

CHAPTER 5
ELECTRIC SERVICE

Authority

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

Source and Effective Date

R.2002 d.314, effective August 21, 2002.
See: 34 N.J.R. 1390(a), 34 N.J.R. 3234(a).

Chapter Expiration Date

Chapter 5, Electric Service, expires on August 21, 2007.

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 adopted as R.1971 d.183, effective December 31, 1971. See: 1 N.J.R. 9(a), 3 N.J.R. 277(c). Subchapter 7, was adopted as R.1973 d.106, effective April 19, 1973. 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 Subchapter 7 was repealed by R.1977 d.37, effective February 17, 1977. See: 9 N.J.R. 139(a).

Pursuant to Executive Order No. 66(1978), Subchapter 3 expired on April 23, 1984.

A new Subchapter 3, Meters, was adopted as R.1985 d.625 effective December 16, 1985. See: 17 N.J.R. 2237(a), 17 N.J.R. 2998(a).

Pursuant to Executive Order No. 66(1978), Chapter 5, Electric, expired on December 16, 1990.

Chapter 5, Electric, was adopted as new rules by R.1991 d.583, effective December 2, 1991. See: 23 N.J.R. 1519(a), 23 N.J.R. 3652(a).

Pursuant to Executive Order No. 66(1978), Chapter 5, Electric Service, expired on December 2, 1996.

Chapter 5, Electric Service, was adopted as new rules by R.1997 d.99, effective March 3, 1997. See: 28 N.J.R. 4080(a), 29 N.J.R. 786(b).

Subchapter 7, Interim Electric Distribution Service Reliability and Quality Standards, was adopted as R.2001 d.3, effective January 2, 2001. See: 32 N.J.R. 2980(a), 33 N.J.R. 123(a).

Chapter 5, Electric Service, was readopted as R.2002 d.314, effective August 21, 2002. See: Source and Effective Date. See, also, section annotations.

Subchapter 4, Regulation for Residential Electric Underground Extensions, was repealed and new Subchapter 4, Extension of Electric Service was adopted as new rules by R.2004 d.462, effective December 20, 2004. See: 36 N.J.R. 276(a), 36 N.J.R. 5928(a).

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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.

Case Notes

Electric utility practiced prudent field management in choosing site for proposed distribution substation. Matter of Appeal of Atlantic City Elec. Co., 93 N.J.A.R.2d (BRC) 75.

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 crossing 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 and 4.

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.

Amended by R.1997 d.99, effective March 3, 1997.

See: 28 N.J.R. 4080(a), 29 N.J.R. 786(b).

Changed N.J.A.C. references.

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.

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 Public Utilities adopts these rules, as well as any modifications or changes that the National Association of Regulatory Utility Commissioners may make thereto, as its modified rules 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. Copies of these rules may be purchased from the National Association of Regulatory Utility Commissioners, 1101 Vermont Avenue, NW, Washington, D.C. 20005.

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.

Amended by R.1997 d.99, effective March 3, 1997.

See: 28 N.J.R. 4080(a), 29 N.J.R. 786(b).

Changed name of Board and added reference to modifications to the rules.

Amended by R.2002 d.314, effective September 16, 2002.

See: 34 N.J.R. 1390(a), 34 N.J.R. 3234(a).

Rewrote (c).

3. Establish a program of painting towers initially and periodically in order to camouflage their appearance as much as possible and to the extent consistent with the need for protection;

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 traveled 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).

Amended by R.2002 d.314, effective September 16, 2002.

See: 34 N.J.R. 1390(a), 34 N.J.R. 3234(a).

In (a)3, inserted "and to the extent consistent with the need for protection" following "possible".

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).

Homeowner failed to prove that electromagnetic field allegedly created by nearby power lines posed health risk. *Karvounis v. Atlantic Electric*, 96 N.J.A.R.2d (BRC) 42.

Public utility, after showing that distribution supply lines are necessary for service, convenience, or welfare of public, need not comply with township's zoning and land use ordinances. In the Matter of the Petition of the Atlantic City Electric Company, 96 N.J.A.R.2d (BRC) 6.

Electric utility did not improperly trim blue spruce tree on property owners' land. *Orlandi v. Jersey Central Power and Light Co.*, 93 N.J.A.R.2d (BRC) 134.

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;

SUBCHAPTER 7. INTERIM ELECTRIC DISTRIBUTION SERVICE RELIABILITY AND QUALITY STANDARDS**14:5-7.1 Purpose and scope**

(a) The rules in this subchapter set forth requirements based on a uniform methodology for measuring reliability

and ensuring quality of the electric distribution service that is being delivered to New Jersey customers by the electric distribution companies (EDCs) operating in New Jersey subject to the Board's regulatory authority.

(b) These rules, which include requirements for data maintenance, records retention and service interruption information, establish standards to measure the reliability of service on an annual and as needed basis under all operating conditions except major events. Major events shall be examined on a case-by-case basis to determine whether or not the EDC's preparation and response were adequate. It is the general obligation of a regulated EDC to provide sufficient resources in order to provide safe, adequate and proper service to its customers. The Board may also consider other factors in determining whether or not an EDC has provided adequate service.

(c) EDCs are encouraged to explore the use of proven state of the art technology and to promote distribution reliability service improvements.

(d) The rules in this subchapter also set forth requirements for the implementation and scope of outage management systems.

14:5-7.2 Definitions

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

"Benchmark" means the 10-year average (1990-1999) of CAIDI and SAIFI or a value determined by the Board.

"Corrective action" means the maintenance, repair, or replacement of EDC or utility system components and structures to allow them to function with the proper degree of reliability.

"Customer Average Interruption Duration Index (CAIDI)" represents the average time in minutes required to restore service to those customers that experienced sustained interruptions during the reporting period. CAIDI is defined as follows:

$$\text{CAIDI} = \frac{\text{sum of sustained customer interruption durations per reporting period}}{\text{total number of sustained customer interruptions per reporting period}}$$

"Distribution circuit" means a three phase set of conductors emanating from a substation circuit breaker serving customers in a defined local distribution area. This includes three phase, two phase and single phase branches.

"EDC" means electric distribution company.

"Electric distribution system" means that portion of an electric system which delivers electric energy from transformation points on the transmission system to points of connection at the customers' premises.

"Interruption" means the loss of electric service to one or more customers. It is the result of one or more component outages, depending on system configuration as well as other events. See "outage" and "major event." The types of interruption include momentary event, sustained and scheduled.

"Interruption, duration" means the period (measured in minutes, hours, or days) from the initiation of an interruption of electric service to a customer until such service has been restored to that customer. An interruption may require step-restoration tracking to provide reliable index calculations.

"Interruption, momentary event" means an interruption of electric service to one or more customers of duration limited to the period required to restore service by an interrupting device. Such switching operations by interrupting devices must be completed in a specified time not to exceed five minutes. This definition includes all reclosing operations which occur within five minutes of the first interruption. For example, if a recloser or breaker operates two, three, or four times and then holds within five minutes, the event shall be considered one momentary event interruption.

"Interruption, scheduled" means an interruption of electric power that results when one or more components are deliberately taken out of service at a selected time, usually for the purposes of preventative maintenance, repair or construction.

1. This interruption derives from transmission and distribution applications and does not apply to generation interruptions.

2. The key test to determine if the loss of electric service should be classified as a scheduled interruption is as follows: If it is possible to defer the interruption when such deferment is desirable, the interruption is a scheduled interruption. Deferring an interruption may be desirable, for example, to prevent overload of facilities or interruption of service to customers. Scheduled interruptions shall not be included in the CAIDI and SAIFI calculations.