# BLOCK 7 ITEMS (B7) TOLERANCES ON TESTS USING TRANSFER STANDARDS

**Source:**
Seraphin Test Measure Company, A Division of Pemberton Fabricators, Inc.

**Purpose:**
The purpose of these proposals is to change the language in the tolerance paragraphs to provide consistency with the changes in the combined amended proposals of 2022 S&T Agenda Item GEN-19.1. and OTH-22.1. In the codes mentioned below, the current language of Handbook 44 states that when transfer standards are used, the basic tolerances to be applied to the devices under test are to be increased by the uncertainty of the transfer standard (i.e., two times the standard deviation of the transfer standard). The proposed language simply states that the formula given in the General Code (the proposed G-T.5.) be used, rather than repeat the formula in each of the specific codes listed below.

**Items Under Consideration:**

Seraphin's updated changes to Block 7 are as follows:

## B7: CLM-22.1 T.3. On Tests Using <u>Type 2 </u>Transfer Standards.

**Item Under Consideration:**
Amend Handbook 44, Cryogenic Liquid-Measuring Devices Code as follows:

**T.3. On Tests Using <u>Type 2 </u>Transfer Standards.** – ~~To the basic tolerance values that would otherwise be applied, there shall be added an amount equal to two times the standard deviation of the applicable transfer standard when compared to a basic reference standard.~~ **<u>When commercial meters are tested using a Type 2 transfer standard, the tolerance applied to the meter under test shall be calculated using the formula specified in the General Code Tolerance section.</u>**
**<u>(Amended 202X)</u>**

## B7: CDL-22.1 T.3. On Tests Using <u>Type 2 </u>Transfer Standards.

**Item Under Consideration:**
Amend Handbook 44, Carbon Dioxide Liquid-Measuring Devices Code as follows:

**T.3. On Tests Using <u>Type 2 </u>Transfer Standards.** – ~~To the basic tolerance values that would otherwise be applied, there shall be added an amount equal to two times the standard deviation of the applicable transfer standard when compared to a basic reference standard.~~ **<u>When commercial meters are tested using a Type 2 transfer standard, the tolerance applied to the meter under test shall be calculated using the formula specified in the General Code Tolerance section.</u>**
**<u>(Amended 202X)</u>**

## B7: HGM-22.1 T.4. Tolerance Application on Tests Using Transfer Standard Test Method.

**Item Under Consideration:**
Amend Handbook 44, Hydrogen Gas-Measuring Devices Code as follows:

**T.4. Tolerance Application on Tests Using Transfer Standard Test Method.** – ~~To the basic tolerance values that would otherwise be applied, there shall be added an amount equal to two times the standard deviation of the applicable transfer standard when compared to a basic reference standard.~~ **<u>When commercial meters are tested using a Type 2 transfer standard, the tolerance applied to the meter under test shall be calculated using the formula specified in the General Code Tolerance section.</u>**

**(Amended 202X)**

**Previous Action:**
New

**Background and Discussion:**

Seraphin and NIST OWM are working together in a joint effort to address changes to Block 7 items which are impacted by changes being made to GEN-19.1. Seraphin made changes to the Block 7 items that appear in the 2022 Interim Meeting Agenda to make it clear that the tolerances apply to Type 2 transfers standards as stated in the definitions included in the combined proposal GEN-19.1 and OTH-22.1. Additionally, the tolerances in the specific codes refer to the NIST HB 44 General Code Tolerance section rather than providing the equation in each Tolerance section in the Liquid Measuring Devices Code, Carbon Dioxide Liquid-Measuring Devices, and Hydrogen Gas-Measuring Devices Code. Although changes will be needed to the Taximeter and Transportation Network Measuring Systems Code, Block 7 is limited to measuring devices and if these changes are accepted, other industry sectors will be involved in making similar changes as they apply to their specific Handbook 44 codes.

If the S&T Committee presents the combined item GEN-19.1 and OTH-22.1 for a vote in 2022, then this item may also go forward for a vote in 2022.