Emergency lighting LCRs
In accordance with building and life safety code requirements, some facilities are required to maintain a minimum level of illumination along the entire means of egress whenever the facility is occupied. The means of egress may be more than just the aisles and main corridors, and may extend from each exit to every location where people might normally be found. Many of these spaces can be unoccupied for considerable portions of the day. Other spaces may require fully dimmable lights to facilitate any activity in the area. The desire to improve overall facility energy efficiency and eliminate potentially unnecessary redundant systems has stimulated an increased demand for LCRs to manage portions of a facility's emergency lighting system.

An emergency lighting LCR is intended to ensure that lighting levels along the means of egress meet the required minimums whenever they are needed but still allow controlled lighting circuits to be dimmed or de-energized at other times. An LCR is supplied by one of the facility's emergency power branch circuits and will always have power available to it (and to its controlled loads). It also concurrently monitors the availability of power to the non-emergency system in the facility. An important issue to recognize is that an LCR does not switch the load between normal and emergency supplies. Load switching of this type should only be performed by a transfer switch Listed in accordance with UL 1008, Standard for Safety for Transfer Switch Equipment. An LCR has only one power input source and that is connected to the emergency power supply. An LCR requires a monitoring signal only (typically voltage) from the normal power source. Most LCRs will also accept and respond to a signal input from a facility's fire (or other) alarm system.

LCRs can be integral to the lighting control (fitting inside a switch box or a lighting control panel) or be installed in parallel with an existing control. A lighting control with an integral LCR would be evaluated for compliance with the applicable requirements from any one of a number of basic standards, such as UL 20, Standard for Safety for General-Use Snap Switches; UL 1472, Standard for Safety for Solid-State Dimming Controls; UL 508, Standard for Safety for Industrial Control Equipment; or UL 244A, Standard for Safety for Solid-State Controls for Appliances. In addition, it would be evaluated for compliance with the requirements of UL 924, Standard for Safety for Emergency Lighting and Power Equipment. The UL 924 evaluation primarily assesses the logic of the LCR to ensure that it will operate as intended, when intended, while the fire and injury prevention features of the device are evaluated through compliance with one of the basic standards noted above. UL Lists LCRs under the product category “Emergency Lighting and Power Equipment (FTBR).” Guide Information for this category can be found in UL's Online Certifications Directory at www.ul.com/database and on page 36 of UL's 2004 General Information for Electrical Equipment Directory (White Book).

Whether integral to the lighting control or installed in parallel, an LCR is designed to override any existing setting (including "off") of its controlled loads and restore them to the output level needed to meet the minimum emergency lighting levels of the facility. For many LCRs, this action may be a simple bypass of a dimming or “off” position, resulting in full output. For programmable LCRs, the emergency lighting level could be less than full output if such levels achieve the minimum illumination levels required for compliance with NFPA 101, Life Safety Code, and have been included in the approved facility emergency lighting and power plan.

In summary, LCRs can play an important role in helping a facility meet the life safety and code compliance goals associated with emergency lighting as well as the economic and environmental goals of increased energy efficiency. LCRs are not transfer switches, but rather bypass or override devices that operate when normal power is interrupted or an emergency evacuation signal is activated.

For more information on LCRs, contact Mike Shulman in Santa Clara, Calif., by phone at +1-408-876-2770; or by e-mail at Michael.Shulman@us.ul.com.