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## **PERC Releases Results of Low-Emission Gauge Study**

*Study finds that gauges reduce flow rates without freezing or blockage*

**Washington, D.C. (October 6, 2009)** — The Propane Education & Research Council (PERC) released the results of a study that evaluated the efficacy of lower-emission fixed maximum liquid level gauges (FMLLGs) with smaller orifice diameters than standard FMLLGs—devices used to indicate when a cylinder is filled to its maximum level. Conducted by the Battelle Memorial Institute and Underwriter's Laboratories, the study found that gauges with reduced orifice diameters decrease the flow of propane vapor and liquid that escapes during the normal operation of standard gauges and are not susceptible to freezing or blockage, providing encouraging support for the use of lower-emissions FMLLGs.

The PERC study tested three types of sample FMLLGs: units with a standard 54-drill size (0.055 inch) orifice, units with a smaller 72-drill size (0.0250 inch) orifice, and self-cleaning units with an effective orifice equal that of a 72-drill size (0.0250 inch) orifice. Three samples of each gauge were put through three different tests. These tests included air flow tests with subsequent calculations of propane vapor flow rates; liquid propane flow rates, including susceptibility of the orifice to freeze when exposed to liquid propane saturated with water; and susceptibility of the orifices to clog, using polystyrene beads in a water solution as a stand-in for potential particulate matter in propane fuel.

The tests confirmed that the lower-emission FMLLGs with reduced-diameter orifices significantly reduce the rate of propane flow through the device. Tests found that the 72-drill samples demonstrated gas flow rates that were over 70 percent lower than the flow rates for the standard-sized 54-drill samples and the self-cleaning orifices demonstrated gas flow rates that were just under 70 percent lower than the flow rates for the 54-drill samples. Likewise, the 72-drill samples and the self-cleaning units demonstrated liquid flow rates that were approximately 60 percent lower than the liquid propane flow rate for the 54-drill samples.

Results also showed that FMLLGs with reduced-diameter orifices pose no greater risk of freezing or clogging than FMLLGs with standard orifice sizes. These results will support the industry's continued focus on low-emission technologies.

To access a copy of the report or for more information about the study or PERC's research and development program, visit [www.propanetechnology.com](http://www.propanetechnology.com) or contact PERC's Greg Kerr at 202-452-8975 or [greg.kerr@propanecouncil.org](mailto:greg.kerr@propanecouncil.org).

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*The Propane Education & Research Council was authorized by the U.S. Congress with the passage of Public Law 104-284, the Propane Education and Research Act (PERA), signed into law on October 11, 1996. The mission of the Propane Education & Research Council is to promote the safe, efficient use of odorized propane gas as a preferred energy source.*