva)	\$668.00
5—2/0 services @ \$34.00	<u>170.00</u>
Total base overhead cost for 5 lots	\$838.00
Differential cost for 5 lots = \$1,390.00 - \$838.00	\$552.00

Cost per lot = $\frac{\$552.00}{5}$ = \$110.40

SAMPLE IV—20 kva per building lot—4 lots per transformer

Underground	
1—75 kva transformer (4 × 20 kva = 80 kva)	\$722.00
50 ft.—4 inches PVC conduit & trench (road crossing) @ (\$.77 + \$.14)	45.50

50 ft.—4/0 service (road crossing) @ \$.82 × 2 services	82.00
50 ft.—4/0 service & trench (service length on lot) (\$.82 + \$.14) × 4	<u>192.00</u>
Total base underground cost for 4 lots	\$1,041.50

EXHIBIT 4

Duplex Family—Separate Service

Charge per Front Foot of Building Lot

This is based on the differential cost of those components of system design that will vary with the lot width. Services are usually less than (equal to) 150 amp and therefore only one front foot charge as calculated.

100 & 150 AMP CUSTOMER SERVICE

Underground	
Trenching	\$.1400
One side of street requires trench which accommodates primary & service cables for each foot of building lot. Other side also requires one foot of trench for each foot of building lot due to separate services.	
Primary Conduit (50 ft. ÷ 500 ft. × .5 × \$.77)	
One foot of cable required for each two feet of building lot.	
Primary Conduit (50' ÷ 500 ft. × .5 × \$.77)	.0385
Fifty feet of conduit (road crossing) estimated for each 500 feet of primary cable. Cost based on one foot of cable for each two feet of building lot.	
1/0 Service Cable, Longitudinal Run	.5800
One Foot of cable required for each foot of building lot due to separate services.	
Street Lights (\$146.00 ÷ 400 ft.)	.3650
200' spacing between lights. The cost is allocated for 400' of building lot.	
Street Light Cable (\$.30 × 100 ft. ÷ 400 ft.)	.750
100' of 2/c cable for each street light allocated for 400' of building lot frontage.	
Total Underground Cost per Building Lot Foot	<u>\$1.4985</u>
Overhead	
Joint Pole Line (.50 × \$.42)	\$.2100
One foot of pole line for each two feet of building lot.	
Primary Wire, Insulated (.50 × \$.38)	.1900
One foot of wire for each two feet of building lot.	

EXHIBIT 4

Secondary Cable (.50 × \$.46)	\$.2300
One foot of cable for each two feet of building lot.	
Street Lights (\$61.00 ÷ 400 ft.)	.1525
200' spacing between lights. The cost is allocated for 400' of building lot.	
Total Overhead Cost per Building Lot Foot	<u>\$.7825</u>
Differential Charge per Front Foot of Building Lot = \$1.4985 - \$.7825 = \$.7160	
TOTAL FRONT FOOT CHARGE = \$.72	

EXHIBIT 4

Base Charge Per Building Lot

This is the differential cost between certain elements of underground and overhead design that are dependent only upon the customer's load and are not affected by the building lot width. Since separate services are required, it is not economical to serve more than four lots per transformer. One sample calculation is made for each of the two basic load levels. This calculation is then weighted by the following percentages:

Customer loads: 12 kva—93 percent; 20 kva—7 percent

SAMPLE I—12 kva per building lot—4 lots per transformer

Underground	
1—50 kva transformer (4 × 12 kva = 48 kva)	\$583.00
1—subsurface secondary enclosure	109.00
50 ft.—4 inches PVC conduit & trench (road crossing) @ (\$.77 + \$.14)	45.50
50 ft.—350 kamil secondary cable (road crossing) @ \$2.85	142.50
50 ft.—1/0 service & trench (service length on lot) (\$.58 + .14) × 8 services	<u>288.00</u>
Total base underground cost for 4 lots	\$1,168.00
Overhead	
1—50 kva transformer (4 × 12 kva = 48 kva)	\$334.00
8—services × \$20.00	<u>160.00</u>
Total base overhead cost for 4 lots	\$494.00
Differential cost for 4 lots = \$1,168.00 - \$494.00 = \$674.00	
Cost per lot = $\frac{\$674.00}{4}$ = \$168.50	

SAMPLE II—20 kva per building lot—4 lots per transformer

Underground	
1—75 kva transformer (4 × 20 = 80 kva)	\$722.00
1—subsurface secondary enclosure	109.00
50 ft. 4 inches PVC conduit & trench (road crossing) @ (\$.77 + \$.14)	45.50
50 ft.—350 kamil secondary cable (road crossing) @ \$2.85	142.50
50 ft.—1/0 service & trench (service length on lot) @ (\$.58 + \$.14) × 8 services	<u>288.00</u>
Total base underground cost for 4 lots	\$1,307.00
Overhead	
1—50 kva transformer)	
1—25 kva transformer) (4 × 20 = 80 kva)	\$578.00
8—services × \$20.00	<u>160.00</u>

EXHIBIT 4

Total base overhead cost for 4 lots	\$738.00
Differential cost for 4 lots = \$1,307.00 - \$738.00 =	
Cost per lot = $\frac{\$569.00}{4}$ = \$142.25	\$5569.00

