

APPLICATION

NYU Langone Health

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 local electrical codes, Center for Medicare and Medicaid Services (CMS) and Joint Commission (TJC) requirements, and the following consensus standards:

- National Fire Protection Association (NFPA) 70, *National Electrical Code (NEC)*
- NFPA 70E, *Standard for Electrical Safety in the Workplace*
- NFPA 101, *Life Safety Code*
- NFPA 99, *Health Care Facilities Code*
- *National Electrical Safety Code (NESCC)*

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 Health (NYULH) refers to the NYU Langone Health System, NYU Langone Hospitals, NYU School of Medicine, NYU Long Island School of Medicine, the Family Health Centers at NYU Langone, and all entities controlled by any of them.

This policy applies to:

- All NYULH owned and leased facilities.
- All employees, contractors, and consultants of NYULH.

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.

- The use of extension cords and relocatable power taps (RPTs), or power strips.
- The use of electrical equipment.
- Emergency procedure for electric shock.

3.0 **Responsibilities**

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

- developing the policy and updating it as needed
- providing technical assistance

3.2 **Clinical Engineering** and the **NYU Winthrop Hospital (NYUWH) Electrical Department** are responsible for:

- purchasing RPTs
- developing and providing training for clinical staff who use RPTs, on RPT capacity and proper use

Clinical Engineering and **NYUWH BioMed** are responsible for:

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

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 the policy is implemented and all requirements are followed, including for RPTs
- informing Facilities or Real Estate, as applicable, 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 local Department of Buildings
 - ensuring that contractors are appropriately trained and informed about the policy
 - 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 identified deficiencies, and withholding final payment until every deficiency is corrected

- 3.5 **Clinical staff who use RPTs** are responsible for:
- completing RPT training (e.g., see Appendix A)
 - ensuring proper use of RPTs within patient care areas

RPTs are approved for use for the following areas/services: Operating Rooms, Procedural Areas, Pediatrics, Emergency Department, Cardiology, Medicine, Neurology, and Surgery.

- 3.6 **Employees who use electrical equipment** are responsible for:
- following recognized electrical safety practices (e.g., see Sections 6 - 9) when using equipment
 - contacting Facilities or Real Estate, as applicable, 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 local electrical code, and applicable CMS and TJC requirements
 - perform work above 50 volts only under the supervision of a qualified electrician (e.g., licensed by the local jurisdiction)

- 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 NYULH.
 - 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.
 - 4.5 All electrical wiring shall be protected against chafing.
 - 4.6 Temporary wiring shall be elevated off the ground in accordance with OSHA standard 29 CFR 1926, Subpart K.
 - 4.7 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
 - 4.8 Contractors shall not use NYULH outlets to power tools or equipment unless specifically authorized by Facilities, Real Estate, or building management. Where use of a NYULH outlet is authorized, a ground fault circuit interrupter (GFCI) device must be in use between the outlet and the tool or equipment.
 - 4.9 Prior to performing work in a NYULH building, the Project Manager shall arrange for Facilities, Real Estate, or building management to shut down electrical power in the construction space using the NYULH Pre-Demolition Validation Permit process or another process authorized by Facilities.
 - 4.10 Facilities, Real Estate, 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).
 - If authorized by NYUWH Engineering, contractors can tie in their temporary lighting and power.
 - 4.11 Electrical installations and equipment shall comply with NYULH Safety Policy 122, Fire Prevention.

5.0 Construction close-out

- 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 local Department of Buildings (i.e., electrician of record).
- The electrician of record shall inspect all wiring and wiring components for code-compliance and shall inform the project manager of all deficiencies.
- 5.2 The project manager shall notify Facilities or Real Estate, as applicable, when deficiencies have been corrected.
- 5.3 As a rule, a licensed electrician from Facilities or one retained by Real Estate, as applicable, shall re-inspect the project to confirm that electrical deficiencies have been corrected.

6.0 Electrical extension cords

- 6.1 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 8.0.
- 6.2 Extension cords are permitted in non-patient care areas for temporary use only, and must be used in accordance with local Electrical Code, which requires that extension cords are:
- not used as a substitute for the fixed wiring
 - not run through holes in walls, structural ceilings, suspended ceilings, dropped ceilings, floors, and do not come in contact with sprinkler pipes
 - not run through doorways, windows or similar openings
- 6.3 Extension cords used in wet areas must be GFCI protected. A limited number are available in the Facilities Department stockroom and the electrical shop.

