



**FESHCom**  
**Electrical Safety Subcommittee**

ESS Determination D2012-1 25-Apr-2012

## **Recommendations for the Use of Multiple Outlet Strips for Major Appliances**

Multiple Outlet Strips, also known as Relocatable Power Taps (RPTs) were originally designed for connecting computers and their multiple accessories, all relatively low power. The most common type has six outlets, an on/off switch, and an internal circuit breaker that is designed to trip at either 15 or 20 amps.

Multiple Outlet Strips must be plugged directly into wall receptacles, and may be temporarily mounted such that a tool is not required for removal.<sup>1</sup>

Safety walkthroughs at Fermilab occasionally reveal that RPTs are being used to allow refrigerators and microwave ovens to reach wall outlets which would otherwise be out of reach. The latest OSHA interpretation on the topic, dated November 2002, states that these devices “are not designed for high powered loads such as space heaters, refrigerators and microwave ovens, which can easily exceed the recommended ampere ratings on many power strips.” See attached document, OSHA Standard Interpretation 24631.

Also, a major drawback of using RPTs is the likely presence of one or more unused receptacles, inviting inexperienced personnel to plug more appliances into the strip, thus making it more likely to overload the circuit. The ESS feels that the OSHA interpretations should be followed. See ESS Determination D2012-2 for possible alternatives.

Microwaves and space heaters in individual offices must be plugged directly into wall receptacles or removed. Exceptions are subject to the approval of the D/S/C SSO and Electrical Coordinator.

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<sup>1</sup> UL 1363, Listing for Relocatable Power Taps, Section 7: “Temporary Mounting Means”.

November 18, 2002

## OSHA Standard Interpretation 24631

Wade R. Abnett, ASP  
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Dear Mr. Abnett:

Thank you for your October 22, 2001 letter to the Occupational Safety and Health Administration (OSHA). This letter constitutes OSHA's interpretation only of the requirements discussed and may not be applicable to any questions not delineated within your original correspondence. You had concerns regarding an OSHA interpretation letter, "*The use of power strips*" addressed to Mr. Rick Cee, Chairperson, OSHA, Salt Lake City Technical Center, dated June 11, 1993. This letter has been removed from OSHA's website and is no longer considered current. We apologize for the delay in responding to your request.

**Question:** What is the current compliance status on the use of "power strips"?

**Reply:** "Power strips" (as they are most commonly referred to) "Surge/Spike Protectors" or "Portable Outlets," typically consist of several components, such as multiple electrical receptacles, on/off power switch, circuit breaker, and a grounded flexible power cord. One nationally recognized testing laboratory, Underwriters Laboratories (UL), refers to power strips as *Relocatable Power Taps (RPTs)* and, in its "*General Information for Electrical Equipment Directory*" (sometimes called the UL white book or UL Directory), describes RPTs as "*relocatable multiple outlet extensions of a branch circuit to supply laboratory equipment, home workshops, home movie lighting controls, musical instrumentation, and to provide outlet receptacles for computers, audio and video equipment and other equipment.*" Power strips may contain other electronic components intended to provide electrical noise filtering or surge protection. UL defines and lists such devices in UL 1283, *Standard for Electromagnetic Interference Filters* and UL 1449, *Transient Voltage Surge Suppressors (TVSS)*; TVSSs are dual-listed by UL and meet the requirements of UL 1363, *Relocatable Power Taps*.

OSHA's standard at 29 CFR §1910.303(b)(2), Installation and use, requires that "*Listed or labeled equipment shall be installed and used in accordance with any instructions included in the listing or labeling.*" Manufacturers and nationally recognized testing laboratories determine the proper uses for power strips. For example, the UL Directory contains instructions that require UL-listed RPTs to be directly connected to a permanently installed branch circuit receptacle; they are not to be series-connected to other RPTs or connected to extension cords. UL also specifies that RPTs are not intended for use at construction sites and similar locations.

Power strips are designed for use with a number of low-powered loads, such as computers, peripherals, or audio/video components. Power loads are addressed by 29 CFR §1910.304(b)(2), *Outlet devices*: "*Outlet devices shall have an ampere rating not less than the load to be served.*" Power strips are not designed for high power loads such as space heaters, refrigerators and microwave ovens, which can easily exceed the recommended ampere ratings on many power strips. They must also meet the requirements of §1910.305(g)(1), *Use of flexible cords and cables*. For example, the flexible power cord is not to be routed through walls, windows, ceilings, floors, or similar openings.

Thank you for your interest in occupational safety and health. We hope you find this information helpful. OSHA requirements are set by statute, standards and regulations. Our interpretation letters explain these requirements and how they apply to particular circumstances, but they cannot create additional employer obligations. This letter constitutes OSHA's interpretation of the requirements discussed. Note that our enforcement guidance may be affected by changes to OSHA rules. Also, from time to time we update our guidance in response to new information.

To keep apprised of such developments, you can consult OSHA's website at <http://www.osha.gov/>. If you have any further questions, please feel free to contact the Office of General Industry Enforcement at (202) 693-1850.

Sincerely,

Richard E. Fairfax, Director  
Directorate of Enforcement Programs