STANDARDS

Low Carbon Monoxide ANSI/UL 2201 Portable Generators

UL 2201 contains a comprehensive, carefully developed strategy to mitigate CO poisoning.

The hum of portable generators sounded throughout much of Florida in the aftermath of Hurricane Irma. Residents, who had been without power for days, sought to preserve the necessities–food, light and communication–by providing their own power to items such as refrigerators, freezers, air conditioners or a fan, a lamp or two and, of course, cell phones. The lucky ones had purchased and installed a generator before the storm while others scoured stores throughout the area, frantically searching for one to power up their home.

Anecdotal reports of carbon monoxide (CO) incidents also began to surface after the storm, peppering social media with warnings about the placement and use of portable generators. These peer-to-peer tales

mirrored the latest U.S. Consumer Product Safety Commission (CPSC) report concerning non-fire CO associated incidents and deaths, published in August 2017.

According to the report, covering an 11-year time span (2005-2016), a total of 780 of 965 (>80 percent) non-fire CO deaths were caused by portable generators, an average of 71 deaths per year.

UL received a letter from the CPSC requesting that UL form a working group to develop a specific proposal for requirements for portable engine-generator sets that fall under UL 2201, to reduce the risk of death and injury due to CO poisoning. A task group of 37 members was formed, including generator and engine manufacturers, trade associations, academia, government (state and federal), labor and the local response (fire department) communities.

The 2nd edition of **ANSI UL 2201-the Standard for Carbon Monoxide (CO) Emission Rate of Portable Generators achieved consensus** on January 3, 2018**.** Driven by the work of the task group and by specific comments provided by the Standards Technical Panel (STP) and other stakeholders, ANSI/UL 2201 received the affirmative votes necessary to make ANSI/UL 2201 the **first U.S. consensus standard for addressing carbon monoxide emissions from portable generators**. The CPSC, Consumer Federation of America, National Consumers League and other safety organizations have all given their support for the UL Standard as well.

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The **first safeguard calls for a reduction in CO emissions**. The method by which a manufacturer achieves this is not prescriptive, to allow the use of widely available and proven technologies already in the marketplace, such as electronic fuel injection (EFI), an onboard electronic engine management system that can significantly reduce CO emissions from the engine. By significantly reducing the amount of CO a portable generator emits, the likelihood of CO poisoning and death is also reduced.

The **second safeguard, shutoff technology,** provides additional protection when a generator is misused in an enclosed space, such as a closed garage or basement. ANSI/UL 2201 requires protection from the buildup of CO, which can be addressed by using the appropriate sensors and incorporating shutoff technology into the product.

Because field history indicates that portable generators are used, and misused, in widely variable conditions, both safeguards are important steps to help improve portable generator safety.

“CO is an unseen hazard that has caused quite a bit of injury and death for a number of years,” says Ibrahim Jilani, senior business manager for energy technology at UL. “The good news is there is technology that currently exists that can help keep the exposure to CO hazard at bay.”

ANSI/UL 2201 offers a way to measure and test for CO under a variety of circumstances, which will help verify additional protection for consumers.

“Portable generator products that comply with ANSI/UL 2201 will emit much less CO, meaning they will provide greater protection for consumers from the significant threats of CO poisoning,” says Ken Boyce, principal engineer director with UL.

“Products that are developed, tested and certified in accordance with these requirements will pose lower risks to the public. We will save lives by publishing and using this Standard,” Boyce concludes.

UL has now begun offering testing and certification to ANSI/UL 2201 with the first low carbon portable generator certification announced on March 15, 2018.