7.0 Relocatable Power Taps (RPTs)

- 7.1 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, and corridors.
- 7.2 RPTs and power strips used in patient care rooms shall comply with all applicable requirements of NFPA 99 (2012) and NFPA 101 (2012).

7.3 Clamp-mounted RPTs are not permanent. They shall be installed by BioMed, Clinical Engineering, Facilities, or MCIT and inventoried by BioMed or Clinical Engineering.

7.4 RPTs shall:

- not be 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
 - not 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)
- be installed in an electrical outlet with no other devices plugged into outlets on the same circuit. If in doubt, contact Facilities to specify the outlet that may be used.
- never exceed 75% device capacity load (see Appendix A)

8.0 Emergency Use of Extension Cords and RPTs

8.1 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.


8.2 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 their manager.

9.0 Use of electrical equipment

9.1 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.

- 9.2 Electrical cords must not be frayed or damaged.
- 9.3 All plugs must be grounded-type plugs; three-prong to two-prong adapters are not permitted.
- 9.4 Ungrounded equipment must be manufactured with non-metallic casing, be UL listed, and have double insulated wire (i.e., labelled double insulated or Class II, or bearing this symbol ).
- 9.5 Equipment with IEC listings only are not permitted unless approved by a licensed electrician from Facilities.
- 9.6 If a circuit breaker trips upon activation of equipment, the circuit breaker or ground fault (if a GFIC outlet) shall NOT be reset. Facilities or Real Estate must be called immediately.

10.0 **Performance monitoring**

EH&S shall conduct QA inspections for electrical deficiencies in conjunction with Hazard Surveillance inspections and QA inspections for penetrations.

11.0 **Emergency procedures for electrical shock**

- 11.1 If someone appears to be receiving electrical shock and is in contact with current, do NOT touch the person with bare hands.
- 11.2 Shut off the current if possible. Stay away from high-voltage wires until the power is turned off.
- 11.3 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. A dry towel will not suffice. Push the victim or current source aside to remove contact from the victim.
- 11.4 If someone appears to have been a victim of electrical shock, do not move the person unless they are in immediate danger.
 - Dial the emergency phone number
 - NYULH Emergency Operators: 33-911 or 212-263-3911
 - Life threatening emergencies: 911

Related policies

- 120: Construction Contractor Safety Requirements
- 122: Fire Prevention
- 203: Electrical Equipment – Privately Owned
- 207: Portable Space Heaters

Appendix A	Common Devices Used with RPTs
Issue date	11/2019
Replaces	4/2019
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Summary of Revisions

Revision date	Section	Changes
October 2019	1.0	Incorporates Winthrop and NYU Long Island School of Medicine
	3.2	Adds responsibilities at Winthrop
	7.1	Update LSC code reference, and remove reference to categorical waiver.
	Reviewed by	Adds review by NYULH-B Facilities and NYU Winthrop Hospital
April 2019	Throughout	Updates logo and organizational references
	Application	Adds Clinical Engineering and Clinical Staff who use RPTs
	3.2	Adds responsibility to Clinical Engineering for providing training on proper use of RPTs and RPT capacity
	3.5	Adds responsibility for Clinical Staff who use RPTs
	Appendix A	Adds Common Devices Used with RPTs
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



This is a Relocatable Power Tap (RPT).

Safety Policy 157: Appendix A

It must be permanently secured to an IV pole.

A maximum of 15 Amps can be plugged into it.

Common Devices Used with RPTs	Device Name	Electrical Current
	Bair Hugger	12 Amps
	Blood/Fluid Warmer	8 Amps
	Force Triad ESU	7 Amps
	Stryker OR Table	5 Amps
	Sequential Compression Device (SCD)	4 Amps
	Alaris Pump	2 Amps

For example: 1 Force Triad ESU + 1 Stryker OR Table + 1 Alaris Pump = 14 Amps

1 Blood/Fluid Warmer + 1 Stryker OR Table + 1 Alaris Pump = 15 Amps

For equipment not listed, contact Clinical Engineering at 212-263-5021.