

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC. 4 IRVING PLACE NEW YORK, NY 10003

DISTRIBUTION ENGINEERING NETWORK SYSTEMS SECTION

SPECIFICATION EO- 4035 REVISION 12 OCTOBER, 2006

OPERATION AND MAINTENANCE OF EQUIPMENT ON HIGH TENSION CUSTOMER'S PREMISES

FILE: SYSTEM OPERATION MANUAL NO. 5

FIELD MANUAL NO 22.

REGIONAL ENGINEERING	
NESC REFERENCE ALL SECTIONS	

 Copyright Information
 2005-2006 Consolidated Edison Co. of New York, Inc.

 Paper copies of procedures and instructions are uncontrolled and therefore may be outdated. Please consult
 Page 1/14

 Distribution Engineering Intranet Site Distribution Engineering or http://distribution for the current version prior to use.

TABLE OF CONTENTS

1.0	PURPOSE	3
2.0	APPLICATION	3
3.0	DEFINITIONS	3
4.0	GENERAL	3
5.0	COMMUNICATION WITH THE COMPANY	4
6.0	OPERATION	5
7.0	SCHEDULED WORK	6
8.0	CHANGES TO THE CUSTOMER'S SERVICE	7
9.0	PROTECTION FOR WORK ON HIGH TENSION EQUIPMENT	8
10.0	WORK PERMITS	8
11.0	TESTS ON CUSTOMER PREMISES IN PREPARATION FOR RESTORING EQUIPMENT TO SERVICE	9
12.0	MAINTENANCE OF EQUIPMENT1	0
13.0	CUSTOMER MAINTENANCE SCHEDULE1	1
14.0	MAINTENANCE OF COMPANY-OWNED EQUIPMENT1	3
15.0	REFERENCE SPECIFICATIONS AND DOCUMENTS1	3

Specification	Revision	Rev Date	Effective Date	Copyright Information	Page 2/14
EO – 4035	2	10/2006	10/05/2006	2005-2006 Consolidated Edison Co. of New York, Inc.	
Filing Information		System Operations		Manual No. 5	
Paper copies of proce Engineering Intranet	edures and ins Site <u>Distributio</u>	tructions are un Engineering	uncontrolled and or http://distribut	therefore may be outdated. Please consult Distribution tion, for the current version prior to use.	

OPERATION AND MAINTENANCE OF EQUIPMENT ON HIGH TENSION CUSTOMER'S PREMISES

1.0 PURPOSE

The purpose of this specification is to outline the general operating and maintenance requirements for Customer's high tension cable and equipment connected beyond the point of termination of the Consolidated Edison Company's electric service.

2.0 APPLICATION

All Regions and High Tension Customers.

3.0 **DEFINITIONS**

- **3.1** Customer and Company Throughout this specification, Consolidated Edison Company of New York, Inc. is referred to as the "Company." The owner of the installation as defined in the appropriate high tension DE Specification is referred to as the "Customer."
- **3.2** <u>High Tension Equipment</u> High tension (HT) equipment includes all cables, wires, buses, instrument transformers and other equipment operating at 600 volts or higher.
- **3.3** <u>Company Representatives</u> Company Representatives frequently involved with high tension installations are: the District Operator (D.O.), the Regional Control Center Shift Manager (Shift Manager), the Customer Project Manager (CPM), and Field Operations (F.O.D.).

4.0 GENERAL

4.1 <u>Service Conductor: Underground</u> – The Company's service cable installed in a duct or directly buried, and terminates at the property line or property line manhole where the cable section is spliced to the

Specification	Revision	Rev Date	Effective Date	Copyright Information	Page 3/14		
EO - 4035	2	10/2006	10/05/2006	2005-2006 Consolidated Edison Co. of New York, Inc.			
Filing Information System Operations		itions	Manual No. 5				
Paper copies of procedures and instructions are uncontrolled and therefore may be outdated. Please consult Distribution							
Engineering Intranet Si	te Distribution	Engineering o	r http://distributio	n, for the current version prior to use.			

