Instructions to Voters/Comments on API 520 Part I Ballot – "Closing Pressure Definitions"

- Your comments should be limited to the **red-lines portions of the ballot only.**
- This ballot covers the API 520 TF action item 2023-05 and provides consistency with the ASME Code usage of terms such as closing pressure, reseating pressure, resealing pressure and blowdown. Since ASME XIII does not use the term 'closing pressure', the use of the word 'closing' pressure within API 520 Parts I and II should be modified to align with the ASME definitions.
- If you are voting negative, please indicate which of your comment or comments are the reason for your negative vote. API's Balloting system will categorize all of your comments as Negative.

Thanks to Sean Croxford and his team for development on this ballot.

Phil Henry
TF520 Chairman

Sizing, Selection, and Installation of Pressure-relieving Devices

Part I—Sizing and Selection

API STANDARD 520, PART I
TENTH EDITION, OCTOBER 2020

(Errata 1 incorporated into base document)

American Petroleum Institute

3 Terms, Definitions, Acronyms, and Abbreviations

3.1 Terms and Definitions

3.1.5
blowdown
The difference between the set pressure and the closing pressure of a pressure-relief valve, expressed as a percentage of the set pressure or in pressure units.

NOTE The observed closing pressure is determined from seeing, feeling, or hearing where leakage from the valve can be detected after establishing blowdown.

3.1.14
closing pressure/reseating pressure
The value of decreasing inlet static pressure at which the valve disc reestablishes contact with the seat or at which lift becomes zero as determined by seeing, feeling, or hearing.

3.1.51
resealing pressure *(new definition)*
The value of decreasing inlet static pressure at which no further leakage is detected after closing of the pressure relief valve.

4 Pressure-relief Devices

4.1 General

4.2 Pressure-relief Valves

4.2.1 Spring-loaded Pressure-relief Valves

4.2.1.1 Conventional Pressure-relief Valves

4.2.1.1.8 The valve closes when the inlet pressure has dropped sufficiently below the set pressure to allow the spring force to overcome the summation of forces at A, B, and C. The pressure at which the valve reseats is the closing pressure as identified by seeing, feeling, or hearing. The difference between the set pressure and the closing pressure is blowdown where leakage from the valve can be detected after establishing blowdown.

4.2.1.2 Spring-loaded Pressure-relief Valves for Liquid Service

4.2.1.3 Balanced Pressure-relief Valves

4.2.1.4 Pressure-relief Valve Trim Selection

4.2.2 Pilot-operated Pressure-relief Valves

4.2.3 Cold Differential Test Pressure

4.2.4 Restricted Lift Pressure-relief Valves

4.2.5 Pressure-relief Valve Operating Ratio

4.2.5.1 The user should establish an operating ratio or operating margin sufficient to minimize PRV simmer and activation. When establishing the operating ratio, the user should include normal, transient, start-up, and shutdown conditions (see API 521 section 4.1). The ASME BPVC, Section VIII, Division 1, Non-Mandatory Appendix M-10 provides additional guidance on establishing the operating margin.

4.2.5.2 The PRV blowdown should be considered when establishing the operating ratio or operating margin. A long blowdown may make it difficult to get the PRV to close after activation if the closing or resealing pressure is below the operating pressure. For example, liquid certified PRVs discharging vapor, could exhibit blowdowns as high as 20% (see 4.2.1.2.7 and 4.2.1.4.4).