

CONSOLIDATED EDISON CO. OF NEW YORK INC.  
4 IRVING PLACE  
NEW YORK, N.Y. 10003

DISTRIBUTION ENGINEERING  
CABLE SYSTEMS

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REVISION 2  
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OPERATION AND MAINTENANCE OF  
CONDUIT SYSTEM, CABLES AND EQUIPMENT  
ON PRIVATE PROPERTY  
LOW-TENSION METERED INSTALLATIONS

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**OPERATION AND MAINTENANCE OF  
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**1.0 PURPOSE**

The procedure covers the requirements for the operation and maintenance of conduit and manhole systems, primary feeder cables, 120-208 volt secondary mains cables, transformers, network protectors, and accessory equipment within the boundaries of private property.

**2.0 APPLICATION**

This procedure applies to all Company organizations involved in providing an interior distribution system beyond the Company's point of termination.

**3.0 DEFINITIONS**

3.1 **Company** - Consolidated Edison Company of New York, Inc.

3.2 **Contractor** - An individual, or group of individuals licensed by the authorities having jurisdiction, retained by the Customer to perform electrical work.

3.3 **Customer** - The operator of the distribution system on private property.

3.4 **Point of Termination** - The point at which the Company terminates its service and the customer's wiring begins.

3.5 **Proof Test** - The application of a specific potential to cables or equipment to determine the serviceable condition of the insulation.

3.6 **Interior Distribution System** - The point at which the customer's wiring begins.

**4.0 CUSTOMER'S AGENT**

The customer shall furnish to the Company a list of names, representatives (contractors), telephone numbers, and hours of availability of persons authorized by the customer in discussions with the Company.

## **5.0 RESPONSIBILITY**

**5.1** Where an interior distribution system is installed beyond the Company's point of termination for electric service (as provided under the Company's rate schedule), "the Company's furnished transformers and associated equipment" will remain the property of the Company.

**5.2** The Company will perform such operation and maintenance of its transformers and associated equipment as, in its judgement, can be performed while the equipment is installed on the customer's premises. No work shall be performed by the customer within the transformer enclosure without notification to the Company, and then only under the supervision of a Company representative.

**5.3** The Company will require access to the transformers and associated equipment for routine inspection and maintenance and in emergency situations. In case of emergencies, immediate access by Company personnel must be made available at all times.

**5.4** The customer shall be responsible for the operation and maintenance of all cable manholes, distribution boxes, splice chambers and ducts and all cables, cable hangers and accessories in them that are beyond the Company's point of termination for electric service.

## **6.0 MAINTENANCE OF MANHOLE AND CONDUIT SYSTEM**

**6.1** Conduits, cable manholes, and splice chambers on interior distribution systems beyond the Company's point of termination should be maintained in a sound condition. Manholes and distribution boxes are to be kept free of rubbish and debris, which might create a fire hazard or cause damage to the cable.

**6.2** The Company shall be responsible to determine and ensure that manholes and transformer vaults are to be kept clean by the customer.

**6.3** The customer shall insure proper ventilation of these manholes and transformer vaults by preventing the clogging of the vault gratings. Also, drain connections or sump pump equipment shall be kept in good operating condition to prevent flooding of vaults containing non-submersible type electrical equipment.

**6.4** The customer shall properly support or protect conduits, which are exposed in the proximity of work being performed in order to prevent damage to the cable.

**6.5 Conduits shall be properly maintained by the Customer to preserve a smooth continuous inner surface which will not cause damage to cable sheaths during cable pulling.**

**7.0 MAINTENANCE OF CABLE SYSTEM**

**7.1 The customer should inspect each manhole and distribution box at intervals to insure that the cables are in satisfactory operating condition. (See Appendix A - Inspection Guide for Cable System.)**

**7.2 Any abnormal conditions found should be repaired promptly by the customer.**

**7.3 The customer shall not undertake any work on either the high voltage or the low voltage cable system without notification to and consultation with the Company.**

**7.3.1 Routine and Emergency work notification shall be given to the Company's Customer Service Control Centers by telephone as follows:**

	ROUTINE WORK * TELEPHONE NUMBER	EMERGENCY TELEPHONE NUMBER
NORTHERN (BRONX & WESTCHESTER)	914 789-6764	914 921-3716
BROOKLYN / QUEENS	718 802-6000	718 802-6000
MAHATTAN	212 338-3391 or 3377	212 338-3352 or 3353
STATEN ISLAND	718 390-6400	718 390-6400

**7.4 The Company will provide a schedule of when a high voltage feeder can be de-energized to permit work to be performed on that feeder. The feeder will be identified and marked at the appropriate time.**

**7.5 Upon completion of the customer's work, a high voltage proof test shall be made at the customer's expense in accordance with Paragraph 10.0.**

**7.6 The customer shall install and maintain in good condition suitable arcproofing coverings on all primary cables in cable manholes or distribution boxes that contain other primary feeders or 120-208 volt secondary mains cables.**