Customer's cable extending into the premises. Access to the splice box, buried splice or property line manhole shall be provided at all times. In cases where the Company's service cable can be installed in one continuous pull from the street, the Company's service terminates at the pothead cubicle. Where the section of cable terminates at a pothead, the Company's service does not include the pothead.

4.2 <u>Service Conductor: Overhead</u> - Where the service is overhead, the Company's service terminates at the first pole or support structure on the Customer's premises.

<u>Note:</u> Paragraph 4.1 and 4.2 – If field conditions preclude the installation of a suitable property line structure, the Customer shall provide a suitable splice chamber or cubicle for the purpose of splicing between Company and Customer cables.

4.3 <u>Service from a Company Substation Bus</u> - Where the service to a Customer is supplied from a Company substation located adjacent to the Customer's premises, the Company's service terminates with the links in the throat connection to the Customer's bus.

5.0 COMMUNICATION WITH THE COMPANY

- 5.1 <u>Delegation of Authority D.O. and Shift Manager</u> The D.O. shall have the operating jurisdiction for Customers supplied from all underground feeders, and up to and including the first riser pole of overhead feeders. For Customers supplied from overhead feeders, beyond the first riser, including all the overhead portion of the feeder, the Regional Control Center Shift Manager is the Operating Authority
- 5.2 <u>Emergency Telephone Communication</u> Communication regarding <u>EMERGENCY</u> operation of the Company's feeders and the customermaintained equipment energized directly from these feeders shall be between the D.O. or the Shift Manager and the customer. The customer shall be advised as to whom they shall call in an emergency. The telephone numbers of the respective D.O and Shift Manager are as follows:

Specification	Revision	Rev Date	Effective Date	Copyright Information	Page 4/14		
EO – 4035	2	10/2006	10/05/2006	2005-2006 Consolidated Edison Co. of New York, Inc.			
Filing Information System Operations		Manual No. 5					
Paper copies of procedures and instructions are uncontrolled and therefore may be outdated. Please consult Distribution							
Engineering Intranet Site Distribution Engineering or http://distribution, for the current version prior to use.							

	DISTRICT OPERATOR EMERGENCY TELEPHONE SERVICE	SHIFT MANAGER EMERGENCY TELEPHONE SERVICE
BROOKLYN	212-580-6749	718-802-5178
QUEENS	212-580-6749	718-802-5178
MANHATTAN	212-580-6750	212-780-3743
The BRONX	212-580-6750	914-925-6221
STATEN ISLAND	212-580-6753	718-390-6206
WESTCHESTER	212-580-6753	914-925-6221

- **5.3** <u>Non Emergency Communication</u> For non-emergency communications the customer shall contact the Customer Project Manager (Energy Services Department).
- 5.4 <u>Access to High Tension Equipment</u> Company employees bearing Company identification cards and authorized representatives of the Customer shall be allowed access to vaults, rooms, manholes, or enclosures containing high tension equipment. The Customer's high tension service equipment shall be accessible to Company employees AT ALL TIMES. The Customer is required to furnish the Company's representative (CPM) with an updated telephone listing of their person(s) responsible for access.

6.0 **OPERATION**

- 6.1 <u>Normal Switching Operation</u> Normal switching operations for Customer work directly associated with Company feeders shall be arranged by the Customer through the CPM. The Customer's request will be forwarded to the appropriate department within the Company for action. The Energy Services Department shall provide the Customer with a contact telephone number.
- 6.2 <u>Company Feeder Grounding</u> Unless agreed to by the Company in writing, only Company employees shall ground Company feeders.

Specification	Revision	Rev Date	Effective Date	Copyright Information	Page 5/14
EO – 4035	2	10/2006	10/05/2006	2005-2006 Consolidated Edison Co. of New York, Inc.	
Filing Information System Operations		Manual No. 5			
Paper copies of procee	lures and inst	ructions are und	controlled and the	erefore may be outdated. Please consult Distribution	
Engineering Intranet Si	te Distribution	Engineering o	r <u>http://distributio</u>	n, for the current version prior to use.	

