

Subject 25B

November 17, 2017

SUMMARY OF TOPICS

The following changes in requirements to the Standard for Meters for Diesel Fuel, Biodiesel Fuel, Diesel/Biodiesel Blends with Nominal Biodiesel Concentrations up to 20 Percent (B20), Kerosene, and Fuel Oil, UL 25B, are being proposed:

1. Revision of testing requirements for seal materials

STP BALLOTS AND ALL COMMENTS DUE: DECEMBER 18, 2017

UL's goal is to have no interest category comprise more than one-third of the STP membership balance. To improve the current balance for STP 25, UL is looking for participants in the AHJ, Commercial/Industrial User, General, Government, Supply Chain and Testing & Standards interest categories. Definitions for these interest categories are available on the Standards STP Internet site:

<http://ulstandards.ul.com/develop-standards/participation/interest-categories/>

If you are interested in applying for STP 25 membership or are aware of potential candidates for this STP, please contact the STP Project Manager, Marcia.M.Kawate@ul.com.

For your convenience in review, proposed additions to existing requirements are shown underlined and proposed deletions are shown ~~lined-out~~.

1. Revision of testing requirements for seal materials

RATIONALE

Proposal submitted by: Randy Moses, Wayne Fueling Systems LLC

I would like to propose that the meter test standards be aligned with the dispenser test standards as it relates to the selection of seal materials and the testing required for the changing of seals as well as changes to metal components used within the meter itself. UL 87A and UL 87B were recently updated to allow the use of UL 157 seal materials that are already Recognized for the designated fluids in dispensers that were being approved for use with E25, E85 and B20. This only applied to static seals. Metals that were already tested and approved for use were also to be approved without further testing for situations where a part only has a different shape or size. Lastly, for those situations where testing is required, the test period was reduced from 2,520 to 1,008 hours.

In the case of developing standards for ethanol and bio-diesel testing, I understand that there was significant consultation and consideration as to what could be done to test products using these new fluids in dispensers. UL made a trip to Brazil, met with Wayne people and visited stations that have been using ethanol based products for many years while reviewing tear-downs of some of that equipment. In October of 2006, UL hosted a roundtable discussion to review what should be done for

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the Listing of products with ethanol blended fluids which I attended. In January of 2011, the Dept of Energy hosted a roundtable to discuss the fuel blends and product safety where they presented their findings. I also attended that meeting.

The initial outlines for dispenser testing were introduced by UL in October of 2007. In our opinion, UL took a very conservative approach to the testing of these products, especially as it related to what needed to be tested and how long that test was to last. While UL saw products firsthand that were in use in Brazil with high ethanol content and did not see any degradation of that equipment in the ensuing tear downs, it was still decided that a very robust test protocol was needed. We raised little resistance to that test protocol given our only long-term experience was indirectly through our operation in Brazil. In the initial UL outline, a static synthetic seal needed to be tested in every application, in every shape, and with every compound, for the full 15 week duration. That seemed a bit extreme and that was eventually dialed back some before the outline became a standard. The testing of the metal parts did not receive similar relief. If we made a significant change in the shape of a casting or have a different type of joint between two parts, even when made from materials that were already tested, the standard requires a new 15 week test. It probably should have been at least as easy to get relief on the metal components than the synthetic parts, but that was not the case.

My proposed changes to the standard are based on our 10 years of direct experience with using the existing protocol for testing and what we have seen in the field. We are not seeing failures/degradation in the field or in testing of our products at UL. When we use synthetic seals that are made from materials suited for ethanol or bio-diesel blends (and UL 157 Listed for such), and we apply the correct compression, the seals work. They work on day 1 and they work the same after 15 weeks. The same holds true for the metallic parts. We have not and are not seeing degradation of the materials that have been tested no matter how the parts are shaped. In addition, even after those parts are tested for the 15 week period, they are not taken apart at UL to look for degradation of the part. The only way that degradation would be noticed is if the assembly leaked during the test.

The first part of my proposal is to eliminate testing of materials that have already been through the permanence test. For materials that require a permanence test, my suggestion was to go to 6 weeks in place of the 15 weeks. I am basing that on a comment that was made by one of the presenters at the DOE meeting where he stated that failures they saw during testing were during the first 4 weeks of the test. The 6 week proposal adds a 50% safety factor to that duration.

As a manufacturer, it is our desire to produce a quality product that is fully compatible with the fluids dispensed. Making changes to test protocols that shorten the test time required without compromising the safety of the product allows us to better serve this market with more timely introductions of products without compromising the safety we all desire.

PROPOSAL

6.2.3 Nonmetallic materials – system level

6.2.3.1 For all materials, gaskets and seals that have been shown to comply with the applicable requirements for static seals in the Standard for Gaskets and Seals, UL 157, or with the requirements under material level tests shall be subjected to the system level tests for the applicable component after the Long Term Exposure Test, Section 12. Static seals shall be provided in accordance with 12.2.4. Static seals that comply with specified fluids according to the UL 157 tests are not subject to the Long Term Exposure Test.

12.3.3 The chamber temperature is increased to $60 \pm 2^{\circ}\text{C}$ ($140 \pm 4^{\circ}\text{F}$). When the chamber reaches this temperature, the exposure period begins. The samples are exposed to the applicable test fluid at $60 \pm 2^{\circ}\text{C}$ for approximately 168 hours. At the end of this duration, the exposure period is halted and the chamber