Manual of Petroleum Measurement Standards Chapter 5.6

Measurement of Liquid Hydrocarbons by Coriolis Meters

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

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Measurement of Liquid Hydrocarbons by Coriolis Meters

1 Scope

This standard is intended to be a guide for the specification, installation, verification, and operation of Coriolis meters used to dynamically measure liquid hydrocarbons. API *MPMS* Ch. 5.6 also includes information that will assist in troubleshooting and improving the performance of the meters.

Use of a Coriolis meter as a stand-alone density meter is not addressed by this standard.

1.1 Field of Application

This standard describes methods to achieve custody transfer measurement of liquid hydrocarbon quantities (mass or volume) using a Coriolis meter. Coriolis meters can provide outputs for mass flow rate, volumetric flow rate, and density. The choice of the quantity output (mass or volume) depends on commercial, contractual, regulatory, and performance requirements.

This document provides guidance for the application, installation, proving, mass calculations, auditing, reporting, and security requirements for Coriolis meters.

Some of the guidance provided within also applies to allocation measurement. API *MPMS* Ch. 20[19] allows for different performance requirements.

Guidance for the measurement of density is found in API *MPMS* Ch. 9[6].

2 Normative References

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

API *MPMS* Ch. 21 (all sections), *Flow Measurement Using Electronic Metering Systems*

API *MPMS* Ch. 21.2, *Electronic Liquid Volume Measurement Using Positive Displacement and Turbine Meters*

API *MPMS* Ch. 21.2-A1, *Addendum 1 to Flow Measurement Using Electronic Metering Systems, Inferred Mass*

3 Terms, Definitions, And Symbols

3.1 Terms and Definitions

For the purpose of this document, the following definitions apply. Terms of more general use may be found in the API *MPMS* Chapter 1, Online Terms and Definitions Database.

3.1.1
calibration (Coriolis)
The process of using a reference standard to determine a coefficient that adjusts the output of the Coriolis transmitter to bring it to a value that is within the specified accuracy tolerance of the meter over a specified flow range. This process is normally conducted by the manufacturer.