Whenever the customer requires the operation of a grounding device to ground a Company High Tension feeder or its associated equipment, the Customer shall contact the CPM who will arrange for the application of protective grounds. At customer locations utilizing a Ground and Test device (G&T) for this function, customers shall arrange to maneuver the G&T device into and out of the cubicle and the Company employee will apply or remove the ground. The Company shall not be liable for damages to the Customer's equipment during the grounding of Company feeders.

- **6.3** <u>Emergency Operation</u> The Customer shall promptly notify the D.O. or the Shift Manager of any trouble endangering the service, or of any automatic operation of the incoming feeder circuit breaker or other feeder-interrupting device. Equipment on the Customer's premises, which has been de-energized via automatic operation of an interrupting device, shall not be re-energized without first determining the cause of the operation and verifying that the defective equipment has been isolated or repaired. Permission to re-energize equipment that caused an interrupting device operation shall be obtained from the D.O. or the Shift Manager having jurisdiction.
- 6.4 <u>Relay Targets and Operating Logs</u> The Customer is required to maintain a log of all circuit breaker operations (manual or automatic), periodic maintenance performed on the Customer's equipment, and relay targets resulting from automatic circuit breaker operations. In the case of automatic operations, operating data shall include the exact time of operation, breaker positions found (open or closed), relay types, nameplates, relay targets, and the condition of the dc control power used for tripping or closing of the circuit breakers. The logbook documenting all previous operations shall be available for inspection and copying by the Company representative upon request.
- 6.5 <u>Switching Service Interrupted</u> If service from the Company supply is interrupted, **no switching shall be done.** The Customer shall call the District Operator or the Shift Manager having jurisdiction who will arrange for the necessary switching.

7.0 SCHEDULED WORK

7.1 <u>Customer Requests</u> - Company feeders are removed from service for normal work on a restricted schedule. If the Customer requires an outage of a Company feeder or the service de-energized for routine work, the

Specification	Revision	Rev Date	Effective Date	Copyright Information	Page 6/14		
EO – 4035	2	10/2006	10/05/2006	2005-2006 Consolidated Edison Co. of New York, Inc.			
Filing Information System Operations		Manual No. 5					
Paper copies of procedures and instructions are uncontrolled and therefore may be outdated. Please consult Distribution Engineering Intranet Site <u>Distribution Engineering</u> or <u>http://distribution</u> , for the current version prior to use.							

Customer shall notify the CPM thirty (30) days in advance. The Customer will be advised by the CPM if the date and time are satisfactory and, if not, an alternate date and time will be suggested. The schedule will be modified only by mutual agreement of the concerned parties. The CPM will submit a "High Tension and Intermediate work Authorization Request" (work permit) to the D.O. or the Shift Manager having jurisdiction detailing the proposed scope of work and suggested electrical protection to facilitate the Customer's work needs. Upon approval of the scheduled work, the CPM will notify the Customer. In an emergency, the District Operator or the Shift Manager may cancel the scheduled outage and will notify the Customer.

- **7.2** <u>Company Feeder Work</u> When planned feeder work will interrupt the supply to a Customer, the D.O. or the Shift Manager having jurisdiction will notify the customer eight (8) hours prior to the outage The Customer is required to have the necessary personnel available in order to operate any equipment to effect the outage. In an emergency however, the D.O. or the Shift Manager may <u>de-energize</u> the service without notice to the Customer.
- **7.3** <u>Company High Potential Tests</u> The Company, from time to time, applies a high potential proof test to check the condition of its feeders. That portion of the service equipment on the supply side of the first disconnecting device on the Customer's premises will normally be included in these high-potential proof tests.
- **7.4** <u>Service or High Potential Proof Test Failure</u> The Company will not be responsible for any damage to Customer-owned or maintained equipment due to a service failure or to a high-potential proof test failure.

