Fugitive Emissions Testing on Pipeline and Wellhead Equipment Used in the Petroleum and Natural Gas Industries

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May: As used in a standard, “may” denotes a course of action permissible within the limits of a standard.

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Suggested revisions are invited and should be submitted to the Standards Department, API, 200 Massachusetts Avenue, NW, Suite 1100, Washington, DC 20001, standards@api.org.

Precautions

Please note the following precautions with regard to use of this standard.

WARNING Depending on the design of the test valve and/or the nature of the test itself, the potential exists for a rupture of the pressure boundary components during testing. Protection for test personnel **shall** be provided.

CAUTION This test procedure has provisions for testing with flammable gases. Proper safety protocols **shall** be implemented.

The emissions leak test system shall conform to all local and governmental safety standards and **shall** be equipped with pressure relief valve(s) and rupture disc and vents.

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Fugitive Emissions Testing on Pipeline and Wellhead Equipment Used in the Petroleum and Natural Gas Industries

1 Scope

This standard identifies the requirements for testing of valves and chokes where fugitive emission of methane at pressures up to 138.0 MPa (20,000 psi) is a consideration. Factors affecting fugitive emissions performance that are considered by this standard include temperature, pressure, and thermal and mechanical cycling. Through-bore valve leakage is outside the scope of this document.

This standard is written for testing of a complete valve assembly and not for individual components and/or parts.

2 Normative References

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any addenda) applies.

ISO 15848-1, *Industrial Valves Measurement Test and Qualification Procedures for Fugitive Emissions*

ISO 9712, *Non-destructive Testing*

ASNT SNT-TC-1A, *Personnel Qualification and Certification in Nondestructive Testing*

3 Terms, Definitions, Abbreviations, and Symbols

For the purposes of this standard, the following definitions shall apply.

3.1 Terms and Definitions

3.1.1
axial
In the direction of a shaft or stem axis.

3.1.2
body seal
Any seal in pressure-containing parts except stem (or shaft) seals.

3.1.3
die-formed packing
A valve stem packing typically constructed from ribbons of graphite tape or braided packing that has been subjected to pre-compression with tooling of a specific geometry. This process changes the shape and density of the material from its original free shape and natural density to a defined shape and higher density.

3.1.4
fugitive emissions
Gaseous leak given off to the environment by a piece of equipment. Used in reference to volatile organic hydrocarbons (VOCs) and expressed as either a concentration or a rate (e.g., ppm or mol/sec).

NOTE This does not address through-bore valve leakage.

3.1.5
gland
A movable part that protrudes into a seal box to compress a packing set or packing ring.