Use of Power Strips and Relocatable Power Taps

PURPOSE
The purpose of this policy is to establish procedures for the introduction and use of power strips or relocatable power taps (RPTs). **All power strips for use in patient care areas must be approved for use before they are placed into service.**

APPLICATION
The policies and procedures in this document apply to all power strips in any leased or owned facility and to all employees, volunteers, and staff.

DEFINITIONS
*Ampacity* is defined in Section 3.3.7 of NFPA 99-2012: *Health Care Facilities Code* as “the current, in amperes, that a conductor can carry continuously under the conditions of use without exceeding its temperature rating.”

*Patient bed location* is defined in Section 3.3.136 of NFPA 99-2012 as “the location of a patient sleeping bed, or the bed or procedure table of a critical care area.”

*Patient care area*. See *Patient care room*.

*Patient-care-related electrical equipment* is defined in Section 3.3.137 of NFPA 99-2012 as “electrical equipment . . . that is intended to be used for diagnostic, therapeutic, or monitoring purposes in a patient care vicinity.”

*Patient care room* is defined in Section 3.3.138 of NFPA 99-2012 as “any room of a health care facility wherein patients are intended to be examined or treated.” Note that this term replaces the term “patient care area” used in the 1999 edition of NFPA 99.

*Patient care vicinity* is defined in Section 3.3.139 of NFPA 99-2012 as “a space, within a location intended for the examination and treatment of patients [i.e., patient care room], extending 1.8 m (6 ft.) beyond the normal location of the bed, chair, table, treadmill, or other device that supports the patient during examination and treatment and extends vertically to 2.3 m (7 ft. 6 in.) above the floor.”

*Power strip* is a block of electrical sockets that attaches to the end of a flexible cable (typically with a grounded plug on the other end), allowing multiple electrical devices to be powered from a single electrical receptacle.

*Receptacle* is defined in Section 3.3.154 of NFPA 99-2012 as “a contact device installed at the outlet for the connection of an attachment plug. A single receptacle is a single contact device with no other contact device on the same yoke. A multiple receptacle is two or more contact devices on the same yoke.”

*Relocatable power tap (RPT)* is a power strip of the polarized or grounded type equipped with overcurrent protection and listed as in compliance with UL 1363.

*Special purpose relocatable power tap (SPRPT)* is a power strip of a polarized or grounded type equipped with overcurrent protection and listed as in compliance with UL 1363A or UL 60601-1 for use with medical equipment. SPRPTs come in two types: Type 1 – permanently attached to equipment assembly and Type 2 – non-mounted type.
POLICIES

1. In new health care facilities or existing facilities that undergo renovation or a change in occupancy, patient care rooms and patient bed locations shall be provided with receptacles as required in Section 6.3.2.2.6 of NFPA 99-2012.

2. Power strips that are deemed unsafe by the Engineering Services, Safety, or Biomedical Engineering departments or hospital administrators will be taken out of service and disposed of.

3. In the patient care vicinity, power strips may not be used to power non-patient care-related electrical equipment (e.g., personal electronics).

4. Outside the patient care vicinity, some types of power strips may be used for both patient care-related electrical equipment and non-patient-care-related electrical equipment.

5. In patient care rooms:
   • Power strips or relocatable power taps are approved for limited use only.
   • Patients and visitors are prohibited from using a personally owned power strip.

6. In all non-patient care rooms, power strips or relocatable power taps that are UL listed and meet NEC, NFPA, and OSHA requirements may be used.

Summary of Appropriate Use of Power Strips in Designated Areas

<table>
<thead>
<tr>
<th>Power Strip Type</th>
<th>Patient Care Vicinity</th>
<th>Patient Care Room</th>
<th>Non-Patient Care Room</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 1 SPRPT</td>
<td>A</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>Type 2 SPRPT</td>
<td>A</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>RPT</td>
<td>N</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>Power Strip</td>
<td>N</td>
<td>N</td>
<td>A</td>
</tr>
</tbody>
</table>

A = Allowed    N = Not Allowed

Notes:
1. Power strips providing power to patient care-related electrical equipment in use with patients must be SPRPTs listed as UL 1363A or UL 60601-1 compliant.
2. Power strips providing power to non-patient care-related electrical equipment in patient care rooms must be RPTs listed as UL 1363 compliant.

7. Resident rooms in long-term care or other residential care facilities using line-operated patient-care-related electrical equipment in the patient care vicinity must comply with NFPA 99-2012 power strip requirements and this policy.

PROCEDURES

Power strips, if not properly designed, maintained, and used can constitute a serious fire hazard. To minimize this hazard, the following procedures shall apply.

1. ______________________ shall approve the use of all power strips in all patient care areas.

2. Purchase orders for power strips to be used in patient care areas must be pre-approved by ______________________.

3. In a patient care vicinity where power strips are used to power rack-, table-, pedestal-, or cart-mounted patient care-related electrical equipment assemblies, power strips must meet all of the following
conditions, as required in Section 10.2.3.6 of NFPA 99-2012:

A. The receptacles are permanently attached to the equipment assembly.
B. The sum of the ampacity of all appliances connected to the receptacles do not exceed 75 percent of the ampacity of the flexible cord supplying the receptacles.
C. The ampacity of the flexible cord is suitable according to the current edition of NFPA 70: National Electrical Code®.
D. The electrical and mechanical integrity of the assembly is regularly verified and documented through an ongoing maintenance program.
E. Means are employed to ensure that additional devices or nonmedical equipment cannot be connected to the multiple outlet extension cord after leakage currents have been verified as safe.

Note: Power strips providing power to rack-, table-, pedestal-, or cart-mounted patient care-related electrical equipment assemblies are not required to be an integral component of manufacturer-tested equipment.

4. Power strips that are permanently attached to mounted equipment assemblies must be installed by personnel who are qualified to ensure compliance with Section 10.2.3.6 of NFPA 99-2012. Currently, [Engineering Services] and [Biomedical Engineering] are the only departments with employees qualified for this task. Therefore, when other departments need this equipment to be permanently attached, a work order must be submitted to the [Engineering Services] or [Biomedical Engineering] department.

5. If power strips are used in any manner, precautions required by NFPA 101: Life Safety Code® and referenced documents must be undertaken. Staff using power strips shall insure that power strips are used appropriately, including but not limited to the following:

A. Installation of internal ground fault and over-current protection devices
B. Prevention of cords becoming tripping hazards
C. Connection of devices so that tension is not transmitted to joints or terminals
D. No “daisy chaining” of power strips
E. Proper insertion of plugs into receptacles so that no part of the metal prongs are exposed
F. Use of power strips that are adequate for the number and types of devices
G. No overloading of power strips with high-load devices
H. Power strips are properly routed without cords going through walls, ceilings, floors or similar openings
I. Power strips are not used in areas where air circulation is limited as this may lead to overheating
J. Power strips that are damaged, i.e. melted, burned, frayed, discolored, or hot to the touch, shall be removed from use
K. In locations near water sources, use of ground fault circuit interrupters (GFCIs) may be required

REFERENCES

CMS Categorical Waiver Ref: S&C: 14-46-LSC
NFPA 70: National Electrical Code®
NFPA 99: Health Care Facilities Code
Underwriter’s Laboratories standard 1363, 1363A and 60601-1

Approved:

_____________________________________

Date: ____________________