8.0 CHANGES TO THE CUSTOMER'S SERVICE

- 8.1 <u>Proposed Changes</u> If any changes are proposed in the Customer's high tension connection, in the control devices or circuits, or in the conduit system for the high tension service cables, the customer shall submit details of the proposed changes to the Company for approval prior to ordering equipment or starting work on the project.
- 8.2 <u>Load Changes</u> If the Customer proposes changes in the magnitude or characteristic of the connected load, the Customer shall submit to the Company, in writing, a letter describing the load change, and accompanying documentation including complete technical data. The

Specification	Revision	Rev Date	Effective Date	Copyright Information	Page 7/14			
EO – 4035	2	10/2006	10/05/2006	2005-2006 Consolidated Edison Co. of New York, Inc.				
Filing Information System Operations		Manual No. 5						
Paper copies of procee	Paper copies of procedures and instructions are uncontrolled and therefore may be outdated. Please consult Distribution							
Engineering Intranet S	ite Distributior	Engineering c	or http://distribution	on, for the current version prior to use.				

Customer is not permitted to change the load or its characteristics without Company approval.

8.3 <u>Short Circuit Currents and Relay/Fuse Changes</u> - The Customer short circuit current information will be determined by the Customer based on feeder impedance data given by the Company, and the Customer will verify his findings with the Company. Relay time-current and fuse coordination studies shall be submitted to the Company for approval prior to the Customer changing settings on relays or changing fuse sizes.

9.0 PROTECTION FOR WORK ON HIGH TENSION EQUIPMENT

- **9.1** <u>Protection</u> To obtain suitable protection for isolation and grounding of high tension electric equipment, the Company's "General Instructions Governing Work On System Electrical Equipment" rules shall apply. If there are questions concerning suitable work protection, the Customer shall contact the Company representative for guidance.
- **9.2** Short-Circuiting and Grounding Conductors being prepared for work shall be isolated from all sources of electrical supply. The Customer shall test conductors and equipment to insure they are dead before grounding. Throughout the working period, the conductors and equipment shall then be short-circuited and grounded. If there is any question of safety in obtaining circuit de-energization and making the ground connection, the Customer shall request the Company Representative to have the circuit de-energized. At all times, it shall be the Customer's responsibility to provide protection for its workers against accidental contact with energized equipment.

10.0 WORK PERMITS

10.1 H.T. and INTERMEDIATE WORK AUTHORIZATIONS (work permits) shall be issued by the D.O. or the Shift Manager having jurisdiction. The Work Permit will be prepared by the authorized CPM and will clearly define the scope of work, and all items defined in the General Instructions Governing Work on System Electrical Equipment. The D.O. of Shift Manager having jurisdiction will supervise the various Company representatives in making the necessary switching moves to prepare feeder for work. Permission to proceed with the work at the Customer's location is given to the authorized CPM only after the equipment is properly protected. The D.O. will notify the authorized CPM that the work

Specification	Revision	Rev Date	Effective Date	Copyright Information	Page 8/14
EO – 4035	2	10/2006	10/05/2006	2005-2006 Consolidated Edison Co. of New York, Inc.	
Filing Information System Operations		Manual No. 5			
Paper copies of proce	edures and ins	structions are u	uncontrolled and	therefore may be outdated. Please consult Distribution	
Engineering Intranet	Site Distributio	n Engineering	or http://distribut	ion, for the current version prior to use.	

as detailed in the work permit may proceed.

- **10.2** <u>Project Scope</u> The Customer shall limit the work to the scope outlined in the work permit AND NO OTHER WORK IS PERMITTED. If it becomes necessary to enlarge the scope of work originally planned for the outage, the original work permit shall be turned in and a new Work Permit will be required.
- **10.3** Work Completion Permission to do work terminates and the work permit is deemed withdrawn when the authorized CPM notifies the D.O. or the Shift Manager that the work has been completed. After permission to work has been terminated the feeder is ready to be returned to service and the high tension equipment is considered energized. The authorized CPM will also warn the workers that the equipment must now be considered to be alive.
- **10.4** <u>Visual Inspection</u> Before withdrawing the Work Permit, the CPM shall make a visual inspection of the completed work to determine if the work has been satisfactorily completed and there is no apparent possibility of failure or damage to equipment, or injury to workers when the service is energized.
- **10.5** <u>Required Testing</u> Before withdrawing the work permit, the authorized CPM shall verify that any tests required as a condition for re-energizing the service are satisfactorily completed.
- **10.6** Customer Responsibility After the Work Permit has been withdrawn, it shall be the Customer's responsibility to prohibit any additional work on the equipment even though the Company service may not be restored immediately at the Customer's premises.
- **10.7** <u>Emergency Re-energization</u> If an emergency develops after the Company feeder has been removed from service for Customer work, the CPM will notify the Customer and request his cooperation in restoring the equipment to a serviceable condition as soon as possible.