Base Charge per 50 ft. Building Lot
Saturation = 93 per cent @ 12 kva & 7 per cent @ 20 kva

$(\$168.50 \times .93) + (\$142.25 \times .07) = \$156.71$
 $+ \$9.96 =$ \$166.67
 Building Lot 50 ft. Frontage = $50 \times \$72 =$ 36.00
TOTAL BASE CHARGE PER 50 ft. BUILDING LOT = \$202.67

EXHIBIT 5

Excess Service Length

- a) 100 & 150 amp service per trench foot
 - Cost of underground service (\$.58 + \$.14)
 - 1/0, 3 wire service and trench \$.72
 - Cost of overhead service ($\$20 \div 75$) \$20
 - for 75 feet service .27
 - Differential cost per trench foot = \$.45
- b) Over 150 amp service per trench foot
 - Cost of underground service (\$.82 + \$.14)
 - 4/0 3 wire service and trench \$.96
 - Cost of overhead service ($\$34 \div 75$) \$34
 - for 75 feet service .45
 - Differential cost per trench foot = \$.51

Amended by R.1991, d.883, effective December 2, 1991.
 See: 23 N.J.R. 1519(a), 23 N.J.R. 3652(a).

SUBCHAPTER 5. UNIFORM SYSTEM OF ACCOUNTS FOR CLASSES A AND B ELECTRIC UTILITIES

14:5-5.1 Adoption by reference of the Uniform System of Accounts

The Board adopts by reference the Uniform System of Accounts for Classes A and B Electric Utilities that have been promulgated by the Federal Energy Regulatory Commission as well as all present and subsequent amendments, revisions, deletions and corrections which the Federal Energy Regulatory Commission may adopt insofar as they relate to electric utilities subject to the jurisdiction of the Board and are in accordance with the Board's policies and procedures.

Amended by R.1991 d.583, effective December 2, 1991.
 See: 23 N.J.R. 1519(a), 23 N.J.R. 3652(a).
 Editorial or stylistic change only.

14:5-5.2 Adoption by reference of rules concerning preservation of records; electric utilities

(a) On September 14, 1972, the then Board of Public Utility Commissioners in the Department of Public Utilities, pursuant to authority of N.J.S.A. 48:2-1 et seq. and in accordance with applicable provisions of the Administrative Procedure Act of 1968, adopted by reference the "Regulations to Govern the Preservation of Records of Electric, Gas and Water Utilities" originally proposed to various states for adoption by the National Association of Regulatory Utility Commissioners as promulgated and published in April, 1972, for use by the electric, gas and water utilities.

(b) The Board of Regulatory Commissioners adopts these rules as its modified regulations governing the preservation and destruction of records for all classes of electric, gas and water utilities subject to its jurisdiction and as a supplement to its uniform system of accounts for all classes of electric, gas and water utilities.

(c) Copies of the full text of these rules are available for examination in the Board's offices in Two Gateway Center, Newark, New Jersey 07102 and are included in the case files in these dockets. Additional copies may be purchased from the National Association of Regulatory Utility Commissioners, P.O. Box 684, Washington, D.C. 20044.

R.1972 d.181, effective September 18, 1972.
 See: 4 N.J.R. 241(b).
 Public Notice: Change of address.
 See: 19 N.J.R. 890(a).
 Amended by R.1991 d.583, effective December 2, 1991.
 See: 23 N.J.R. 1519(a), 23 N.J.R. 3652(a).
 Editorial or stylistic change only.

SUBCHAPTER 6. ELECTRIC TRANSMISSION LINES

14:5-6.1 Requirements for electric transmission lines

(a) Whenever an electric company constructs an overhead transmission line, it shall:

1. Make use of available railroad or other rights-of-way whenever practicable, feasible and with safety, subject to agreement with the owners;
2. Locate towers whenever practicable and feasible in accordance with the topography so as to minimize their appearance;
3. Establish a program of painting towers initially and periodically in order to camouflage their appearance as much as possible;
4. Employ nonuniform clearing of the right-of-way and, wherever possible, in accordance with sound construction and maintenance practice as well as clearance requirements, allow a maximum number of mature trees to remain;
5. Landscape the right-of-way by planting low-growing shrubs where the right-of-way is visible from heavily travelled roads;
6. Wherever practical and feasible, consistent with municipal zoning laws, permit use of the right-of-way for farming, recreational and other appropriate purposes. If it is proposed by electric company that such use is not practical and feasible, the electric company shall send written notice, including its reasons, to the Board for final determination;
7. When the application of the foregoing provision shall be unreasonable in a specific instance, petition for relief from the specific provision may be filed by any aggrieved person.

R.1972 d.236, effective November 28, 1972.
See: 4 N.J.R. 224(b), 5 N.J.R. 19(a).

SUBCHAPTER 7. (RESERVED)

Case Notes

Action to enjoin tree removal on easement by utility within jurisdiction of Board of Public Utilities for Resolution as a contested case. *Boss v. Rockland Electric Co.*, 95 N.J. 33, 468 A.2d 1055 (1983).
