Summary of Substantive Changes between
CSA U.S. No.3-1992 “Requirements for Excess Flow Valves” and
ANSI Z21.93-13/CSA 6.30-13 “Excess flow valves for natural and LP gas with pressures up to 5 psig”

Presented to the IAPMO Standards Review Committee on October 7, 2013

General: There are significant technical changes to this standard that will have an impact on currently listed products. The substantive changes are:

- Changed the scope of the standard to
  - reduce the intended valve use pressure from 250 psig to 5 psi and
  - increase the temperature range to -20 to 150ºF (-29 to 66 ºC) from 32 to 125ºF (0 to 52 ºC) (see Sections 1.3 and 1.5)
- Added equipment and data required to be furnished by the manufacturer (see Section 4.2)
- Added requirements for valves with flare fittings (see Section 4.5)
- Added additional requirements for information to include with the instructions (see Section 4.9)
- Revised the performance requirements (see Section 5)
- Changed the required programs and test procedures for manufacturing quality assurance (see Section 6)

Section 1, Scope:
Section 1.3: Reduced the intended valve use pressure from 250 psig to 5psi as follows:

Section 1.5: Increased the temperature range to -20 to 150ºF (-29 to 66 ºC) from 32 to 125ºF (0 to 52 ºC)

Section 4.2, Equipment and data to be furnished by the manufacturer: Included additional equipment and data required to be furnished by the manufacturer as follows:

- Minimum and maximum operating pressure (in appropriate units, inches of water, pounds per square inch, and metric equivalents);
- Rated trip flow at minimum operating pressure; closing flow rate with 1,000 Btu per cubic foot, 0.54 specific gravity gas;
- Maximum pressure drop at trip flow; Maximum operating pressure differential;
- Mounting classification (see 2.1.1);
- Maximum flow capacity;
- Maximum pressure drop at maximum flow capacity;
- Flow Capacity at 0.5 in wc pressure drop; and
**i) Mounting position(s)**

Section 4.3, Connections:
- Removed former Table 1, Minimum Thread Length and Length to Shoulder,
- retained reference to ANSI/ASME B1.20.1, Standard for Pipe Threads, General Purpose (Inch), and

Section 4.4, Resistance to tampering: Added new requirement to include means to prevent tampering.

Section 4.5, Excess flow valves equipped with flare fittings: Added requirements for flare fittings and including Table 1, Minimum Wrench Grip Dimensions for Excess Flow Valves Equipped with Flare Fittings, and Table 2, Flare Fitting Dimensions.

Section 4.9, Instructions:
Section 4.9.1, General instructions; Added additional requirements for the minimum information included in the installation and operation instructions.

Section 4.9.2: Added the requirement to include complete step-by step instructions to address applications such as valve location, sizing and selection.

Section 4.9.3, Additional Instructions: Added the requirement to include a list of limitations in the instructions.

Section 4.10, Marking: Added description of marking types by class and included additional requirements for Class III markings

**Section 5: Performance**

Section 5.1.2: Increased the test temperature range to -20 to 150°F (-29 to 66 ºC) from 32 to 125°F (0 to 52 ºC)

Section 5.3.3 Bending movement: Changed the weight applied to create the static load for all pipe sizes and increased the number of times to apply the load from one to three times.

**Section 5.4, Leakage**
Section 5.4.3 Internal Seat Leakage; Added performance requirements for non-bypass excess flow valves.

**Section 5.5 Trip flow and flow capacity**
Section 5.5.2: Changed the performance requirement for the range of flow rate that the valve can trip from, not more than 1.10 or less than 0.80 of rated trip flow, to between 1 and 1.4 times the rated trip flow.

Section 5.5.3: Added the requirement that the manufacturer specified maximum flow capacity shall not be greater than 90% of the rated trip flow.
Section 5.5.4: Changed the
- temperature from “manufacturer-specified” to 77 ± 10°F (25 ± 5.5 °C), and
- pressure from “maximum operating pressure” to “5 in wc”,
and added an additional step to calculate flow capacity.

Section 5.6, Bypass flow rate: Decreased the allowable bypass flow rate from 10 cubic feet per hour to 2.5 SCFH at up to 2 psi and up to 5 SCFH between 2 and 5 psi.

Section 5.7, Reset: Increased the torque required to manually reset the valve and changed the temperature and pressure of the test conditions.

Section 5.14, Marking material adhesion and legibility: Added an accelerated aging test for labels that are not recognized as UL 969 compliant.

Section 6, Manufacturing and production tests: Changed the required programs and test procedures for manufacturing quality assurance.

The following performance tests were added:
Section 5.3.4, Impact test
Section 5.8, Snap acting load test
Section 5.10, High temperature performance
Section 5.11, Season cracking
Section 5.12, Salt spray
Section 5.13, LP-gas compatibility test