11.0 <u>TESTS ON CUSTOMER PREMISES IN PREPARATION FOR RESTORING</u> <u>EQUIPMENT TO SERVICE</u>

11.1 <u>Phasing Test</u> - Where wire, cable or connection work has been done on the Customer's premises and it is possible to have interchanged phases during the work, a phase relation check and a phase rotation check shall

Specification	Revision	Rev Date	Effective Date	Copyright Information	Page 9/14		
EO - 4035	2	10/2006	10/05/2006	2005-2006 Consolidated Edison Co. of New York, Inc.			
Filing Information System Operations		Manual No. 5					
Paper copies of procedures and instructions are uncontrolled and therefore may be outdated. Please consult Distribution							
Engineering Intranet Site Distribution Engineering or http://distribution. for the current version prior to use.							

be made by the Customer to determine that the original phase rotation exists. Where work on or off the premises has involved a Company feeder at an installation supplied by two or more Company feeders, a phase relation check will be made by the Company forces.

- High Potential Proof Testing The Customer, at his expense, shall 11.2 arrange to have a qualified maintenance organization perform a high potential proof test after the completion of any work which would disturb the insulation on any high tension equipment or cable, which is directly connected to the Company's supply feeder or is energized by closing the line circuit breaker or circuit closing device. The high potential proof test shall be made either at a voltage and time at least equal to the Company's standard test value in effect at the time of test (see the latest revisions of Company specifications EO-4019 and EO-2022) or in accordance with the manufacturer's recommended testing criteria. Should the Customer decide to follow the Company's high potential testing criteria, the CPM assigned to the job will supply the test values to be used and arrange that the test is witnessed by the authorized CPM. If requested by the Customer, the Company will perform the test at the rates stipulated in the Company's Schedule for Electricity Service on file with the Public Service Commission. Should the customer decide to test in accordance with the manufacturer's testing criteria then, the Customer shall submit that testing criteria to the Company for acceptance prior to performing the tests. The testing will be arranged so that it can be witnessed by the authorized CPM.
- **11.3** Purpose of High Potential Proof Testing High Potential Proof Testing is performed to identify equipment defects that could result in energizing faulty equipment from a high-energy source, which may cause extensive damage and result in a prolonged outage. The Company system and the Customer's equipment is protected against disturbances due to failures of equipment in high tension vaults, rooms and enclosures.
- **11.4** Other Customer Equipment In addition to the requirement for high potential proof testing following work that disturbs insulation as described in paragraph 11.2, the Company recommends that the Customer arrange for a high potential proof test after work is done on any high potential equipment that will be energized by the Customer closing a circuit breaker or circuit closing device beyond the main line circuit breaker or circuit closing device.

12.0 MAINTENANCE OF EQUIPMENT

Specification	Revision	Rev Date	Effective Date	Copyright Information	Page 10/14		
EO – 4035	2	10/2006	10/05/2006	2005-2006 Consolidated Edison Co. of New York, Inc.			
Filing Information System Operations		Manual No. 5					
Paper copies of procedures and instructions are uncontrolled and therefore may be outdated. Please consult Distribution Engineering Intranet Site <u>Distribution Engineering</u> or <u>http://distribution</u> , for the current version prior to use.							

