



*A NEMA Signaling Protection and Communication Section,  
Healthcare Communications Group Document*

## **UL1069 Edition 7 White Paper**

Prepared by

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## 1 Introduction

On October 12, 2007, Underwriters Laboratories, Inc. (UL) published Edition 7 of UL 1069, Standard for Hospital Signaling and Nurse Call Equipment, which is applicable to hospitals and skilled nursing facilities. The clarifications and additions focused on three areas:

1. Wireless nurse-call devices
2. Definition and verification of core-system elements
3. Definition of oxygen-enriched testing for pendant controls

The purpose of this White Paper is to explain, in layman's terms, the ramifications of these changes.

## 2 Wireless Nurse Call

Before Edition 7, the ANSI/UL<sup>®</sup> 1069 (UL 1069) standard did NOT cover the use of wireless devices for call initiation or annunciation. Prior to October 12, 2007, Underwriters Laboratories<sup>®</sup> (UL) had never listed a wireless primary device under the UL 1069 standard.

### 2.1 ANSI/UL 1069 Edition 7

Effective October 12, 2007, UL 1069 Edition 7 added definition, application, and testing to utilize wireless devices as PRIMARY initiating devices in a nurse call system.

**Wireless systems listed by Intertek to the UL 1069 Edition 6 standard have been granted until November 2008 to retest systems to Edition 7 of UL 1069. However, neither the supervision claims of the manufacturer nor the reliability of the wireless transmission medium were verified by Intertek as there were no specific requirements in UL1069 Edition 6.**

The definition of wireless initiating devices as part of the primary system have some clear limitations:

1. The underlying intent of wireless devices is to extend the coverage of a hard-wired system. UL and NEMA recognize there are places in facilities where hard-wired devices cannot be in proximity to the patients, so the addition of wireless call initiation devices actually extends system coverage to areas where there is no wired coverage.
2. Wireless devices utilize a 'shared' radio frequency (RF) space that is not guaranteed to be available or work in all real world environments.
3. Since these devices operate in the shared RF space, there have been requirements added to assure the best possible reliability.
  - a. The devices are supervised. If the wireless device loses contact with the receiver for more than 90 seconds for any reason (including interference or loss of battery power, damage, etc), a supervisory alarm is placed.
  - b. On systems listed prior to Edition 7, the supervision time may be 24 hours.
4. The manufactures are required to pass extensive testing to assure units will work in predictable interference scenarios. Systems must have designs that hop or move frequencies to work around potential interferences.

### 2.2 Definitions of Core System

When UL 1069 Edition 6 was published in 2002, one of the major changes was the definition of the core nurse call system and defining devices that could be considered as ancillary or supplementary. Devices defined as core or primary, would be subject to full UL 1069 testing and verification for both the electric shock/hazard fire safety AND reliability. Devices defined as Ancillary or Supplementary would NOT be subject to full UL 1069 reliability testing and verification, as long as they were truly secondary (redundant

to a primary or core function of the system) AND were electrically isolated from any patient branch of wiring.

For example, if a patient call were to be annunciated on a pocket pager in parallel with a core system (corridor light and nurse-call console), this would be considered ancillary and the pocket-page system would not need to be submitted to UL 1069 testing. This would mean the pocket page encoder, hardware, transmitter, and portable devices themselves would not be subject to the electrical and reliability testing of UL 1069.

The definition was clear to UL and to the NEMA committee that advocated for the changes. Testing done by UL has always enforced these definitions. However, these changes were only implemented in the glossary of the UL 1069 document and were NOT specified in the testing sections.

This situation led to confusion when other nationally recognized testing laboratories would certify systems to UL 1069. In particular, systems were listed including wireless ancillary devices used as PRIMARY devices but not tested to the primary requirements. Edition 7 clarifies these requirements in the scope, glossary, and testing sections of the standard.

### **2.3 Oxygen-Enriched Environments**

The change to the standard does not directly affect facilities; rather it better synchronizes the requirements of UL 1069 to those of NFPA 99 regarding the safety of pendant devices (call cords and pillow speakers) in oxygen-enriched environments.