

APPLICATION

NYU Langone

PURPOSE

- To protect employees, patients, visitors, and contractor personnel from electrical hazards.
- To minimize the possibility of electrical shock, electrocution, or fire from the use of inadequate current-bearing wiring.
- To comply with the following:
 - National Fire Protection Association (NFPA) *National Electrical Code (NEC)*, known as NFPA 70
 - NFPA 70E *Standard for Electrical Safety in the Workplace*
 - NFPA 101 *Life Safety Code*
 - NFPA 99 *Health Care Facilities Code*
 - New York City *Electrical Code*
 - Joint Commission standards
- To provide a written plan of action for personnel to follow in the event of an accident where a person has received an electric shock.

POLICY AND GENERAL INFORMATION

1.0 Application

NYU Langone includes NYU Langone Health System (the System), NYU Hospitals Center (including the NYU Lutheran and HJD campuses), NYU School of Medicine, NYU Lutheran Family Health Centers, and all entities that are controlled by the System.

This policy applies to:

- All indoor and outdoor areas of all NYU Langone owned and leased facilities.
- All employees, contractors and consultants of NYU Langone

The primary departments and divisions impacted by the program are:

- Facilities Operations, HJD Facilities Engineering, Lutheran Facilities (collectively **Facilities**)

- Real Estate
- All contractors and subcontractors.

2.0 Scope

This policy covers:

- the design, installation, and maintenance of electrical wiring and wiring components, including temporary and permanent wiring, pull boxes, junction boxes, fittings, switch boards, panel boards, switches, conductors, light sockets, and flexible cords and cables in all NYU Langone facilities
- proper usage of extension cords and relocatable power taps (RPTs), or power strips
- emergency procedure for electric shock
- procedures for use of electrical equipment

3.0 Responsibilities

3.1 **Environmental Health and Safety (EH&S)** is responsible for:

- developing the policy and updating it as needed
- conducting semi-annual quality assurance (QA) inspections for electrical hazards and distributing summary reports

3.2 **Clinical Engineering** is responsible for:

- periodic maintenance of RPTs
- purchase of RPTs
- coordinating the power requirements of new equipment with Facilities and/or Real Estate departments

3.3 **Departments that coordinate work involving electrical wiring and wiring components and/or installation and use of equipment** are responsible for compliance with the policy. Their responsibilities include:

- ensuring that every project manager is trained on and familiar with the requirements of this policy
- including the requirements of this policy in bid documents

- ensuring that contractors are appropriately trained and informed about the policy
- ensuring that the policy is implemented and all requirements are followed
- informing Facilities or Real Estate (offsite locations) of installation of new equipment
- arranging for the installation of electrical outlets or circuits for new equipment
- ensuring proper operation and maintenance of equipment, including the retaining of the manufacturer or authorized agent to perform required maintenance and repairs

3.4 **Project managers** are responsible for implementing the policy on their projects. Their responsibilities include, but are not limited to:

- ensuring that work involving electrical wiring and wiring components is filed, inspected, and closed out with the NYC Department of Buildings
- ensuring that contractors and employees install and maintain wiring and wiring components in accordance with this policy
- conducting (or coordinating) daily inspections during the project duration and following up on identified issues
- coordinating close-out inspections by licensed electricians from Facilities
- ensuring that contractors correct the identified deficiencies, and withholding final payment until every deficiency is corrected

3.5 **Employees that use electrical equipment** are responsible for:

- using equipment in accordance with manufacturers' instructions and this policy
- contacting Facilities or Real Estate (offsite locations), when issues are identified or if additional outlets and/or circuits are needed

4.0 **Electrical wiring and wiring components**

4.1 All employees and contractor personnel who engage in work that involves electrical wiring or wiring components shall:

- install and maintain the wiring and components in accordance with the current adopted CMS/Joint Commission/FGI editions of the *NEC* and the New York City *Electrical Code*

- perform work above 50 volts only under the supervision of a New York City licensed electrician
 - perform work on live systems in excess of 50 volts in accordance with the requirements set forth in the NFPA 70E *Standard for Electrical Safety in the Workplace*
- 4.2 Any contractor failing to conform to this policy shall be prohibited from working at NYU Langone.
- 4.3 Electrical equipment to be employed outdoors or otherwise exposed to water, liquids or other hazards shall be protected within the proper National Electrical Manufacturers Association (NEMA) rated enclosure.
- 4.4 Live electrical wiring shall not be exposed. All electrical wiring shall be protected against chafing.
- 4.5 Temporary wiring shall be elevated off the ground in accordance with OSHA standard 29 CFR 1926, Subpart K.
- 4.6 Electrical panels and rooms shall be kept locked. Electrical panels and junction boxes shall be covered with an appropriate manufactured cover and trim when not being serviced. Electrical panels within locked electrical rooms are not required to be locked, but should be closed and latched
- 4.7 Contractors shall not use NYU Langone outlets to power tools or equipment unless specifically authorized by Facilities or building management. Where use of a NYU Langone outlet is authorized, a ground fault circuit interrupter (GFCI) device must be in use between the outlet and the tool or equipment.
- 4.8 Prior to performing work in a NYU Langone building, the Project Manager shall arrange for Facilities or building management to shut down electrical power in the construction space utilizing the NYU Langone Pre-Demolition Validation permit process. Facilities or building management shall tie in the contractor's temporary lighting and power system. It shall be maintained under an assured equipment grounding conductor program in accordance with OSHA 1926.404(b)(1)(iii).
- 4.9 Lighting shall comply with NYU Langone Safety Policy No. 122, Fire Prevention.