- **12.1** <u>Customer Maintenance</u> With the exception of the meter and metering devices, the Customer is responsible for the maintenance of all service equipment, from the point of service termination as defined in paragraph 4.0, regardless of whether the original installation was made by the Customer or the Company. This includes: conduit, cables, overhead lines, HT service interrupting equipment and switchgear, associated relaying and control power equipment. The Customer shall be responsible for performing all routine maintenance and inspections programs and maintaining a record of such maintenance and inspections at the location for Company inspection and review.
- **12.2** <u>Customer Visual Inspection</u> The Customer shall make a visual inspection of all equipment yearly to identify conditions which, if not corrected, may result in a failure of equipment. The equipment manufacturer's maintenance procedures and recommendations shall be followed. All High Tension Customers are required as a minimum to follow the maintenance schedule detailed in paragraphs 13.1 13.10.
- 12.3 Customer Site Requirements - The Customer is responsible for the maintenance of the vaults, rooms, pads or enclosures containing high tension apparatus. They shall be clean and clear of rubbish and foreign equipment. Access doors and passageways to the high tension vaults shall be free of ice and snow, and shall be unobstructed. Vault doors and gates shall be kept locked and shall be provided with a "Danger High Voltage" sign in accordance to code requirements. Drains shall be kept clear and in a serviceable condition. Cable manholes shall be kept clear and free of rubbish. Adequate ventilation shall be provided to high tension equipment at all times. The ventilation rooms of outdoor equipment shall have fans and vent louvers that are thermostatically controlled. Louvers or other ventilated openings shall not be obstructed. The HT location shall be equipped with a telephone, fire extinguisher and fire blanket. An up-to-date laminated one line diagram of the electrical installation and a physical map indicating the location of splice chambers and property line manholes shall be posted on the vault wall.

13.0 CUSTOMER MAINTENANCE SCHEDULE

13.1 <u>High Tension Circuit Breakers</u> - To insure that the circuit breakers are in proper operating condition, they shall be inspected prior to the end of the initial warranty period, then inspected and overhauled on regular intervals as per the manufacturer's literature. At a minimum, the Customer shall

Specification	Revision	Rev Date	Effective Date	Copyright Information	Page 11/14	
EO – 4035	2	10/2006	10/05/2006	2005-2006 Consolidated Edison Co. of New York, Inc.		
Filing Information		System Operations		Manual No. 5		
Paper copies of proced	ures and insti	ructions are une	controlled and th	erefore may be outdated. Please consult Distribution		
Engineering Intranet Site Distribution Engineering or http://distribution, for the current version prior to use.						

inspect and overhaul, their circuit breakers for every 200 operations, or every three years for vacuum circuit breakers, every five years for air magnetic, gas or oil circuit breakers; the vacuum or gas bottles on the switchgear shall be tested as per the manufacturer's recommendations. The inspection intervals shall be reduced to every two years for installations where the switchgear is exposed to contaminants. <u>Ground</u> and Test Devices and ground switches shall be inspected annually.

- **13.2** <u>Breaker Inspection After Operation</u> An external inspection of the circuit breaker shall be made after each automatic operation. If there is any external evidence of damage, an internal inspection of the mechanism and test of the interrupting medium shall be made.
- **13.3** <u>Relays and Associated Equipment</u> The Customer shall submit all proposed relay and relay setting changes to the CPM for Company approval prior to making any changes.
- **13.4** <u>Relays, Trip Coils and Control Wiring</u> The Customer shall perform relay testing every 48 months (or at shorter intervals if recommended by the equipment manufacturer). The relay testing shall include relay tests at pickup and at three other points, breaker trip checks, breaker trip coil continuity checks, A.C. and D.C. circuit continuity and insulation impedances of the protective circuits including the current and potential transformers. Copies of the certified test reports shall be maintained on site for inspection by Company forces. The inspection records of the D.C. control power for the circuit breakers, reference single line diagram, relay protection diagrams, shall augment the certified test reports. The testing shall be performed by qualified personnel and the Customer shall notify the Company seven business days prior to the date scheduled for the testing to give the Company the opportunity to witness the testing.
- **13.5** <u>Wet Cell Batteries and Chargers</u> Control batteries and battery chargers voltage controls shall be inspected every 12 weeks. Specific gravity and acid sludging of the batteries shall be checked against manufacturers' recommendations.
- **13.6** <u>Dry Cell Batteries</u> Dry cell batteries supplying tripping circuits shall be replaced every 24 months. The inspection date shall be marked on the batteries.
- **13.7** <u>Power Transformers</u> Power transformers shall be inspected one year after initial energization and then every two years. Cracked bushings and oil leaks shall be promptly repaired.