**7.7 The customer shall employ licensed contractors and adhere to all current codes and specifications governing work within the appropriate jurisdiction including but not limited to Company specifications.**

**7.8 The customer shall dispose of any debris, excess, or other materials in an environmentally safe fashion and at their expense.**

## **8.0 CABLE REPLACEMENT**

**8.1 Cables used for replacements of existing cables on both the high and low voltage cable systems must be in accordance with Company approved specifications and the municipal authorities having jurisdiction for the class of service involved. The Company should be consulted when it's contemplated to replace cables with other than like and kind.**

## **9.0 FAULT LOCATION**

**9.1 The Company may make necessary tests on feeders and transformers as may be required to locate faults without notification to the customer.**

**9.2 The Company reserves the right of access to all manholes and distribution boxes, without notification to the customer, to locate faults. To safeguard its system, the Company may cut cables where necessary to clear a fault.**

## **10.0 PROOF TESTING**

**10.1 On high voltage feeders, the customer shall arrange for a high potential proof test upon completion of work in accordance with specification EO-4019, entitled "Testing of A-C Feeders Operating at 2.4 V to 33kV. The proof test shall be made at the customer's expense before the feeder involved is re-energized. The test shall be made at a voltage at least equal to the Company's standard test values in effect at the time of the test. A Company representative shall witness the test.**

**10.2 The Company reserves the right to conduct proof tests at its own expense on any of its feeders, including those portions on the customer's premises, on which repairs or cable replacements have been made.**

**10.3 The Company will not be responsible for any damage to customer-owned equipment due to a service failure, a high potential test failure or to any cause beyond the control of the Company.**

**11.0 MAINTENANCE OF COMPANY-OWNED TRANSFORMERS AND ASSOCIATED EQUIPMENT**

When in the judgement of the Company, it shall become necessary to replace any transformer, network protector or other associated Company-owned equipment within the private property area, the replacement of the equipment including the disconnecting and reconnecting of the cables shall be performed by the customer in accordance with the provisions of the Company's rate schedule.

**12.0 BADGING**

The Company reserves the right to badge each manhole and high voltage feeder with a Company-assigned number for identification purposes. It also reserves the right to change the feeder designation of feeders entering the private property area and may in such event retag the feeder cable in all manholes through which the feeder passes. The customer shall not remove any manhole or feeder number badges installed by the Company. The customer shall report to the Company any cases found where manhole or feeder badges are missing.

**13.0 ATTACHMENTS**

Appendix A - Inspection Guide for Cable System

**Paul McTigue (Signature on File)**  
**Paul McTigue**  
**Manager - Cable Section**  
**Distribution Engineering**

Michael A. Miller / mam

<b><u>REVISION 2:</u></b> Edited, redefine format and checked reporting telephone numbers. Review Date: 5/2003	<b><u>FILE:</u></b> System Operation Manual No. 5
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## APPENDIX A

### INSPECTION GUIDE FOR CABLE SYSTEM

#### 1.0 PURPOSE

The purpose of this appendix is to identify the more prevalent defects which may occur in a cable system. Inspectors noting these or other defects should notify those persons responsible for the maintenance of the system in order that corrective measures may be taken promptly.

#### 2.0 STREET SURFACE

The condition of the street surface over or adjacent to structures of the distribution system may indicate the existence of conditions affecting the soundness of the structures. Large cracks, or broken, raised or sunken areas may be caused by settlement of the earth which may likewise cause breaks or settlement of duct banks, manholes and distribution boxes.

#### 3.0 CONDITION OF UNDERGROUND STRUCTURES

3.1 Upon opening any manhole or distribution box, an inspection and check should be made to detect the presence of noxious gases or fumes.

3.2 Cracks, broken walls or roofs, corroded or missing steps, castings, steam or water leaks, or the existence of rubbish or mud should be noted and reported.

3.3 Blocked ventilator gratings, rusted basket gratings, and missing or broken bolts should be noted and reported.

#### 4.0 CONDITION OF CABLES AND JOINTS

Cable and joint defects are to be noted and reported. These defects may include the following:

- a. Broken lead sheath and exposed copper
- b. Swollen or collapsed joints

- c. Oil or compound leaking from joint, cable, or duct mouths
- d. Hot cables or joints
- e. Corroded or pitted cable
- f. Swollen or soggy rubber insulation on non-leaded cables
- g. Cable wear at hangers and duct mouths
- h. Cable slippage from hangers
- i. Joints rotated due to twisting of cable
- j. Improper racking conditions
- k. Cracked or missing arcproofing
- l. Broken or missing bond wires

#### **5.0 CONDITION OF ACCESSORIES AND DUCTS**

An inspection and check should be made for the following conditions:

- a. Missing, loose or corroded stanchions, rack plates and hangers.
- b. Missing or broken porcelains.
- c. Missing cable joint support.
- d. Loose or corroded hangers on joint regulators and oil leaks on the tanks, fitting and tubing.
- e. Rough duct edges and missing or corroded Fairleaders.