5.0 Close-out inspection

- 5.1 Upon completion of a construction/renovation project, the project manager shall coordinate an inspection by the licensed electrician who filed the application with the NYC Department of Buildings.
- 5.2 The electrician shall inspect all wiring and wiring components for code-compliance and shall inform the project manager of all deficiencies.
- 5.3 The project manager shall notify the Facilities when deficiencies have been corrected.
- 5.4 As a rule, a licensed electrician from Facilities shall re-inspect the project to confirm that electrical deficiencies have been corrected.

6.0 Electrical extension cords and RPTs

- 6.1 Electrical extension cords
 - Electrical extension cords are prohibited in all patient care areas. Exceptions must be approved by the Environment of Care (EOC) Committee, except in emergencies as summarized in 6.3.
 - Extension cords are permitted in non-patient care areas for temporary use only and must be used in accordance with NYC Electrical Code, which requires that extension cords are:
 - not used as a substitute for the fixed wiring of a structure
 - not run through holes in walls, structural ceilings, suspended ceilings, dropped ceilings, or floors
 - not run through doorways, windows or similar openings
 - Extension cords used in wet areas must be GFCI protected. These extension cords must be specially ordered by the department that needs them. A limited number are available in the Facilities Department stockroom and the electrical shop.

6.2 Relocatable Power Taps (RPTs)

- RPTs shall only be used in anesthetizing locations if they are permanently attached to the equipment.
 - Clamp-mounted RPTs are not permanent and shall be inventoried by Clinical Engineering. If found, clamp-mounted RPTs shall be replaced by Clinical Engineering, Facilities Engineering, or IT.
- NYUHC elected the use of a CMS categorical waiver that allows the use of power strips and RPTs for electronic medical equipment in all patient care rooms provided that the facility complies with all applicable 2012 NFPA 99, 1999 NFPA 99, and 2000 Life Safety Code requirements.
- RPTs may be used for non-patient care equipment such as computers/monitors/printers, and in areas such as waiting rooms, offices, nurse stations, support areas, corridors, etc.
- If RPTs are used, they must:
 - be used for surge suppression; not used as extension cords
 - be hospital grade and UL listed with ground fault and over-current protection
 - patient care: UL 1363A or UL 60601-1
 - non-patient care: UL 1363
 - never be “daisy-chained” (2 or more RPTs connected in series)
 - be prevented from becoming tripping hazards
 - be appropriate for the number and types of devices used (e.g., one plug per outlet)
 - should be installed in an electrical outlet with no other devices plugged into outlets on the same circuit. If in doubt, an electrician should be contacted to specify the outlet that may be used.
 - never exceed 75% device capacity load
 - be purchased through Clinical Engineering or Facilities Operations

6.3 Use in emergency

- Extension cords and RPTs may be used during an emergency to prevent the loss of life or property without prior approval from the EOC committee.
- Designated extension cords and RPTs, located at the nurse's station on each patient floor, may be used during loss of electrical power (see Safety Policy 117, Emergency Power).
- Extension cords and RPTs approved for use or used in an emergency must be either
 - Underwriters Laboratories (UL) listed, double insulated, with grounded cords, or
 - manufactured by the staff electricians, under direction of the Manager of Electrical Systems

7.0 **Procedures for use of equipment**

- 7.1 All equipment shall be visually examined by the user prior to use to ensure there are no obvious defects or damage. If there is any defect, damage or question by the user, the equipment must NOT be used. The manufacturer, contractor or staff electricians shall be contacted.
- 7.2 Electrical cords must not be frayed or damaged in any way.
- 7.3 All plugs must be grounded-type plugs; three-prong to two-prong adapters are not permitted.
- 7.4 Ungrounded equipment must be manufactured with non-metallic casing and be UL listed. All ungrounded equipment must have double insulated wire.
- 7.5 Equipment with IEC listings only are not permitted unless approved by the licensed electricians from Facilities.
- 7.6 If a circuit breaker trips upon activation of the equipment, the circuit breaker or ground fault (if a GFIC outlet) shall NOT be reset. A staff electrician must be called immediately.

8.0 Performance monitoring

EH&S shall conduct semi-annual QA inspections for electrical deficiencies in conjunction with QA inspections for penetrations.

9.0 Emergency procedures for electrical shock

- 9.1 If someone appears to be receiving electrical shock and is still in contact with the current, do NOT touch the person with your bare hands.
- 9.2 Shut off the current if possible. Stay away from high-voltage wires until the power is turned off.
- 9.3 If shutting off the current is not possible, use an insulator to cautiously remove contact from the victim while staying as far away as possible. An insulator is any dry, non-conducting object, such as a heavy rubber hose or a hand inside a glass beaker. Push the victim or current source aside to remove contact from the victim. A dry towel will not suffice.
- 9.4 If someone appears to have been a victim of electrical shock, do not move the person unless they are in immediate danger.
- 9.5 Dial the emergency phone number for your location:
 - On Cisco phones: 33-911
 - Otherwise: 212-263-3911 (on the superblock) or 911 (all other locations)

Related policies:

- 120: Construction Contractor Safety Requirements
- 122: Fire Prevention
- 145: Interim Life Safety Measures
- 156: Installation & Maintenance of Dispensers for Alcohol-based Hand Sanitizer
- 203: Electrical Equipment – Privately Owned
- 207: Portable Space Heaters

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Replaces	08/2014
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Summary of Revisions

Revision date	Section	Changes
March 2017	Application	Changes NYULMC to NYU Langone
	1.0	Defines NYU Langone Adds Lutheran Facilities
	3.2	Adds responsibilities for Clinical Engineering
	4.7 and 4.8	Clarifies requirements for contractors
	6.2	Adds information for RPTs
	Review by	Adds review by Lutheran Safety Officer, HJD, Lutheran, and Lutheran Family Health Centers EOC Committees
	Summary of Revisions	Adds Summary of Revisions