Specification	Revision	Rev Date	Effective Date	Copyright Information	Page 12/14	
EO – 4035	2	10/2006	10/05/2006	2005-2006 Consolidated Edison Co. of New York, Inc.		
Filing Information		System Operations		Manual No. 5		
Paper copies of procedures and instructions are uncontrolled and therefore may be outdated. Please consult Distribution						
Engineering Intranet Site Distribution Engineering or http://distribution, for the current version prior to use.						

- **13.8** <u>Instrument Transformers</u> Instrument transformers shall be checked every five years.
- **13.9** <u>Potheads and Interlocks</u> Potheads and interlocks shall be checked annually.
- 13.10 <u>Oil Tests</u> Because insulating oil breaks down in a predictable fashion and to enable a comparison between normal and abnormal rates of deterioration, periodic testing of power transformer and circuit breaker oil shall be performed during the normal inspection cycle; however, power transformer insulating oil shall be tested immediately if the power transformer has been operating above 90 degrees C. The Customer shall take any necessary corrective action warranted by the test results. Oil shall be tested for dielectric strength, color, sludge content and acidity in accordance with the latest issue of ASTM "Standard Methods of Testing Electrical Insulating Oils, ASTM Designation D-877." The equipment manufacturer shall also be consulted when identifying acceptable parameters as well as corrective measures.

14.0 MAINTENANCE OF COMPANY-OWNED EQUIPMENT

14.1 <u>Metering Transformers</u> - Current and potential transformers used for Company metering or metering devices will be maintained by the Company. The Company may require a complete outage to maintain this equipment. The Customer shall promptly notify the CPM of any indications of damage to the Company's equipment.

NOTE: Customer equipment shall not be located in revenue metering compartments and associated instrument transformer cubicles.

15.0 REFERENCE SPECIFICATIONS AND DOCUMENTS

Specification <u>EO-401 9</u>, "Proof Testing and Ammeter Clear Testing of Feeders and Feeder Mains", Manual #5.

Specification <u>EO-2022</u>, "General Specification for High Tension Service", Manual #4.

Specification <u>EI-1000</u>, "Generating Station-Substation Frequency/Maintenance/ Inspection of Electrical Equipment."

Specification	Revision	Rev Date	Effective Date	Copyright Information	Page 13/14	
EO – 4035	2	10/2006	10/05/2006	2005-2006 Consolidated Edison Co. of New York, Inc.		
Filing Information		System Operations		Manual No. 5		
Paper copies of procedures and instructions are uncontrolled and therefore may be outdated. Please consult Distribution						
Engineering Intranet Site Distribution Engineering or http://distribution, for the current version prior to use.						

C.S.P. # 5-2-4, "ELECTRIC OPERATION-DISTRIBUTION SERVICES: Delegation of Authority by System Operation to the Regional Control Center."

ASTM D-877 – Methods of Testing Electrical Insulating Oils.

General Instructions Governing Work on System Electrical Equipment.

Elie A. Chebli (Signature on File) Department Manager Distribution Engineering Electrical Engineering Department

D. Sammon

Revision 12:	File:
Changed Sections	
2(All), 3(All), 4.1, 5(All), 6(All), 7.1,7.2,	System Operation
8.1, 8.3, 9.2,1 0(All),1 1(All),1 2(All)	Manual No. 5
13.10,14.1	
Next Review Date: 4/2009	

Specification	Revision	Rev Date	Effective Date	Copyright Information	Page 14/14
EO - 4035	2	10/2006	10/05/2006	2005-2006 Consolidated Edison Co. of New York, Inc.	
Filing Information		System Operations		Manual No. 5	
Paper copies of proce	edures and ins	structions are u	incontrolled and	therefore may be outdated. Please consult Distribution	
Engineering Intranet	Site Distributio	on Engineering	or http://distribut	tion, for the current version prior to use.	