U.S. CONSUMER PRODUCT SAFETY COMMISSION
WASHINGTON, DC 20207

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Mr. Paul Patty
Underwriters Laboratories Inc.
333 Pfingsten Road
Northbrook, IL 60062

Dear Mr. Patty:

This letter presents recommendations from the U.S. Consumer Product Safety Commission (CPSC) staff regarding revisions to UL 217, *Single and Multiple Station Smoke Alarms*, to address reliability and performance testing for long-life (10-year) battery powered smoke alarms.

The Centers for Disease Control and Prevention (CDC), which funds state-level programs to provide smoke alarms in critical areas of the country, received a large number of consumer complaints regarding premature low-battery signals from 10-year smoke alarms. In some cases, low-battery chirping occurred within a few months after installation. CPSC also has received several complaints of premature low-battery signals associated with 10-year battery powered smoke alarms. Together, CDC and CPSC collected 63 smoke alarms and 67 lithium batteries from the field for testing by CPSC staff. The results of our tests are documented in the attached report, *Preliminary Test Results on Lithium Batteries Used in Residential Smoke Alarms, June 28, 2002*.

CPSC staff tests indicate that the premature low-battery signals exhibited in the collected field units were caused by failures of the lithium batteries used in the alarms. CPSC staff recommends that the causes for the failed batteries be further investigated by UL and that performance requirements be developed to ensure that long-life (10-year) smoke alarms perform as claimed by the manufacturer. Current requirements in UL 217 only require that battery powered smoke alarms function for a period of one year.

The CPSC staff recommends that 10-year or long-life smoke alarms not have removable, replaceable batteries. This will encourage smoke alarm manufacturers to ensure that the batteries they use meet the 10-year specification. In addition, the ability of a consumer to install a long-life or 10-year battery in a smoke alarm encourages the consumer to operate the smoke alarm past its recommended life of 10 years. An inability to remove the battery from the smoke alarm lessens the ambiguity of whom the consumer should contact when the smoke alarm begins to emit a low battery chirp. Manufacturers of 10-year smoke alarms currently do not warrant the lithium batteries

used in their alarms; rather consumers are directed to contact the battery manufacturer when these batteries begin to fail. This confusion may add another level of frustration for the consumer.

The CPSC staff believes that premature failures of long-life batteries may have an adverse effect on consumers and organizations (e.g. fire departments) that install and use smoke alarms. Most consumers lack the knowledge to determine why their 10-year smoke alarm starts chirping after just several weeks or months of use; they may begin to associate the problem, nuisance or failure with the whole product rather than just the battery. In addition, repeated occurrences of premature low battery chirping reinforce the negative perception of the smoke alarm as unsafe or unreliable. Smoke alarms have saved thousand of lives since they were first introduced in the 1970s, but these recent incidents indicating unpredictability in useful life could severely damage and erode the confidence in these life-saving devices.

Thank you for the opportunity to make these recommendations. We look forward to participating in further discussions on this matter. The views expressed in this letter are those of the staff and have not been reviewed or considered by the Commission.

Sincerely,

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cc: James R. Beyreis, UL/Northbrook
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